

SUMMER 20 | 15

AMERICAN UNIVERSITY
SCHOOL OF INTERNATIONAL SERVICE
GRADUATE PRACTICUM

WATER, COOPERATION, AND PEACE

*The Peacebuilding Significance of Joint
Israeli-Palestinian Wastewater Projects*

ACKNOWLEDGEMENTS

The 2015 American University (AU) Practicum Team would like to express their deepest thanks to our project partners, the Arava Institute for Environmental Studies (AIES) and the Palestinian Wastewater Engineers Group (PWEG), for their guidance, enthusiasm, and willingness to openly share their experiences and work during our time in Israel and the West Bank.

The Team would also like to sincerely thank Dr. Eric Abitbol and Dr. Ken Conca for their invaluable insights and crucial support throughout the entirety of the research and report-writing process. The Team deeply values the vast knowledge and direction provided by all of these individuals, as well as the many others with whom we were fortunate enough to engage with in the region. Their contributions and insights have been vital to the composition of this report.

Finally, the Team would like to extend its overwhelming gratitude to the Center for Israel Studies at American University for its generous financial support, which made travel to the region possible. The Team would also like to give thanks to Andrew Conca-Cheng for granting us permission to utilize the photographs he took in the region, which are used throughout this report.

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OUR PARTNERS: AIES & PWEG

The **Arava Institute for Environmental Studies (AIES)** was founded in 1996, and is an Israeli-based scientific, non-profit, and academic research institution that aims to generate the regional capacity for conciliation and cooperation in the Middle East in order to transcend political boundaries and achieve environmental change. The organization's Center for Transboundary Water



Management (CTWM), which is funded by the United States Agency for International Development (USAID), provides a platform for regional water professionals and policy makers to cooperate on water conservation, desalination, wastewater treatment, and education. AIES also conducts a wide range of research projects outside of water management, including renewable energy and sustainable development.¹

Founded in 2004, the **Palestinian Wastewater Engineers Group (PWEG)** seeks to enhance professional skills in the water and solid-waste sector by focusing on capacity-building activities. Their main objective is to protect water resources from pollution and prevent further environmental degradation. PWEG assists local



authorities in tasks that include raising funds and designing and implementing water and sanitation programs. PWEG has also worked with local communities to provide health sanitation systems and implement solar energy projects. Funding for such projects comes from various organizations such as the United Nations Development Programme (UNDP).²

AIES and **PWEG** formed a partnership approximately seven years ago when they began working together on the Red Sea-Dead Sea Conveyor Project.^{3,4} Both organizations have continued to work together to solve wastewater issues within the region, and to engage with one another in cooperative transboundary wastewater projects to implement accessible, decentralized wastewater treatment plants for Palestinian communities that are off the grid and not connected to a major sewage infrastructure.⁵ Recently, AIES and PWEG have explored new possibilities to expand the reach and impact of their joint projects.

PREFACE

The School of International Service (SIS) at American University offers its Master's candidates the opportunity to fulfill their capstone requirement by participating in a practicum, a course based on team research. The summer 2015 "Water, Cooperation, and Peace in the Middle East" Practicum Team included eight students led under the guidance and supervision of two SIS faculty members, Dr. Eric Abitbol and Dr. Ken Conca. The Team focused on evaluating the environmental peacebuilding significance of cooperative transboundary wastewater treatment initiatives in Israel and Palestine through a combination of desk research, theoretical training sessions, and field research. This was the third year of the SIS-sponsored practicum and the third year of working in Israel and the Palestinian West Bank with our two partner organizations: the Arava Institute for Environmental Studies (AIES) and the Palestinian Wastewater Engineers Group (PWEG).

Members of the 2015 AU Practicum Team represented a range of SIS programs including: Ethics, Peace, and Global Affairs; Global Environmental Politics; International Development; International Peace and Conflict Resolution; and U.S. Foreign Policy and National Security. The diversity in academic backgrounds and disciplines provided the Team with multiple perspectives and insights regarding the nature of conflict, peacebuilding, and water in the region. Prior to fieldwork, the Team received training on subjects including environmental peacebuilding theory, hydropolitics in the Middle East, and research methods from Dr. Abitbol and Dr. Conca.

The field research component of the practicum lasted two weeks, from May 31 to June 12, 2015. During this time, the AU Practicum Team stayed at the Kenyon Institute, the home of the Council for British Research in the Levant in Jerusalem, which is located in the Sheikh Jarrah neighborhood of East Jerusalem. While in Israel and the West Bank, the Team met and interviewed individuals spanning various levels of Israeli and Palestinian society, including: local community members, beneficiaries of wastewater treatment projects, mayors of towns and villages in the West Bank, municipality members, non-governmental organizations (NGOs), wastewater experts and engineers, and other influential Israeli and Palestinian government officials.



Dead Sea From Ein Gedi

Photo Credit: Julia Chalphin

TABLE OF CONTENTS

Acknowledgements.....	2
Our Partners: AIES and PWEG.....	3
Preface.....	4
List of Tables and Figures.....	6
List of Acronyms.....	7
Executive Summary.....	8
Section Notes.....	10
Section 1. Introduction.....	11
1.1 Methodology.....	12
1.2 Wastewater Management in the West Bank.....	13
1.3 Water Sources in Israel and the West Bank.....	14
1.4 Origins of Israeli-Palestinian Water Disputes.....	16
1.5 Oslo II and Water.....	17
1.6 Does Water Bring Conflict or Cooperation?.....	19
1.7 Pathways to Environmental Peacebuilding.....	20
1.8 PWEG and AIES Wastewater Initiatives.....	21
Section 1 Notes.....	25
Section 2. Examination of Seven Peacebuilding Obstacles and Opportunities in Cooperative Wastewater Management.....	28
2.1 The Political Geography of West Bank Boundaries.....	30
Site and Stream Story 1: Kidron Valley/Wadi Nar.....	34
2.1 Notes.....	37
2.2 The Securitization and Desecuritization of Water.....	39
Site and Stream Story 2: Al Taybeh-Ramoun Wastewater Treatment Plant.....	44
2.2 Notes.....	46
2.3 The Politics of Information Sharing.....	48
Site and Stream Story 3: Wadi Beitunia/Nahal Modi'in.....	54
2.3 Notes.....	56
2.4 Sustaining and Building Livelihoods.....	57
Site and Stream Story 4: Al 'Auja.....	60
2.4 Notes.....	62
2.5 Gender and Rural Development.....	63
Site and Stream Story 5: Khirbet 'Atouf.....	65
2.5 Notes.....	67
2.6 Public Participation.....	68
Site and Stream Story 6: West Nablus Wastewater Treatment Plant.....	73
2.6 Notes.....	75
2.7 Symbolism and Cooperation over Wastewater.....	77
Textbox 2.7a: Symbolism and Unilateral Wastewater Projects.....	89
2.7 Notes.....	91
Section 3. Looking Ahead.....	93
3.1 The AIES-PWEG Partnership and Scaling Out.....	94
3.2 Recommended Assessments and Analyses.....	95
Section 3 Notes.....	96
Section 4. Conclusion and Recommendations.....	97
4.1 Conclusion.....	98
4.2 Recommendations.....	99
Section 4 Notes.....	102
Bibliography.....	103

LIST OF TABLES AND FIGURES

Figure 1.2a: Water Consumption in Israel and the West Bank.....	14
Figure 1.3a: The Mountain Aquifer and the Coastal Aquifer.....	15
Figure 1.8a: AIES-HWE Wastewater System.....	23
Figure 1.8b: PWEG Wastewater System.....	24
Table 2.2a: Classification of Issues According to the Framework of Securitization.....	39
Table 2.2b: Israeli Military Orders on Water in 1967.....	40
Table 2.2c: Quotes of Cooperation and Environmental NGO Water Projects.....	42
Table 2.7a: Symbolic Meanings Perceived by each Category of Actor.....	86
Textbox 2.7a: Symbolism in Unilateral Wastewater Projects.....	89
Figure 3.2a: USAID Conflict Analysis Framework 2.0 (2012).....	95

LIST OF ACRONYMS

AIES	Arava Institute for Environmental Studies
AU	American University
CAF	Conflict Analysis Framework
COGAT	Coordination of Government Activities in the Territories
CTWM	Center for Transboundary Water Management
DWW	Decentralized Wastewater
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization
GTZ	German Technical Cooperation Agency
GWN	Good Water Neighbors
HWE	House of Water and Environment
ICA	Israeli Civil Administration
IDF	Israeli Defense Forces
INPA	Israel Nature and Parks Authority
IWRM	Integrated Water Resources Management
IWA	Israeli Water Authority
JWC	Joint Water Committee
KfW	German KfW Development Bank
MRC	Israeli Ministry of Regional Cooperation
NIS	Israeli New Shekel
NGO	Non-Governmental Organization
PA	Palestinian Authority
PELS	Peacebuilding and Environmental Leadership Seminar
PWA	Palestinian Water Authority
PWEG	Palestinian Wastewater Engineers Group
SIS	School of International Service
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

The following report is divided into four main sections.

Section 1. Introduction: This section presents the methodology utilized in this report and examines the current status of water in the West Bank amidst the ongoing Israeli-Palestinian conflict. Palestinians in the West Bank currently face a fresh water shortage, and improvements to wastewater management systems could help to improve access to limited water resources.

This section also provides a brief history of the Israeli-Palestinian conflict and its influence on water, including the impact of the 1995 Oslo Accords on water management in the West Bank. Despite the obstacles created by Oslo – such as the absence of a long-term Israeli-Palestinian agreement regarding water issues, the entrenchment of power inequalities, and the fragmentation of land and authority in the West Bank – the issue of water in Israel and Palestine continues to provide opportunities for transboundary cooperation, especially among nongovernmental actors. An overview of the types of projects carried out by two such actors, AIES and PWEg, is also provided in this section in the technical descriptions of various types of wastewater management and treatment options. The section concludes with further explanation of environmental peacebuilding theory, the theory upon which this report is based.

Section 2. Examination of Seven Peacebuilding Obstacles and Opportunities in Cooperative Wastewater Management: In this section, the environmental peacebuilding significance of transboundary cooperation in wastewater treatment is assessed. This is done, specifically, by examining the relevance of Israeli-Palestinian cooperation and wastewater treatment projects in addressing and building upon seven increasingly significant obstacles to, and opportunities for, building peace through cooperative wastewater efforts. These obstacles and oppor-

tunities are presented and explained within the following seven categories highlighting the core problems facing wastewater treatment management, as well as potential pathways for peace:

- **Section 2.1 The Political Geography of West Bank Boundaries:** This section utilizes the concept of political geography to examine how the physical and political boundaries created by the Israeli-Palestinian conflict have perpetuated environmental degradation and inhibited wastewater treatment. In doing so, it also highlights key obstacles to building peace among Israelis and Palestinians, including the fragmentation of social, physical, and economic landscapes in the West Bank, as well as the separation of Israelis and Palestinians. Findings in this section suggest that, although the fragmented political geography of the West Bank contributes to the perpetuation of both continued conflict and environmental degradation, cooperative wastewater treatment projects can help to create the space necessary to transcend the borders imposed by the conflict to imagine a new cooperative and geographic reality.
- **Section 2.2 The Securitization and Desecuritization of Water:** This section analyzes the process by which water has become a securitized issue within the Israeli-Palestinian conflict, and the obstacles posed by the securitization of water. It also discusses the significance of NGOs participating in cooperative wastewater treatment as actors that contribute to the desecuritization of water. In doing so, this section traces the history of water's development as a security threat through the rhetoric of securitizing actors in Israel and Palestine, and additionally addresses the means by which heavily securitized topics can be desecuritized. Analysis in this section finds that NGOs engaged in cooperative wastewater treatment are contributing to the desecuritization of water, but that desecuritization has yet to begin at the political level. Further cooperation over waste-

water between NGOs, however, presents an opportunity by which such organizations can increase their peacebuilding significance through the further desecuritization of water.

- **Section 2.3 The Politics of Information Sharing:** This section examines the obstacles and opportunities posed by the relationship between information sharing among Israelis and Palestinians and environmental peacebuilding as it pertains to transboundary cooperation on water issues. To do so, the section assesses information exchanges at various levels within Israel and the West Bank, focusing specifically on who is sharing the information, what type of information is being shared, and how that information is being shared. Findings from this section reveal key insights, ultimately suggesting that information sharing: 1) builds certainty, 2) can create tension, 3) occurs mostly at the civil and technical society level, and 4) can be stifled by power asymmetries. Ultimately, it is concluded that through encouraging increased sharing of information, actors such as PWEG and AIES can augment their peacebuilding potential by reducing uncertainties, remedying power imbalances, and building trust between Israelis and Palestinians.
- **Section 2.4 Sustaining and Building Livelihoods:** This section examines the obstacles, opportunities, and impact of cooperative wastewater projects on livelihoods in the Israeli-Palestinian conflict. To do so, the section first assesses the impact of livelihoods within the conflict. The section then addresses the manner in which different wastewater treatment projects impact those livelihoods, with specific emphasis on the prospect of increasing their impact in the future. Findings from this section indicate that wastewater treatment projects not only increase the economic well-being of their Palestinian beneficiaries, but also contribute to Palestinian resilience through augmenting the capacity of Palestinians to stay on their land. Both of these outcomes are especially significant to building peace given their impact in remedying power

imbalances between Israelis and Palestinians.

- **Section 2.5 Gender and Rural Development:** This section highlights the opportunity to and importance of augmenting the role of women in cooperative wastewater treatment projects. The section focuses on the role of gender in rural development. Specifically, it argues that intentionally including women in the planning, implementation, and maintenance phases of wastewater treatment projects would increase the likelihood of project success and help to create conditions more conducive to building peace, especially given their increasing role in economic and community development.
- **Section 2.6 Public Participation:** This section focuses on the obstacles and opportunities associated with public participation in cooperative wastewater projects. Given that it functions as a tool by which to engage Israelis and Palestinians in dialogue to build trust, relationships, and acceptance of “the other,” public participation serves as a key mechanism for building peace. This section assesses the peacebuilding significance of joint Israeli-Palestinian wastewater projects by first examining and explaining three broad categories of public participation strategies that are presented in literature and utilized by various organizations interviewed during this study: project effectiveness, trust-building, and water justice. The section then discusses how PWEG and AIES, specifically, are utilizing public participation to accomplish peacebuilding goals. Findings from this section suggest that public participation strategies must be clearly and deliberately defined before implementation and in accordance with organizational goals in order to maximize the peacebuilding potential of cooperative wastewater projects.
- **Section 2.7 Symbolism and Cooperation over Wastewater:** This section investigates how Palestinians and Israelis view cooperation over wastewater symbolically, and the obstacles and opportunities these symbolic values present with regard to the peace-

building potential of cooperative wastewater projects. Specifically, it explores what cooperation in wastewater treatment symbolizes to different groups of individuals, as well as how that symbolic meaning manifests itself in their vision of future Israeli-Palestinian relations. Findings from this section indicate that despite current limitations on the peacebuilding potential of cooperative wastewater efforts, opportunities to expand their significance exist. To capitalize on these opportunities, greater acknowledgment of the symbolic meaning of cooperative acts is needed.

Section 3. Looking Ahead: The AIES-PWEG Partnership and Scaling Out:

This section investigates the possibility of scaling out the AIES and PWEG relationship by analyzing potential opportunities that exist to scale out the reach, work, and peacebuilding and environmental impact of joint AIES-PWEG projects. This section argues that by integrating wastewater treatment into larger-scale projects that encompass a wider range of participants and technical components (beyond those associated with wastewater only) AIES and PWEG can overcome many of the obstacles to cooperation and wastewater treatment and take advantage of many of the opportunities presented within the seven categories comprising Section 2 of this report. Analysis in this section focuses specifically on an opportunity presented during the field research component of this study, which involved preliminary discussions to scale out the AIES-PWEG relationship through a project incorporating and addressing the needs of local date farmers in the West Bank. Emphasis in this section is also placed on the importance of conducting gender, conflict, and environmental impact assessments prior to the implementation of any such endeavors.

Section 4. Conclusions and Recommendations: The final section of this report presents conclusions and relevant recommendations for AIES and PWEG based on the findings of each of this report's sections. Currently, the

peacebuilding impact of Israeli-Palestinian cooperation in wastewater management is largely limited to the technical or civil society sector. However, despite the many obstacles that limit the peacebuilding significance of transboundary wastewater projects and obstruct cooperative wastewater initiatives in Israel and Palestine (as noted in the discussion of the seven categories presented in Section 2 of this report) there exist many opportunities that AIES and PWEG can pursue in order to augment their environmental and peacebuilding impact. Projects that involve the scaling out of relationships represent one such opportunity, and should be given serious consideration given their capacity to increase the reach and impact of AIES-PWEG environmental and peacebuilding benefits.

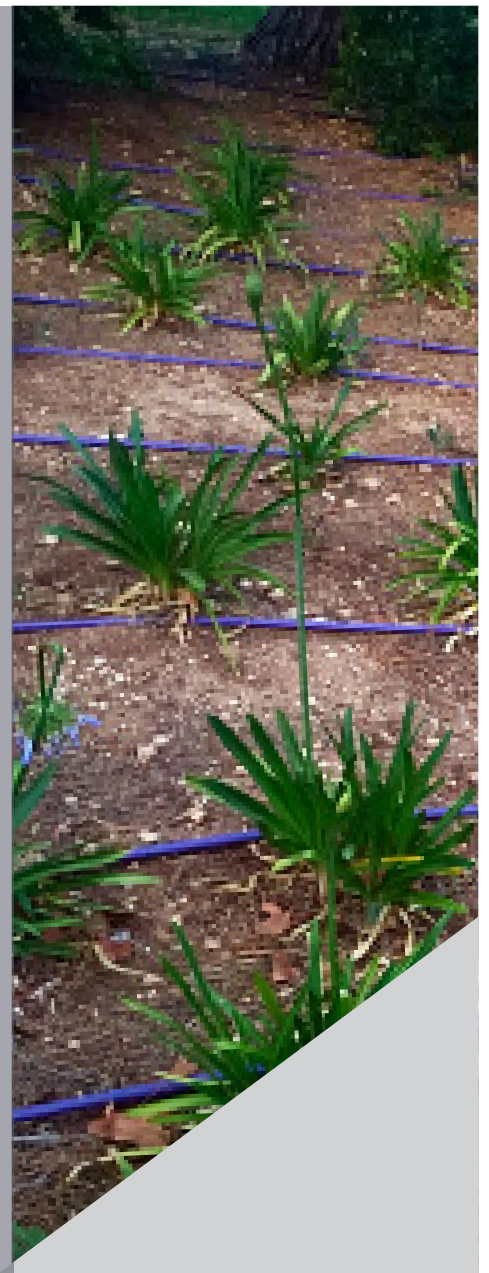
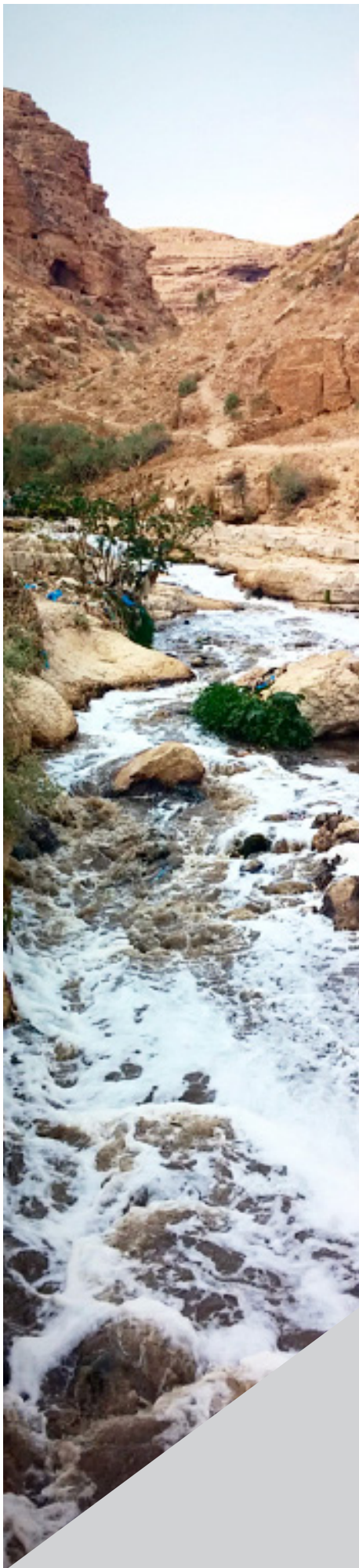
1 Arava Institute for Environmental Studies, "Center for Transboundary Water Management," accessed July 7, 2015, <http://arava.org/arava-research-centers/center-for-transboundary-water-management/>.

2 Palestinian Wastewater Engineers Group, "PWEG Mission Statement," accessed July 7, 2015, <http://www.palweg.org/index.php/en/>.

3 Interviewee 1, Interview by AU Practicum Team, West Bank, May 2015.

4 The project plans to construct a 180 km tunnel traveling from the Red Sea to the Dead Sea. One of the goals of the project is to prevent further environmental degradation of the Dead Sea. For further information, see: Jeremy Josephs, "Green Light for Red-Dead Sea Pipeline Project," accessed August 2015, <http://www.waterworld.com/articles/wwi/print/volume-28/issue-6/technology-case-studies/water-provision/green-light-for-red-dead-sea-pipeline-project.html>.

5 Katarina Alharmoosh et al., "Water, Cooperation, and Peace" (Practicum Report, American University School of International Service, 2014), 4.



SECTION 1

INTRODUCTION

SECTION 1. INTRODUCTION

This report examines the peacebuilding significance of transboundary cooperation on water in Israel and the West Bank. Within this report we assess the collaborative work of two civil society organizations, PWEG and AIES, focusing primarily on their efforts to improve wastewater management in the West Bank. In line with environmental peacebuilding theory, we argue that the transboundary nature of water issues provide incentives for cooperation between Israelis and Palestinians. The seven-year-old relationship between PWEG, a Palestinian organization, and AIES, an Israeli organization, exemplifies this cooperation. Studying this relationship and partnership on initiatives provides us with a deeper understanding of the mechanisms through which cooperative water projects can strengthen or create new pathways toward peace.

This report begins by examining the ways in which the Israeli-Palestinian conflict complicates the implementation of effective wastewater management in the West Bank. We then analyze the collaborative work of PWEG and AIES, highlighting aspects of their work that may contribute to peacebuilding processes. Based on our findings, we provide recommendations for both organizations to augment the peacebuilding potential of their work, with the hope that this assessment can serve as a tool for the planning of future projects by these partners, as well as other NGOs working on transboundary water issues in conflict environments.

1.1 Methodology

Given the complexities associated with Israeli-Palestinian cooperation amidst the ongoing and deeply divisive conflict, analysis of alternative tools and methods for building peace in areas of mutual concern is of the utmost importance. Embarking on such an examination, and focusing on the promise and prospects of environmental peacebuilding, specifically, this report assesses the significance of cooperative, transboundary wastewater treatment projects as tools for building peace in Israel and Palestine.

Theory and Approach

This report is grounded in theory based on hydro-political as well as environmental and non-environmental peacebuilding literature, interdisciplinary study, rapid appraisal research, and field data analysis. The report hypothesizes that, by working to overcome obstacles and capitalize on opportunities in seven specific areas impacted by the Israeli-Palestinian conflict, actors engaged in cooperative transboundary wastewater efforts can contribute to building peace in Israel and Palestine.

Building on this concept, the peacebuilding significance of cooperative wastewater initiatives is assessed throughout this report based on the demonstrated ability of wastewater treatment efforts to navigate the obstacles and take advantage of the opportunities presented within the following seven categories:

1. The political geography imposed by the conflict;
2. The securitization and desecuritization of water in a conflict environment;
3. The politics of sharing information in a conflict environment;
4. The destruction and improvement of livelihoods in a conflict environment;
5. Working with women in a conflict environment;
6. Increasing public participation in a conflict environment; and
7. The symbolism associated with cooperation in a conflict environment.

Analysis of these seven categories and how they relate to peacebuilding is followed by an examination of the degree to which PWEG and AIES have taken advantage of these opportunities. Finally, methods by which to improve current efforts in cooperative wastewater treatment, and to strengthen their peacebuilding significance, are presented.

A variety of approaches to data analysis are utilized in each category analyzed, including: spatial approaches to conflict assessment, se-

curitization and desecuritization theory, information sharing as a peacebuilding mechanism, livelihoods assessment, gender analysis, public participation analysis, and analysis based on the mapping of symbolic meaning.

Based on findings drawn from each of the seven categories assessed, opportunities for increasing the peacebuilding significance of cooperative wastewater treatment projects are examined and recommendations are provided through analysis of the concept of “scaling out,” or expanding the reach and broadening the scope of cooperative wastewater treatment projects. Overall recommendations and conclusions are also compiled in the report’s final section.

Site and Stream Stories

In an effort to further contextualize the seven categories of peacebuilding obstacles and opportunities in wastewater cooperation presented in this report, interspersed throughout the report is a compilation of Site and Stream Stories, or small case studies related to wastewater treatment and water issues within the West Bank.

Rooted in a methodological approach similar to that utilized in the work of Deborah Barndt,¹ each story traces the history and the development of a wastewater flow, issue, or treatment site in the West Bank. In doing so, the stories highlight a variety of this report’s seven analytical categories, further illustrating the complexities, challenges, and opportunities underlying each of this report’s major themes with regard to peacebuilding. In addition, each story highlights the social, environmental, and political consequences of disputes over water and of conflict in Israel and Palestine.

Research Methods

Research for this report was completed in two distinct phases. The first phase took place in Washington, DC, and consisted of an intense period of desk research on the topic of wastewater

management and the Israeli-Palestinian conflict. This phase was also complemented by rigorous methodological and theoretical composition. The second phase involved a rapid-appraisal approach to field research, which was conducted over the course of twelve days in several cities and villages within Israel and the West Bank. Data was collected through participant observation, site visits to six wastewater treatment plants, and a series of semi-structured interviews with Israeli and Palestinian government officials, municipalities, and civil-society organizations. Further interviews were conducted with technical experts involved in wastewater management in the West Bank, as well as with farmers, homeowners, and other stakeholders and beneficiaries residing in the West Bank.

1.2 Wastewater Management in the West Bank

Palestinians in the West Bank currently face a fresh water shortage, which has become more acute as the population increases.² The situation of water scarcity in the West Bank stands in sharp contrast to Israel’s recent expansion of desalinization and wastewater reuse technologies, which have radically changed the country’s approach to water management.^{3 4} Furthermore, shared water resources, including the water of the Mountain Aquifer and the Jordan River, are not allocated equitably among Israelis and Palestinians. On average, Palestinian water consumption is 72 liters per day per capita, while average Israeli water consumption is 182 liters per day per capita.⁵

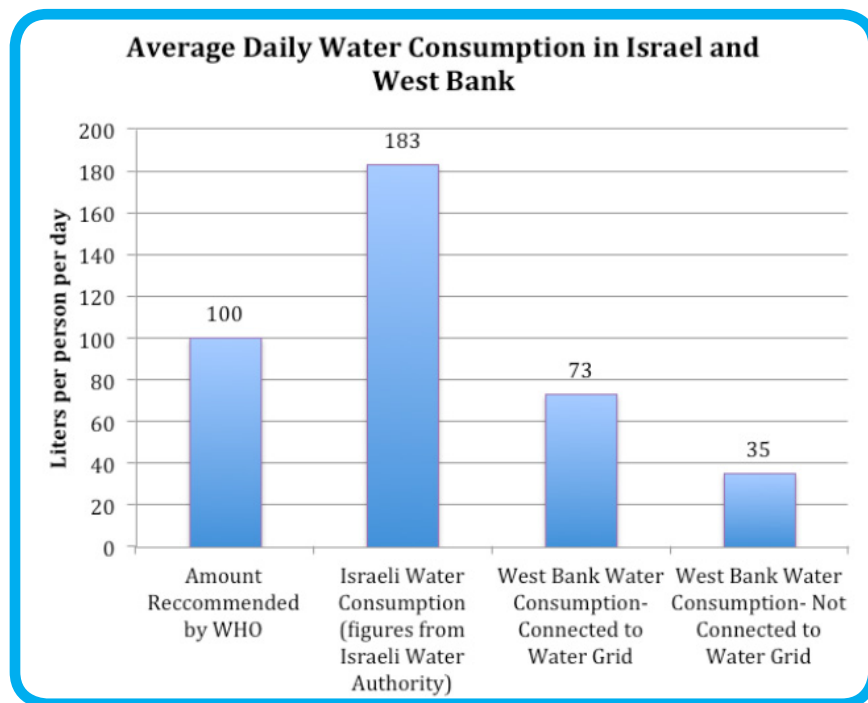
Improved wastewater treatment in the West Bank provides environmental, economic, and public health benefits to both Israelis and Palestinians. It reduces the amount of sewage that is dumped into the environment, which can lead to pollution of the aquifers, and the treated effluent from wastewater treatment plants can be used to irrigate crops, reducing pressure on the region’s scarce freshwater resources.

Israel has become a global leader in wastewater treatment and reuse, treating about 86% of its domestic wastewater, and sourcing about 55% of its total water used from recycled water for agriculture.⁷ However, the Palestinian wastewater treatment sector remains critically underdeveloped.⁸ In the West Bank, only 38.4% of the population is connected to a centralized wastewater system.⁹ The remaining population relies on cesspits and septic tanks to dispose of wastewater. A cesspit is a hole dug into the ground that collects and stores wastewater. Many cesspits are constructed without sufficient lining, which results in wastewater leaking into the aquifer

infrastructure in this region. While the focus of this report is on PWEG and AIES, there are also a number of other organizations working on water management in the West Bank, including the House of Water and Environment (HWE), Eco-Peace, and Engineers without Borders. Studying the work of these organizations has allowed us to see the range of approaches taken by civil society groups to respond to water-related challenges in the West Bank, many of which involve cooperation between Israelis and Palestinians.

1.3 Water Sources in Israel and the West Bank

Figure 1.2a: Water Consumption in Israel and the West Bank



Source: B'Tselem, 2011⁶

and polluting the groundwater.¹⁰ Furthermore, the wastewater that is pumped from cesspits and septic systems is often dumped untreated into the nearby wadis (a term in Arabic referring to the bed of a valley, channel, or ravine that is dry except in the rainy season).¹¹

Recognizing both the immediate need for wastewater treatment solutions in the West Bank and the political barriers that inhibit government action, a number of Israeli and Palestinian NGOs have begun to work both unilaterally and cooperatively to construct wastewater treatment

In order to fully grasp the significance of the work of PWEG and AIES, we must understand it within the context of the region's unique ecology, politics, and history. The Mountain Aquifer and the Jordan River, the main sources of water in Israel and the West Bank, are embedded in a deeply divided social and political landscape. The intractable conflict, which is a central aspect of Israeli and Palestinian society,¹² has created serious challenges for efficient and sustainable management of the Jordan River Basin and the Mountain Aquifer. The problems surrounding management of the Coastal Aquifer, which supplies Gaza with most of its water, are also severe; however, they will not be discussed in this report since they are beyond the scope of our research.

The Jordan River

The Upper Jordan River originates at Mount Hermon on the Syrian-Lebanese border and flows into Israel, emptying into the Sea of Galilee, and the Lower Jordan River flows from the Sea of Galilee/Lake Tiberias to the Dead Sea. It runs along the border between Israel and Jordan and then along the border between the Israeli-occupied West Bank and Jordan. The Yarmouk River is the largest tributary and one of the main

sources of the flow of the Jordan River. The Yarmouk River runs, for most of its course, along the border of Jordan and Syria, and forms the border between Jordan and Northern Israel, the Golan Heights region, before meeting the Lower Jordan River. The flow of the Jordan River, however, is subject to extreme seasonal variations.¹³ In the mid-1960s the Jordan River's flows were approximately 1.5 billion cubic meters per year.¹⁴ At this time, the Lower Jordan River received about 600 million cubic meters per year from the Sea of Galilee/Lake Tiberias and about 470 million cubic meters from the Yarmouk River. Today, the Lower Jordan River's drainage into the Dead Sea amounts to only 70-100 million cubic meters per year.¹⁵

Since the 1950s, Israel, Syria, and Jordan have diverted the water from the Jordan River and Yarmouk River for agricultural use. Diverting water through Syrian and Jordanian dams and canals, as well as through Israel's National Water Carrier, has significantly reduced the flow of the Jordan River, which has had major consequences for the ecology of the Jordan Valley and the Dead Sea.¹⁶ The reduced flow of the Jordan River is likely to be further exacerbated due to climate change, which is projected to cause surface water to evaporate at higher rates as the temperature increases.¹⁷

The Mountain Aquifer

The vast majority of transboundary water flowing between Israel and Palestine is in the form of groundwater, with the Mountain Aquifer divided into three recharge and drainage basins: The Western Basin/Yarkon-Taninim Aquifer, Northeastern Basin, and the Eastern Basin. All three sections of the Mountain Aquifer originate in the West Bank, and the Northeastern Basin and the Western Basin create springs in Israel. The water from the

Western Basin accounts for 90% of the spring's discharge of the entire aquifer.¹⁸ With 85% of the recharge zones located in the West Bank, activities in the West Bank, including water extraction and pollution, affect the quantity and quality of groundwater that flows into Israel.^{19 20} As of 2004, there were approximately 300 wells within Israel that provided access to water from the Mountain Aquifer.²¹ Water also flows from Israel into the West Bank, meaning that Israeli pollution of streams has also had negative effects

Figure 1.3a: The Mountain Aquifer and the Coastal Aquifer.



Source: Fanack after UNEP, 2002.

for Palestinians in the West Bank. Since Israelis and Palestinians share the same main sources of natural water, cooperation is necessary in order to ensure that the water needs of both populations are met.

Within the literature on water and conflict, scholars have used several frameworks to link water to the Israeli-Palestinian conflict. While some have argued that water can serve as a catalyst for violence, others have claimed that water issues tend to generate cooperation in more cases than conflict. Whether or not water has been a cause of conflict or cooperation, it is undeniable that along with struggles over territory, borders, the rights of refugees, and the status of Jerusalem, control over water in the Jordan River Basin has played an important role in shaping the region's politics.

1.4 Origins of Israeli-Palestinian Water Disputes

Following the fall of the Ottoman Empire at the end of World War I, colonial powers defined the borders of Palestine and Transjordan, which came under the British Mandate, as well as Lebanon and Syria, which came under the French Mandate.²² The 1917 Balfour Declaration, which expressed the United Kingdom's support for establishing the national home for Jews in Palestine, laid the foundation for the creation of the State of Israel in 1948 after the British withdrew from Palestine. According to a plan developed by the United Nations General Assembly, and based off of an earlier British plan, the territory of Palestine was partitioned into several sections—with the West Bank and Gaza allocated for the Palestinians and Israel for the Jewish population. The city of Jerusalem was to remain under international jurisdiction.²³

Following the establishment of Israel, violence erupted between Israel and neighboring Arab states. In an effort to escape the violence, hundreds of thousands of Palestinians fled to the West Bank, which later became part of Jordan,

and to Gaza, which fell under Egyptian military control. By 1949, Israel, Egypt, Jordan, Syria, and Lebanon agreed upon territorial boundaries known as the “Green Line” in Armistice agreements with the help of the United Nations (UN). The regions of Palestine that did not fall under Israeli control according to the Armistice agreements included Gaza, the West Bank, and the Golan Heights.²⁴

Relations between Israel and its neighbors remained tense between 1949 and 1967, as populations rapidly increased.²⁵ Each state was assigned an allocation of surface water in the Jordan Basin according to the provisions of the Johnston Plan (55% to Jordan, 36% to Israel, and 9% to the Syrian Arab Republic and Lebanon), which was negotiated by an American diplomat between 1952 and 1955.²⁶ However, the Johnston Plan was never ratified, and was not adhered to by all riparian states.^{27 28}

During the 1950's and 1960's, serious disputes over water extraction in the upper Jordan River arose as Syria, Jordan, and Israel made new efforts to divert water from the Jordan River and its tributaries. Included in these efforts was Israel's National Water Carrier, completed in 1964, which diverts the flow of the Jordan River to provide water to southern Israel.²⁹ Some scholars argue that competition between riparian states for the Jordan River's water resources was a “main cause leading up to [the 1967] war” between Israel and Egypt, Syria, and Jordan.³⁰ However, Jerome Priscoli and Aaron Wolf refute this claim, concluding instead that, although there were water related tensions between Israel and Syria, this dispute ended in 1966 when Syria abandoned its controversial plans to construct a dam to divert the headwaters of the Jordan River, almost a full year before violence broke out.³¹ While there exists a large body of literature concerning the ongoing politics surrounding shared water resources between Israel, Jordan, Syria, and Lebanon, for the purpose of this research, we are primarily concerned with issues related to water and conflict in the West Bank.

As a consequence of the 1967 war, Gaza, the Golan Heights, Sinai, and the West Bank came under Israeli military occupation. By occupying the West Bank, Israel secured control over a greater share of the Jordan River and the Mountain Aquifer, and set provisions on the amount of water that could be extracted by Palestinians.³² The Israeli government also required that Palestinians obtain permits for the construction of any pumps or wells used to extract water from the Mountain Aquifer, and enforced controls on the importation of water-related equipment.³³ Since the 1967 war, Palestinians have not had access to the Jordan River from which Palestinians extracted an estimated 30 million cubic meters of water per year prior to the restrictions established in 1967.³⁴ Mark Zeitoun refers to the period between 1967 to 1995 as “the Israeli Domination Era” because of the hydropolitical power Israel acquired in relation to the neighboring Arab states.³⁵ According to Zeitoun, it was during this period that Israel placed the most restrictive limitations on Palestinian access to water, which, to the Palestinians, solidified water scarcity as a powerful symbol of the injustice brought on by Israeli occupation.³⁶

Since Israel’s occupation of new areas of land in 1967, Israel began to establish settlements in these territories, despite the UN’s assertion that this construction violates international law, as detailed in Article 49 of the Fourth Geneva Convention.³⁷ Israel withdrew from Sinai after signing a peace agreement with Egypt in 1979, annexed the Golan Heights in 1981, and completely withdrew from Gaza in 2005. However, Israel continues to construct illegal settlements in the West Bank including East Jerusalem. Between 1967 and 2013, Israel authorized and erected approximately 150 settlements, and Israeli settlers constructed 100 outposts, or “settlements constructed without official authorization,” in the West Bank.³⁸ Many of the Palestinians living in certain parts of the West Bank are vulnerable to forced displacement to accommodate the expansion of Israeli settlements.³⁹ These settlements have created additional pressures on the West Bank’s water resources and, as illustrated by the Site and Stream Stories in this report, have complicated processes of water management.

1.5 Oslo II and Water

The Oslo Accords marked a critical moment in Israeli-Palestinian relations, as Israel and the Palestinian Liberation Organization formally recognized each other, and charted out a path for future peace talks. The accords, which began in 1993, granted the Palestinians a limited degree of autonomy under the governance of the newly created Palestinian Authority (PA), and established a set of interim arrangements to be put in place as the two sides negotiated a final agreement, which was to be agreed upon five years later in 1999. The final peace agreement was meant to address some of the most difficult issues, including:

Oslo Accords Final Status Issues

- 
1. Final Borders
 2. Jerusalem
 3. Israeli Settlements in the West Bank and Gaza
 4. Palestinians’ Right to Return
 5. Water

However, leaders have been unable to reach a long-term agreement, and many of the temporary arrangements established in 1993 are still in place today.⁴⁰

The Interim Agreement on the West Bank and Gaza, also known as Oslo II, was signed in 1995 as the second part of the Oslo Accords. Water was one of the many issues covered under Oslo II, with Article 40 of the Accords establishing temporary regulations regarding the allocation of water from the Mountain Aquifer to Israel and the Palestinian Territories. It also defined a procedure for the approval and joint management of water infrastructure development in the West Bank. According to this agreement, all forms of water, including wastewater in Israel and the West Bank, would continue to be under

full or partial Israeli control.⁴¹ However, Oslo II recognized the Palestinians' water rights, granting them access to approximately 20% of the water extracted from the Mountain Aquifer and allocating approximately 80% to Israel.⁴² Article 40 also set the West Bank Palestinians' future water needs at 70-80 million cubic meters per year, and determined that Israel would supply the West Bank with an extra 28.6 million cubic meters of water per year during the interim period.^{43 44} Permanent regulations regarding Palestinian water rights were to be determined five years later in the Final Status Negotiations.⁴⁵ Although specific needs for water in the Palestinian Territories have changed over the years, the allocations stated in the Oslo Interim Agreements have not.

The Oslo II Agreement also formed the Joint Water Committee (JWC), which was intended to serve as a platform through which representatives from the Israeli Water Authority (IWA) and the Palestinian Water Authority (PWA) could coordinate on decisions regarding the management of water resources and sanitation infrastructure in the West Bank and Gaza. The regular meetings of the JWC, which persisted even during periods of intense violence, reflected the need for bilateral discussions and decision-making regarding the management of shared water resources.⁴⁶ However, the JWC has been criticized for perpetuating asymmetrical power relations between the Israeli and Palestinian actors. Critics maintain that the jurisdiction of the JWC is unfair because, although both sides possess veto power over water infrastructure projects in the West Bank, the Palestinians have a much greater need for new infrastructure. As such, the JWC places greater constraints on the Palestinians.⁴⁷ The PWA claims that the Israeli members of the JWC repeatedly reject or create long delays for Palestinian requests for water projects.⁴⁸ While the JWC no longer holds formal meetings, it does continue to meet informally.⁴⁹

Oslo II also affected the development of water infrastructure in the West Bank by dividing the region into three distinct types of administrative territories. According to the Oslo II Agreements, Area A, which primarily consists of urban centers,

is under administrative control of the Palestinian Authority (PA). As such, any new water infrastructure constructed in Area A must be approved by the JWC. In contrast, while the PA controls civil affairs in Area B, security is controlled by the Israeli Military. The vast majority of the population in the West Bank is concentrated in Areas A and B, which constitutes approximately 40% of the West Bank.⁵⁰ The remaining 60% of the West Bank is designated as Area C, which is under complete Israeli civil and military control.⁵¹ Any planning or construction in these regions must be approved by both the Israeli Civil Administration (ICA) and the JWC. Even after a project has been approved by the JWC, obtaining permits from the Israeli Civil Administration for construction in Area C can often be an arduous process. According to a report by B'Tselem, the Civil Administration frequently authorizes the demolition of construction that occurs without permits in Area C.⁵²

The significant obstacles to constructing water extraction and treatment infrastructure in Area C are especially problematic since, from a public health perspective, Area C is often the most rational place to construct wastewater treatment plants, as it is removed from densely populated urban centers. Moreover, the need for water supply infrastructure in Area C are great. Of the approximately 150,000 Palestinian inhabitants residing in Area C, approximately 70% are not connected to any water supply network, and instead must rely on expensive water that is delivered and stored in tanks.⁵³

Despite the initial optimism surrounding Oslo II, the agreement has been criticized for reinforcing the status quo of Israeli control over shared water resources and maintaining a highly unequal allocation of fresh water between Palestinians and Israelis.⁵⁴ The Site and Stream Stories throughout this report illustrate more clearly how some of the arrangements put into place by Oslo II have created challenges for rational water management. In particular, the Site and Stream Stories of West Nablus (see *Site and Stream Story 6: West Nablus Wastewater Treatment Plant*) and Wadi Beitunia/Nahal Modi'in (see *Site and Stream Story 3: Wadi Beitunia/Nahal Modi'in*) bring to light some of the

environmentally unsustainable, socially unjust, and economically inefficient outcomes of such a system.

The contention surrounding Article 40 of Oslo II, and the political deadlock that has prevented Israelis and Palestinians from coming to a long-term agreement on water, demonstrates that water in the West Bank is an issue that is inseparable from the broader Israeli-Palestinian conflict. Attempts to address water issues at the political level are ultimately tied up in highly divisive discussions on issues such as the legitimacy of borders or Israeli settlements in the West Bank. However, we have found that water provides a number of opportunities for transboundary cooperation, especially amongst nongovernmental actors. Many NGOs, including AIES and PWEF, have formed partnerships in order to take advantage of benefits associated with transboundary cooperation on water issues. International aid agencies have also recognized the potential peacebuilding opportunities created through this cooperation, including funds for water infrastructure projects that involve both Israelis and Palestinians. The position of water as both a site for cooperation, as well as inextricably linked to some of the most deeply divisive aspects of the conflict, creates an interesting opportunity for studying the ways in which cooperation over water may influence the conflict more broadly.

1.6 Does Water Bring Conflict or Cooperation?

Many scholars have sought to understand the link between water and conflict. In 1993, Peter Gleick wrote, “where water is scarce, competition for limited supplies can lead nations to see access to water as a matter of national security. History is replete with examples of competition and disputes over shared fresh water resources.”⁵⁵ Many scholars sought to take this observation further, aiming to determine a causal relationship between shared water resources and war.⁵⁶ Authors cited the necessity of water for life, the many competing users of water, the transboundary nature of water issues, and the relative un-

derdevelopment of international water law as possible reasons for why we might see conflict over water.⁵⁷ Much of this research was focused on Israel and its disputes with Syria and Jordan over the Jordan River since, according to Priscoli and Wolf, thirty of the thirty-seven acute disputes over water since the early 1950’s were between Israeli and one or more of its neighbors. The idea that water issues are likely to be a major cause of conflict has gained traction amongst academics, professionals in the water sector, aid agencies, and intergovernmental organizations such as the UN and the World Bank.^{58 59}

However, by the late 1990’s literature that aimed to find a causal explanation for the “water wars” hypothesis gave way to a new body of literature that focuses on water as a source of cooperation. Known as environmental peacebuilding, this theory contends that certain characteristics of environmental issues, including their transboundary nature and the fact they require long-term solutions, can provide the incentives for cooperation between groups.⁶⁰ Of the 276 river basins in the world, 256 (92.7%) of these basins are shared by two or more countries.⁶¹ Given that the actions of one riparian state will affect the water resources of another state, the management of water requires cooperation amongst stakeholders in order to prevent conflict over water resources and maintain the health of hydrological systems.⁶² In his study, Wolf aimed to quantify the number of conflicts over water, and found that while violence over water was present at the local level, there were very few cases of international war over water.⁶³ He concluded that, “despite the potential for dispute in international basins, the record of acute conflict over international water resources is historically overwhelmed by the record of cooperation.”⁶⁴

Peacebuilding literature, amongst other things, has sought to identify the incentives for transboundary cooperation on water, and to understand the ways in which cooperation over water in a conflict environment can affect other dimensions of the conflict.

1.7 Pathways to Environmental Peacebuilding

Daniel Bar-Tal has written extensively on the Israeli-Palestinian conflict as an example of an intractable conflict. He explains that intractable conflicts have both socio-psychological and tangible features. These conflicts are violent, persist for a long period of time (at least a generation), and are perceived by those involved as a “zero-sum game,” meaning that any gain for one side is seen as a loss for the other. Intractable conflicts are thus perceived as irresolvable, compelling society members to plan their lives with the expectation that the conflict will continue for the foreseeable future. Bar-Tal also argues that intractable conflicts “are perceived as being about essential and basic goals, needs, and/or values that are regarded as indispensable for the society’s existence and/or survival.”⁶⁵ Water is one of these basic needs. Flowing through the highly contested borders that demarcate Israeli and Palestinian territory, water is a shared resource in limited supply that has been the subject of both conflict and cooperation.

Bar-Tal’s understanding of intractable conflict suggests that there is a wide range of factors that contribute to prolonging and deepening the conflict. Conflict resolution, therefore, depends on creating changes that affect both people’s perceptions of themselves in relation to “the enemy,” as well as changing the actual conditions on the ground. Ken Conca and Jennifer Wallace have identified a number of different peacebuilding opportunities through environmental cooperation: “providing an agenda of shared interests, promoting confidence-building, deepening intergroup ties, and fostering the complex task of (re) constructing shared identities.”⁶⁶

Although many scholars agree that cooperation on environmental issues can have a positive influence for peacebuilding, there is significant divergence in how the peacebuilding significance of environmental cooperation is understood. One explanation for this incongruence is that multiple definitions of peace exist, and, therefore, multi-

ple explanations of peacebuilding. As Conca and Geoffrey Dabelko explain, “peace can be thought of on a continuum ranging from the absence of violent conflict to the inconceivability of violent conflict.”⁶⁷

If we understand peace as the “absence of conflict,” then environmental cooperation can lead to peacebuilding since it helps to prevent the eruption of violence and escalation of violent conflicts over natural resources.^{68 69} By augmenting the capacity for the effective management of natural resources, regional cooperation can restore or protect the natural environment and reduce insecurity brought on by real or perceived natural resource scarcity. The direct benefits of cooperative environmental management, including public health improvements, greater efficiency in resource use, and environmental protection, can help to alleviate some of the catastrophic destruction that protracted conflicts may have on people’s livelihoods and on the natural environment.⁷⁰

Environmental cooperation also has the potential to create pathways to sustained peace in an intractable conflict. Scholars have identified many different ways in which cooperation over water issues can lead to cooperation on other issues. By producing shared benefits for Israeli and Palestinians through environmental improvement, cooperation on water issues can shift perceptions of the zero-sum nature of the conflict.⁷¹ Furthermore, projects that bring Israeli and Palestinian individuals to discuss shared goals and work together have the potential to create relationships between Israeli and Palestinian individuals, who might otherwise lack opportunities to interact with one another.⁷²

Scholars have also emphasized the idea that environmental issues create a platform for dialogue in conflict environments, like Israel and the West Bank, where dialogue has largely broken down. According to the transboundary water organization, EcoPeace, “Environmental issues and mutual ecological dependence facilitate and encourage cooperation, cooperation that often is a first step toward the initiation of an ongoing dialogue,

which would be difficult to mediate through political channels.”⁷³ Through strategies, such as those aimed at producing shared benefits, building trust between Israelis and Palestinians, reducing inequities, and creating platforms for meaningful dialogue, Israeli and Palestinian organizations have the potential to contribute positively to peacebuilding in the region by working together to solve transboundary water issues.

Critics of this perspective, however, point out that “cooperation” should not be considered the opposite of conflict, and does not always lead to positive results. Jan Selby argues that cooperation within a context in which there is a “hydro-hegemon,” or a vastly inequitable distribution of power over water underpinning such cooperation, could have negative consequences, even serving to obscure, reinforce, or perpetuate conflict.⁷⁴ Rather than seeing cooperation as an end in itself, Selby emphasizes the need to focus on the outcomes of cooperative processes in order to determine if such processes reinforce asymmetric power relations or work to transform the political foundations of the conflict.⁷⁵ For this reason, it is important that we situate the work of PWEG and AIES within the context of the Israeli-Palestinian conflict.

Taking into account such criticisms of environmental peace building theory, we attempt in our analysis to describe the many different outcomes of PWEG and AIES’s partnership, and link each outcome to a broader process of peacebuilding. Our research aims to further understand the opportunities and limitations of environmental peacebuilding as manifested in the wastewater projects led by AIES and PWEG. These projects are described in the following section.

1.8 PWEG and AIES Wastewater Initiatives

Given the barriers to addressing water issues at the political level, civil society organizations like PWEG and AIES are particularly important actors who may find it easier to take advantage of the aforementioned environmental peacebuilding

pathways than actors at the government level. AIES and PWEG have employed a variety of different wastewater technologies in their effort to reduce pollution from wastewater and to provide new freshwater sources through gray water reuse. Gray water refers to wastewater that has not come into contact with fecal matter. This includes water used for washing dishes, clothes, or bathing. Wastewater that comes from toilets is known as black water, and requires more advanced treatment procedures than are required for treating gray water.⁷⁶ The appropriate type and scale of each project depends on the unique context in which it is to be implemented. The technical aspects of these projects are described in greater depth below.

Septic System Installation and Improvement

One of PWEG’s wastewater management strategies is the replacement of cesspits with sealed concrete septic tanks. A septic tank is a container, typically constructed underground, which utilizes bacteria to break down and dissolves solid waste.⁷⁷ Unlike cesspits, septic tanks are usually built with a concrete lining, which greatly minimizes the risk of wastewater seeping into the aquifer and polluting the groundwater.

Often, the vacuum tankers that extract wastewater from cesspits and septic tanks dump this waste untreated into the environment. The partially treated sewage from septic tanks is lower in volume and less detrimental to the aquifer than the raw sewage pumped from cesspits, since the bacteria present in septic systems destroy many pathogens and reduce the volume of organic solids present in wastewater.⁷⁸

Despite the potential benefits of septic tanks, cesspits are commonly used to dispose of wastewater in areas of the West Bank that are not connected to a centralized wastewater system since they have lower initial construction costs than septic tanks. However, when taking into account



Vacuum Tanker in the West Bank Dumping Wastewater into a Wadi

Photo Credit: Stephanie Hickel

the costs of pumping and emptying each system, cesspits prove to be significantly more expensive than septic tanks.⁷⁹ Cesspits must be pumped and emptied multiple times a year at an estimated cost of \$26.50 per pumping, while septic tanks that utilize 100% sealed concrete systems need only to be emptied about once every thirty-six months.^{80 81} While improved septic systems can provide some environmental and economic benefits at a low cost, they do not treat wastewater for reuse.⁸² PWEG and AIES are both working on implementing wastewater treatment and gray water reuse systems in the West Bank that provide additional freshwater resources for irrigation.

Wastewater and Gray Water Reuse Systems

The 2014 American University “Water, Cooperation, and Peace: The Peacebuilding Impact of Joint Israeli-Palestinian Wastewater Projects” report provides an in-depth description and analysis of the four scales of wastewater treatment plants implemented in the West Bank.⁸³ These four scales include:

- 1) large-scale centralized wastewater treatment plants,

- 2) small-scale centralized wastewater treatment plants,
- 3) community-scale decentralized systems, and
- 4) individual household-level decentralized systems.

Large-Scale Centralized Wastewater Treatment Plants have the capacity to treat thousands of cubic meters of wastewater on a daily basis through one centralized system. Two examples of large-scale centralized wastewater treatment plants (WWTPs) are located in West Nablus and Ramallah. In terms of their treatment capacity, the West Nablus WWTP treats 12,000 cubic meters of water per day and the Ramallah WWTP treats 2,200 cubic meters of water per day (see *Site and Stream Story 6: West Nablus Wastewater Treatment Plant* and *Site and Stream Story 3: Wadi Beitunia/Nahal Modi’in* for more information about the wastewater treatment issues, benefits, and obstacles associated with each).⁸⁴

Small-Scale Centralized Wastewater Treatment Plants have the ability to treat the wastewater of a small town or village. These systems, like the one that currently serves both towns of Ramoun and Al Taybeh, have the capacity to treat hundreds of cubic meters of wastewater (see *Site and Stream Story 2: Al Taybeh-Ramoun Wastewater Treatment Plant*). In comparison to large-scale WWTPs, small-scale centralized WWTPs generally require fewer permits and can thus be planned and implemented within a shorter timeframe.

Community-Scale Decentralized Systems provide an affordable alternative to centralized wastewater management.⁸⁵ Decentralized wastewater treatment systems also often avoid the political obstacles that can otherwise delay the construction of centralized WWTPs, and are engineered to treat the wastewater of multiple households in rural areas. Although no community-scale decentralized systems were visited during our time in the field, PWEG and AIES have

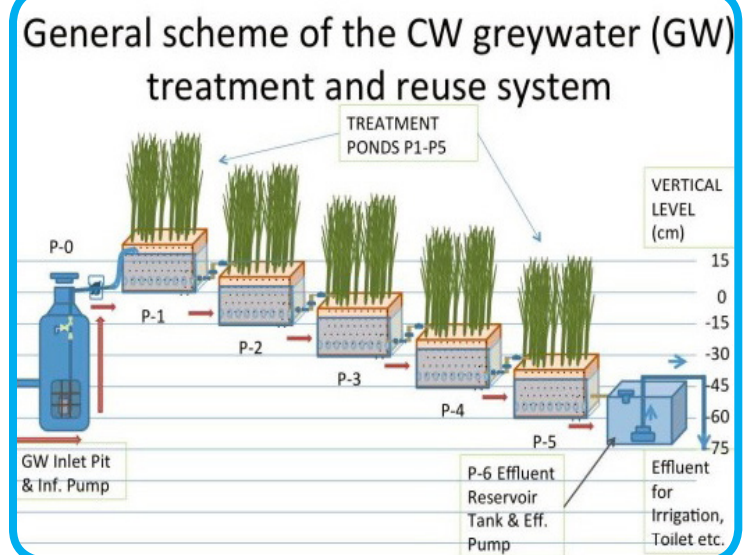
already implemented multiple community-scale decentralized systems. The Team did, however, visit a private community club located within Area A, where AIES, in partnership with HWE, another Palestinian organization, could potentially implement a community-scale decentralized wastewater management system and gray water reuse component. PWEG and AIES have also discussed the potential of a future bilateral project that involves scaling-up household systems to community-scale systems.

Individual Household-Level Decentralized Systems also utilize decentralized technologies to treat the wastewater of individual households. AIES and PWEG have already jointly piloted such a system for a resident of Al 'Auja, a community in the West Bank. This system, specifically, has the capacity to treat one cubic meter of wastewater per day.⁸⁶

AIES and PWEG have each developed unique decentralized wastewater treatment systems that deliver environmental, economic, and public health benefits to the communities they serve. For both systems, black and gray wastewater piping in buildings must be separate, with black wastewater diverted through piping connected to a septic tank or cesspit, and gray water funneled by pipes into a gray water treatment and reuse system.⁸⁷ Gray water collected from the kitchen, laundry, and bath is treated, and later reused, primarily for irrigation purposes.⁸⁸ These decentralized systems can be implemented at the household scale or the community scale.⁸⁹

AIES, in partnership with HWE, utilizes a “low tech and low maintenance” gray water treatment and reuse system, in which gravel acts as a filtration device in a series of treatment ponds (see Figure 1.8a). These treatment ponds are conducive to bacteria growth, which enables the aerobic (using oxygen) and anaerobic (without oxygen) processes to break down the water’s organic and chemical components, gradually improving the water quality as it passes through each treatment pond.⁹⁰

Figure 1.8a: AIES-HWE Wastewater System



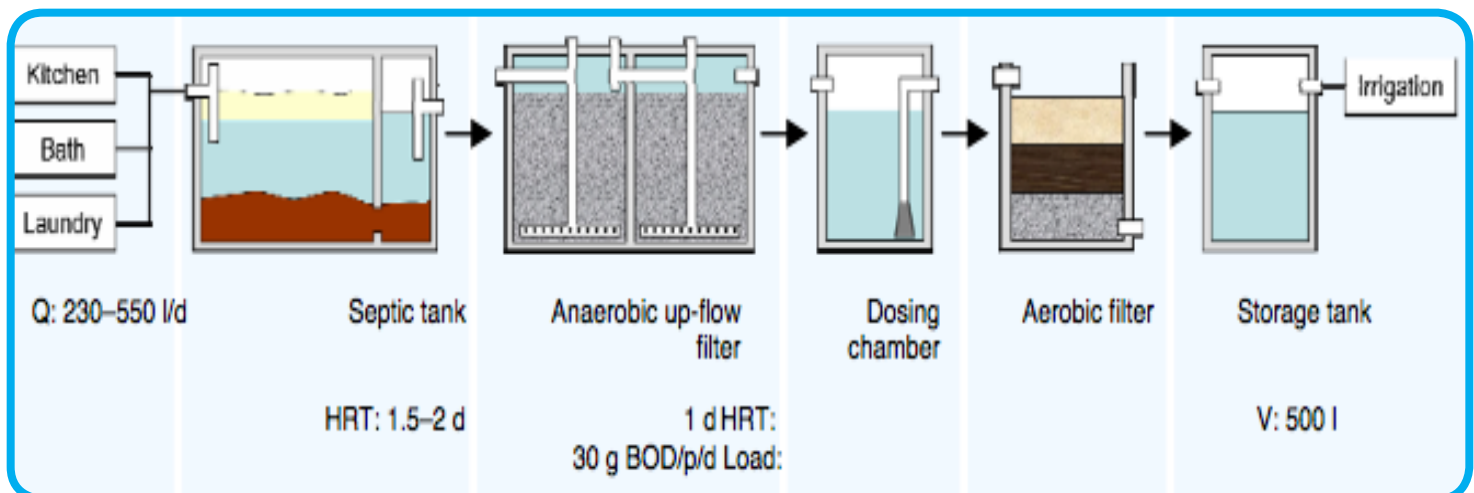
Source: Arava Institute for Environmental Studies. *Decentralized Greywater Treatment and Reuse for Rural Communities*⁹¹

The PWEG wastewater system has many similarities to the AIES system. The PWEG and AIES systems both require relatively little maintenance. While both systems treat wastewater through anaerobic and aerobic processes, PWEG’s system is unique in that it utilizes a balancing chamber and separate filters for anaerobic and aerobic processes (see Figure 1.8b above).⁹²

Ultimately, the type and scale of a wastewater management project is determined by numerous factors including technical feasibility, opinions of stakeholders, political obstacles, and financial constraints. Each type of wastewater management infrastructure has a different set of advantages and disadvantages, which depend highly on the context in which they are implemented. The variations in contexts and applied wastewater management strategies are exemplified in the Site and Stream Stories presented throughout this report. Understanding the opportunities and risks associated with various wastewater management systems within its local context is imperative when assessing the environmental peacebuilding potential of collaborative wastewater management efforts.⁹³

We argue that the work of PWEG and AIES on wastewater management, both individually and collaboratively, has the potential to contribute to peacebuilding efforts in the region through a variety of different mechanisms. We will examine these peacebuilding opportunities in greater depth through seven themes, described in the Methodology section above, which we have used to frame our analysis of the work of AIES and PWEG.

Figure 1.8b: PWEG Wastewater System



Source: Monther Hind and Rehab Daher, *Protection of Groundwater Resources by Greywater Management and Reuse: When Conventional Wastewater Management is not Affordable* (Ramallah: PWEG, 2006), 8.

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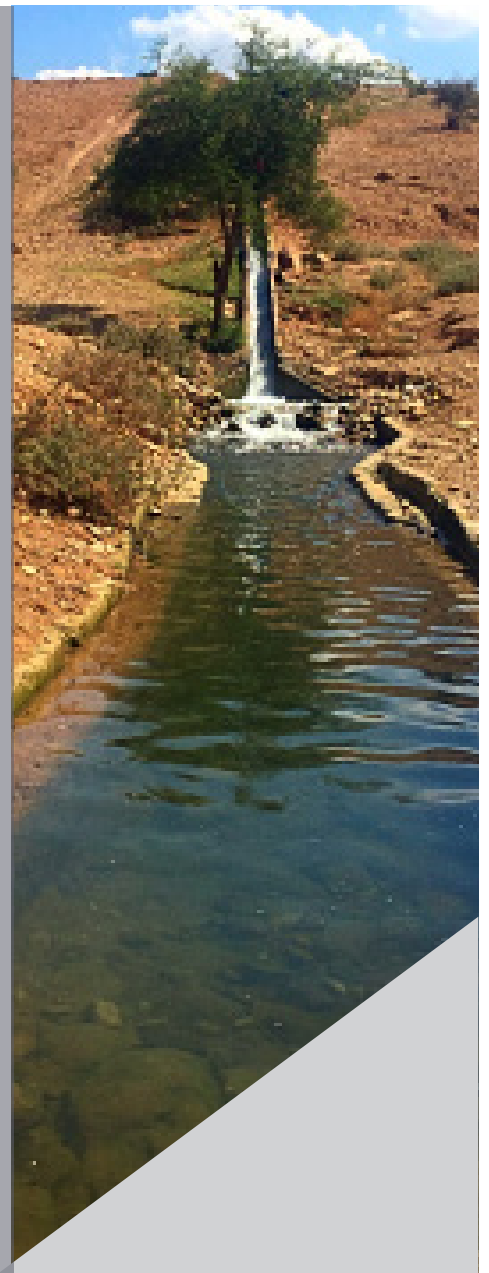
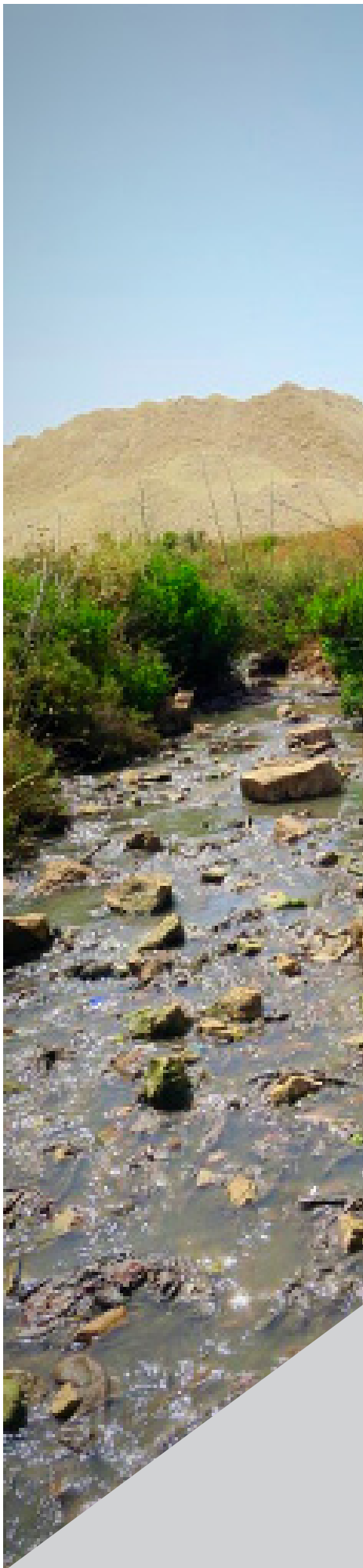
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SECTION 2

EXAMINATION OF SEVEN PEACEBUILDING OBSTACLES AND OPPORTUNITIES IN COOPERATIVE WASTEWATER MANAGEMENT

Photo Credit (left to right): Andrew Conca-Cheng • Julia Chalpin • Lynn Brinkley •

SECTION 2. EXAMINATION OF SEVEN PEACEBUILDING OBSTACLES AND OPPORTUNITIES IN COOPERATIVE WASTEWATER MANAGEMENT

This section of the report investigates the peacebuilding significance of joint Israeli-Palestinian wastewater projects through examination of seven current peacebuilding obstacles and opportunities in cooperative wastewater management. The degree to which actors engaged in cooperative transboundary wastewater efforts have capitalized on or overcome these opportunities and obstacles in a manner augmenting the peacebuilding significance of their cooperative efforts is also examined. The section is largely based on the main hypothesis presented earlier in this report (see Section 1.1 *Methodology*), which suggests that by working to overcome obstacles and capitalizing on opportunities presented within seven specific areas impacted by the Israeli-Palestinian conflict, actors engaged in cooperative transboundary wastewater efforts can contribute to building peace in Israel and Palestine.

The section is divided into seven categories presented in individual sections, each of which analyzes obstacles and opportunities. The peacebuilding significance of cooperative wastewater initiatives is then assessed based on the demonstrated ability of wastewater treatment efforts to traverse the obstacles and to take advantage of the opportunities presented by those seven categories, which are divided into sections that include:

—Section 2.1 The Political Geography of West Bank Boundaries

—Section 2.2 The Securitization and Desecuritization of Water

—Section 2.3 The Politics of Information Sharing

—Section 2.4 Sustaining and Building Livelihoods

—Section 2.5 Gender and Rural Development

—Section 2.6 Public Participation

—Section 2.7 Symbolism and Cooperation over Wastewater

After identifying the peacebuilding opportunities and obstacles for transboundary water management, each section will also consider the degree to which PWEG and AIES have taken advantage of these opportunities. Methods by which to improve and strengthen the peacebuilding significance of current efforts in cooperative wastewater treatment are also suggested within each section.



Al Aqsa Mosque, Jerusalem
Photo Credit: Kateira Aryaeinejad

2.1 THE POLITICAL GEOGRAPHY OF WEST BANK BOUNDARIES

Introduction

The Israeli-Palestinian conflict allows for an examination of how constraints on space and place¹ form and perpetuate strife. Despite common ethnoreligious justifications, the Israeli-Palestinian conflict is rooted in territorial disputes that have become increasingly divisive since the 1948 Arab-Israeli War. Accordingly, political geography offers a useful lens of analysis that, among other things, situates power relations and struggles within their geographic and temporal context.²

Power relations in the contemporary international political system are defined by “the twin principles of territory and sovereignty.”³ The Palestinian and Israeli nationalist disputes over recognition of territorial authority is elucidated by a reading of the subtext of the territorialism principle: that societal groups will organize their space and territory in ways that are reflective of their values.⁴ Prioritized spatial allotment for certain activities over others indicates a hierarchy of value where, the greater the size or more preened the space, the more cultural emphasis and value conferred.⁵ In other words, modes of socio-political organization create physical environments reflective of their social relations.

The act of organizing the social realm via creating and maintaining boundaries is an integral cause of wastewater problems in the West Bank. These boundaries are significant to wastewater in two main ways. First, political boundaries can securitize surrounding spaces, people, and materials. Second, boundaries both create and reflect particular economic relations. Given the array of boundaries in the West Bank, the territory’s wastewater management is highly location dependent, and is either constrained or permitted based on the political arrangements transposed over a particular space.

Political geographic analysis also proposes that

the ways in which people have organized themselves spatially divulges the distribution of power within a society. As John Williams notes, “territorial borders as social and political constructs [are] intimately connected with the needs and purposes of dominant and hegemonic social groups and political constellations.”⁶ As such, some individuals and their spaces are more vulnerable to the effects of wastewater problems than others, depending on a myriad of social attributes, as well as their location.

Boundary Transactions

Given the social reality of many political boundaries transecting the territory of the West Bank—the Green Line, the Separation Barrier, Areas ABC, checkpoints, and the separate quarters of Jerusalem—it is important to ask what types of transactions are created or allowed by these dividing lines. The central tenet behind this inquiry is that borders, and certain sub-state boundaries, are part of a society’s socially constructed narratives. Put differently, boundary formation is an act of power by a society and a means of organizing social relations in physical space which subsequently (re)orders societal senses of place.⁷

Since most societies use boundaries as a part of maintaining the values comprising group identity,⁸ borders can also affirm conflict identities. When borders are manifestations of security concerns, their surrounding areas are also zones of securitization by the state for the distinct purpose of managing security risks in the borderland space.^{9 10} The Israeli state’s identification of the people, the materials, and even the ideas that cross boundaries as security risks indicates how Israel views ideal social relations.

Material and Population Flows

Israel’s vision of social relations in regard to its borders with the West Bank is perhaps best ex-

emplified by the separation barrier. The barrier's construction began in 2002 as a response to suicide attacks from a radical subset of Palestinian groups. It is made out of concrete in population-dense areas (3% of the structure) and chain link with barbed wire in other areas (97% of the structure).¹¹ This boundary is the most visible and arguably most definitive symbol of political division and cultural imaginings in both real and perceived difference. Like borders around the world, the barrier lends itself to creating and reinforcing narratives of in-group and out-group membership, or "otherness."¹² However, for the Israeli-Palestinian conflict, the extent of national parameters is not solely defined by this barrier, but also by a jumbled disarray of boundary lines that separate the land into the spaces known as Areas A, B, and C.

In contrast to the barrier's visual prominence, divisions based on the Areas, which resulted from Oslo II, are largely invisible in the West Bank, but are nevertheless 'felt' in local senses of place by the residents we spoke to in several towns (See *Site and Stream Story 5: Khirbet 'Atouf* and *Site and Stream Story 4: Al 'Auja*). Arguably, the Areas' dividing lines constantly remind Palestinians of their "otherness" and marginality in the eyes of Israelis, as well as differences in their rights and socio-economic status. This is the case even when Palestinians are located in areas of the West Bank far away from the separation barrier. Indeed, the territorial disunion imposed by the Area lines is so pronounced as to have created restrictions on Palestinian mobility within the West Bank. One Israeli NGO worker we interviewed reported that, as a result of this, some Palestinians have never been to other parts of the West Bank.¹³

The Palestinian population is most densely concentrated in Area A, but is often a short distance away in any direction from contentious spaces made by Area boundaries. Since, "borderland [is] a region of national confrontation, security dominance, and potential war,"¹⁴ a prevalent "borderland mentality" has arisen from living in such a fragmented landscape. The presence of these invisible lines foments the frustration and

umbrage that characterize this mentality among communities who feel the lines inhibit their ability to fully control the development of their own infrastructure.

This is particularly evident in Area A communities with roads designated Area C running through them, given that Area C territory is subject to control by the Israeli military. The fragmentation of a town's space means the installment of community-wide wastewater infrastructure is perceived to be an unfavorable risk by the local government. This viewpoint stems from a suspicion that, if Area A infrastructure were constructed, it would be vulnerable to the discretion of the Israeli Defense Forces (IDF) due to its control of Area C roads. In such instances, one sees a sharp juxtaposition of the narrative of Palestinian nationalism (which necessitates holding dominion over territory) and a heightened awareness of West Bank territory's susceptibility to external military control. Perceptions of an entrenched division of space thus intrude into the political psyche.

Boundaries not only shape an individual's political thinking, but also assert control over the environment contained within the territory. This can take the form of natural resource management, influence over agricultural practices, styles of legal property ownership, or some other aspect of social organization. Borders, in particular, can function as a device for filtering material and ideational flows across those boundaries in ways that fulfill the territorial security needs and preferences of a state.¹⁵ These flows are allowed to move freely or are stymied depending on the perceptions of the state regarding the risks posed by those entities. In the West Bank this means many production inputs are difficult or almost impossible to import,¹⁶ and construction materials are subject to strict monitoring, due to their classification as "dual-use"¹⁷ materials with potential military applications.

The slow process of cross-boundary transactions in the West Bank is illustrated by USAID projects. In 2010, the organization issued a memo to its partners of lessons learned about "costly delays

and cancellation of projects” regarding the shipping of materials across boundaries.¹⁸ Specifically, they found it was necessary to expend much energy gaining permission with the Israeli Defense Ministry’s Unit on Coordination of Government Activities in the Territories (COGAT) for projects in all three Areas. For example, they noted the need to confirm authorization with COGAT to carry out construction in locations within 100 meters of an Area C boundary as a precaution for avoiding future delays with permitting.¹⁹ Area C is the regulatory space in which each stage of all water projects requires separate permits from the JWC, ICA, and any number of other Israeli ministries (depending on the project).²⁰ Unfortunately, it is also the Area least populated by Palestinians, and thus an attractive location for municipal WWTPs, which are necessarily located away from population-dense areas like those of Area A.²¹

As seen in the Site and Stream Stories presented in this report, the nature of the fractured legal and political landscape determines whether construction of a certain type of wastewater infrastructure will be approved in a given location. For example, potential WWTPs in the Kidron Valley/Wadi Nar have been proposed in multiple locations, only to be rejected when they did not align with the political interests of both the Palestinian and the Israeli authorities. In one such instance, construction plans for a WWTP in the town of Al ‘Ubeidiya were rejected by the PA, due to the possibility that the plant might also serve nearby Israeli settlements.²² Suggestions by Israeli officials to site the wastewater infrastructure in Area C have also been dismissed due to the ambiguous future of a plant’s ownership in final status negotiations.²³ Additionally, if a WWTP were to be built far out into the desert of Area C (as Israeli officials have suggested), the cost to Palestinians of laying transport pipes and supplying the energy needed to pump wastewater in and treated water out could prove economically unjustifiable.²⁴

Furthermore, other facets of the Kidron Valley/Wadi Nar stream illustrate how socio-political contention can take too great a precedence

over the well-being of the biosphere and long-term human interests. Moreover, case studies from this area reveal the consequences of politics insufficiently communicating to manage a shared watershed, namely the creation of public health concerns and threats to the health of the ecosystems on which society depends (See *Site and Stream Story 1: Kidron Valley/Wadi Nar*).

Boundary Economies

In addition to their implications for public health and pollution concerns from marred terra,²⁵ boundaries both create and mirror the political economy of a territory.²⁶ Livelihoods in particular are hindered when boundaries restrict access to, and movement of, goods or services via limitations on imports or excessive bureaucratic red tape for acquiring permits. These restrictions can make the costs of doing business in the West Bank prohibitively expensive, and have resulted in limited employment opportunities for Palestinians. Consequently, many Palestinians seek employment across the separation barrier and in West Bank settlements.

Another cause of this economic phenomenon is the limited supply of fresh or unconventional water available for commercial activities. In towns such as Al ‘Auja, limited water has rendered farmers unable to cultivate their land, and they must subsequently find other means of employment. Substitutive livelihoods may take the form of other professions in the West Bank, obtaining permits to work across the barrier in Israel during the day, or working in Israeli settlements (with or without a permit). Given the lagging Palestinian labor market, the greater income derived from working for Israeli employers is seen as worth the time spent travelling and the scrutiny faced by Palestinians when crossing through the security checkpoints.²⁷

Away from the separation barrier, our visit to the village of ‘Atouf made apparent that land divided by boundaries of the Areas could very seriously impinge upon options for economic activity. Without access to a body of water, the village is

dependent on surface water. Unable to acquire permits to drill wells into the aquifer, the farmers must purchase water throughout the year and carefully ration water captured seasonally by cisterns.

A second circumstance impinging economic activities in the village is the frequent presence of Israeli security personnel, who enforce the boundaries of a nearby Israeli settlement (See *Site and Stream Story 5: Khirbet 'Atouf*). The villagers' sense of place is securitized to the degree that seemingly benign aspects of their agrarian lifestyle and ties to the land are perceived as a threat to this settlement. For example, village interviewees reported the confiscation of their tractors,²⁸ which the IDF considers to be potentially suitable for dangerous purposes as "dual use" items.

As a byproduct of the economic and political effects of West Bank boundaries, the separation barrier and designation of different Areas limit positive social interactions between Israelis and Palestinians, and thus restrict the possibility for peace. Moreover, this sense of "otherness" is exhibited at the national level of dialogue, perpetuating a mutual distrust. As a result, there is a disinclination to share information or communicate about wastewater treatment, which contributes to negative perceptions of environmental management choices.

An examination of the politics of pollution in the Beitunia/Modi'in stream demonstrates the ways in which the fragmented political landscape not only prohibits the flow of material goods for wastewater treatment across boundaries and limits interaction between social groups, but also inhibits the flow of information. In this instance, the technology to address wastewater problems exists, but the political will at the necessary level of governance does not. Subsequent water quality degradation is then itself fodder for accusations of political incompetency in environmental management (See *Site and Stream Story 3: Wadi Beitunia/Nahal Modi'in*).

Exploratory Transboundary Spaces

To reiterate, boundaries screen persons, materials, and ideas, thereby dictating what is considered socially and politically permissible in a given space. Spaces defined by the separation barrier, the Areas, and intra-group social divisions all come together to make the unique Israeli-Palestinian mix of insular communities. Moreover, the degree of a person or object's mobility through space is dictated by the spatial rules of the territory's sovereign power. Considering the slow and selective flows across West Bank boundaries, it is unsurprising that this territory's fragmented social, economic, and legal landscape results in unresolved environmental problems when transposed over the terra. Framed as such, wastewater pollution is symptomatic of stalemate between two parties that cannot come to a conclusion as to whom has territorial sovereignty and the self-determination that accompanies it. In this case, the social facts are given priority over the physical facts, no matter the detriment to people or to ecosystems from ignoring the biophysical world.

To pry open a space and create new meaning then, is to challenge the status quo maintained by those boundaries. The transboundary wastewater projects surveyed in this report are the Israeli and Palestinian epistemic communities' imaginings of common humanity, of shared land and quality of life, and of cooperation to diminish power asymmetry. In many ways, supplying unconventional water is an act of empowerment, as it strengthens Palestinian livelihoods and reaffirms place-based identity, thereby preventing their slow erasure through fragmentation of the Palestinian collective sense of self. Indeed, a notable aspect of political and social lines of division is that they are not permanent, but malleable. While not to underappreciate the propensity for rigid enforcement of boundaries and the unwillingness to succumb to change, it is nonetheless the case that "border-making constitutes a key principle for organizing social relations in space, [and] when borders change functions, shapes, and meanings, people's lives change as well."²⁹

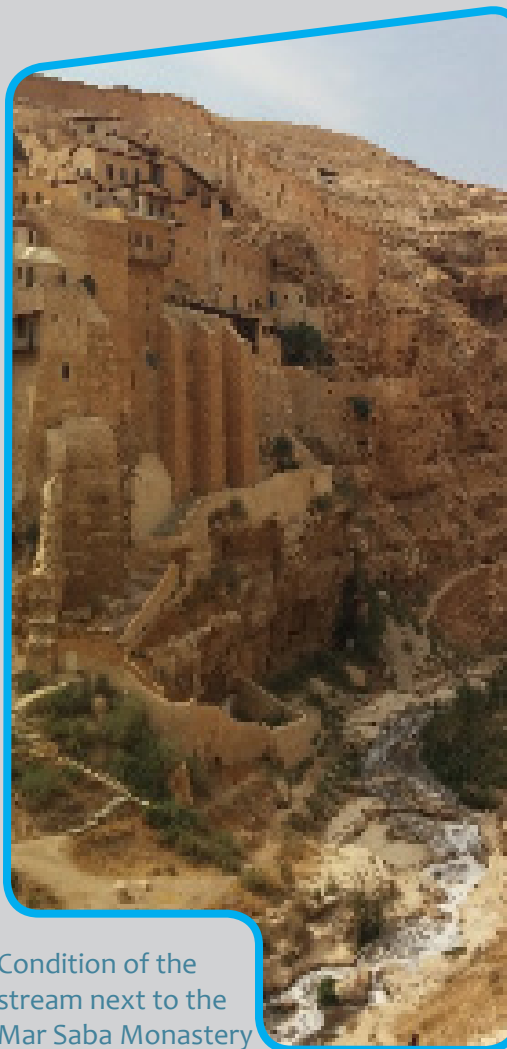
SITE AND STREAM STORY 1: KIDRON VALLEY/WADI NAR

Background

The stream running through the area known to Israelis as the Kidron Valley and to the Palestinians as the Wadi Nar has been polluted by a transboundary flow of wastewater from Israel into the West Bank. The current condition of its watershed results from the political divisions of Jerusalem, which have created obstacles to the construction of wastewater infrastructures. As further explained below, the Kidron Valley/Wadi Nar's story epitomizes the importance of adopting a unified environmental management strategy and highlights the ways in which political conflict has hindered the creation of joint strategies. The Kidron Valley/Wadi Nar story also illustrates the importance of information sharing in a mutually inhabited watershed, while revealing the various ways people perceive land and infrastructure as symbols relating to transboundary cooperation.

During an interview on Mt. Scopus, an urban planning expert explained that the hydrological ridge in the middle of Jerusalem dictates whether a drop of water will flow to either the Dead Sea or the Mediterranean.³⁰ While terrain may dictate where water in Jerusalem flows, political disputes influence how the city's wastewater is drained into the surrounding basin. In particular, West Jerusalem possesses the infrastructure to treat its sewage before release,³¹ whereas sewage from East Jerusalem flows untreated into open channels, which eventually empty out into the natural watershed.³² The situation for

the eastern part of the city is, in part, the result of the disparate policies in municipal zoning and construction permitting for East and West Jerusalem, which were created due to continued disputes over sovereignty in the city.³³ In total, one-third of the city's sewage is currently released into the Kidron/Nar,³⁴ with the total amount discharged into the watershed is estimated to be 35,000 cubic meters per day.³⁵



Condition of the stream next to the Mar Saba Monastery in June 2015 Kidron Valley/Wadi Nar
Photo Credit Lynn Brinkley

Israeli and Palestinian communities located further away from Jerusalem have also released wastewater into the Kidron/Nar for decades.³⁶ Although the majority of the pollution flows from Jerusalem into the West Bank, a portion of the total discharge originates from the West Bank city of Bethlehem, surrounding towns in the Bethlehem Governorate, and Bedouin communities spread throughout the area.³⁷ Palestinian and Israeli wastewater seeping into the Kidron/Nar – and thus through the region's porous soils – not only threatens public health and surface water quality, but also pollutes the Mountain Aquifer beneath it.³⁸

Obstacles for Downstream Riparians

Communities along the Kidron/Nar have often used nutrient-rich wastewater from the stream³⁹ for agricultural purposes.⁴⁰ Even so, most downstream communities recognize that the stream's condition poses serious environmental and pub-

lic health concerns. The Al ‘Ubeidiya municipality is one such community, as it straddles both banks of the stream and experiences many of the effects of wastewater pollution.⁴¹ The town’s wastewater problems are compounded by their inability to construct their own sewage system, which are further discussed below. In lieu of grid-based wastewater infrastructure, approximately 96% of Al ‘Ubeidiya’s population uses cesspits,⁴² which are ultimately emptied into tributaries as untreated effluent.⁴³

At the municipal council office in Al ‘Ubeidiya, wastewater technicians echoed other municipal officials and inhabitants across the West Bank in identifying the environment as a matter of public health. Similarly, they indicated they believed that water availability and the politics of its reuse are inextricably linked with quality of life, especially in light of the need for irrigation in a predominately rural economy. The mayor also reported that his constituents were open to cooperation with Israeli or international organizations seeking to help with wastewater, but has thus far found the Israeli government to be unsupportive of this. The mayor also expressed his willingness to collaborate across political and cultural lines, despite the risks involved in doing so. During his tenure, he has met with representatives from international governments, partnered with the Kidron Valley Master Plan Committee, and invited other regional Palestinian mayors to meetings regarding the Master Plan.⁴⁴ However, the mayor noted that he was unable to modify wastewater treatment plans to account for Israeli viewpoints because there is an insufficient amount of communication with Israeli officials to better inform his decisions.⁴⁵

The wastewater engineers working with the mayor described similar difficulties in their col-

laborative efforts with Israeli technical experts. One engineer explained that even if both Israeli and Palestinian wastewater professionals agree on the best location for a WWTP, given certain environmental and mechanical considerations, they may not be able to build a plant at that location because of political disputes.⁴⁶ Further complicating matters is the complex overlay of multiple legal systems with which civil society and technical experts must contend in order to implement infrastructural projects for Jerusalem and elsewhere—appropriately described as “planning acrobatics” by a member of the Kidron Master Plan Committee.⁴⁷

However, most of the disagreements over siting potential WWTPs in the West Bank stems from the politics of final status issues and the future ownership of property in Areas B and C. As explained by an aide to the mayor of Al ‘Ubeidiya, the politics of this situation are also predicated on the specific amount of wastewater from Palestinian communities and Israeli settlements that would enter a WWTP, and for whose economic benefit the plant’s final output would be used.⁴⁸



Water infrastructure poster in the Ubeidiya municipal office
Photo Credit Lynn Brinkley

Opportunities in Basin Management

Members of the Kidron Valley Master Plan Committee argue that the Kidron/Nar Basin is as much a cultural basin as it is an ecological basin.⁴⁹ As part of the Fertile Crescent, the terrain has been inhabited for thousands of years, and its local environment has been physically shaped by the civilizations that have developed and flourished within it. The members of the committee thus argue that culture is a longstanding part of the local ecosystem, and for further evidence, they point to the innumerable worship, shelter, and

burial spaces created within the basin by religious individuals during previous centuries.

During a visit to the Mar Saba Monastery, one of the more eminent of these spaces, the poor condition of the stream was immediately apparent, as one can see and smell that its contents include sewage and solid waste debris. The stream's current state illustrates how an increasingly urbanized population results in fewer people directly interacting with the environment, while retaining their ability to affect it with emissions. In light of this, one goal of those who advocate for basin management is to create a greater appreciation in society for the cultural significance of the basin. By inspiring enough people to think of the basin as a culturally-shared landscape, the committee hopes to motivate both parties in the conflict to address its persistently polluted condition with joint management in the near future.

The story of the Kidron Valley/Wadi Nar illustrates the difficulties and aspirations of those working on the West Bank wastewater pollution problem. It also corroborates a recurrent theme in the conflict, where barriers created at higher levels of politics prevent likeminded Palestinians and Israelis from implementing solutions. Although these barriers are largely the cause of poor resource management, the work accomplished in the basin by the Master Plan committee, Al 'Ubeidiya officials, and others, demonstrates the great potential of transboundary cooperation to mitigate the harmful effects of these obstacles.



Mar Saba Monastery, Kidron Valley/Wadi Nar

Photo Credit: Julia Chalphin

Section 2.1 Notes:

1 Space and place are two different notions. Space refers to a corporeal location on the Earth's surface, whereas places are these same locations imbued with special qualities through human perceptions of the particular time period. (Reference: John Agnew and David Livingstone, *The SAGE Handbook of Geographical Knowledge*. (London: SAGE Publications, 2011), 317.) Similarly, there are social facts and there are physical facts. Ecosystems and the terrain from which they spring are biophysical facts, which can and do exist without human intervention. Social facts are produced from the invented social systems of humans, but should not be underestimated in their ability to wield power over our decisions. (Reference: Emile Durkheim, Steven Lukes, ed. *The Rules of Sociological Method and Selected Texts on Sociology and its Method*. W. D. Halls (translator) (New York: Free Press, 1982 [1895]), passim. Also: Joshua Rust, John Searle and the Construction of Social Reality (London: Continuum, 2006), 10.)

2 Colin Flint and Peter Taylor, *Political Geography: World-Economy, Nation-State, and Locality* (Harlow: Prentice Hall, 2011), 4.

3 Ibid, 125.

4 From a combination of premises of space and place [supra note 1] arises two other concepts: territory and terra. Terra, Latin for "earth," is self-evident in its reference to the biophysical realm. Territory, on the other hand, is not to be conflated with holistic earth systems, but rather, understood as a human-imposed distinction of space and place. Since the Treaty of Westphalia, human societies have had an impetus to take it upon themselves to territorialize the Earth's terrain and thus carve out a space for their newly established citizens in the global order of social facts. After a space has been made for the State via demarcation of territorial boundaries, citizens may go about creating and imagining a sense of place, an emotional attachment to that space. Often, these imaginings and establishment of societal parameters lead to that polity's values becoming manifest in its infrastructure. (For example, see: Susan Star, "The Ethnography of Infrastructure," *American Behavioral Scientist* 43 no. 3 (1999): passim.)

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6 John Williams, *The Ethics of Territorial Borders: Drawing Lines in the Shifting Sand* (Houndmills, Hampshire: Palgrave Macmillan, 2006), 27.

7 Gabriel Popescu, *Bordering and Ordering the Twenty-First Century: Understanding Borders* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 2012), 151.

8 Williams, *The Ethics of Territorial Borders*, 118.

9 Popescu, *Bordering and Ordering*, 93.

10 Benjamin Muller, "Borders, Risks, Exclusions," *Studies in Social Justice* 3, no. 1 (2009): 69.

11 "Saving Lives: Israel's Anti-Terrorist Fence – Answers to Questions," Israeli Ministry of Foreign Affairs, last modified January 1, 2004, <http://www.mfa.gov.il/mfa/foreignpolicy/terrorism/palestinian/pages/saving%20lives-%20israel-s%20anti-terrorist%20fence%20-%20answ.aspx>.

12 Flint and Taylor, *Political Geography*, 267.

13 Interviewee 25, Interview by AU Practicum Team, Tel Aviv, June 2015.

14 Julian Minghi, "From Conflict to Harmony in Border Landscapes," in *The Geography of Border Landscapes*, ed. D. Rumley and J. Mingh (London: Routledge, 1991), 29.

15 Alexander Diener and Joshua Hagen, *Borders: A Very Short Introduction* (New York: Oxford University Press, 2012), 66.

16 World Bank, *Assessment of Restrictions on Palestinian Water Sector Development*, Report No. 47657-GZ (Washington, DC: World Bank, 2009), 2.

17 "Dual-use" materials are ordinary items intended for civilian purposes, but can be used in (counter)military applications.

18 Roy Plucknett to all USAID/West Bank and Gaza Contractors, June 9, 2010, Memo #2010-WBG-11, Subject: "Coordination Prior to Construction in, or the Importation of Construction Materials or Equipment into, the West Bank (Areas A, B, and C)" (USAID, 2010), 1-3.

19 Ibid.

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2.2 THE SECURITIZATION AND DESECURITIZATION OF WATER

Introduction

While water is ordinarily a non-securitized issue, far removed from the security agenda, water has been constructed as a security issue within the Israeli-Palestinian conflict. Although efforts have been made to better balance power over water, an asymmetrical relationship between Israel and Palestine still exists, mutually reinforcing and perpetuating the securitization of water, and creating barriers to equitable wastewater management. This section will begin by considering how water has been securitized over time before analyzing the role NGOs play in desecuritizing water and relations over water. The section will conclude with a brief assessment of the role AIES and PWEF, specifically, play in the desecuritization process and, thus, in environmental peacebuilding.

Securitization Theory

Although security is usually defined in terms of military threats, securitization theory, developed by the Copenhagen School in the 1990s, widens the definition of security to also include nonmilitary threats.^{1 2} According to the framework of securitization, threats are security issues, rather than political issues when a securitizing actor rhetorically frames them as a security threat, and endorses emergency measures to handle them as such threats.³ The securitization process is,

thus, a speech act that, according to securitization theory, “necessitates the use and perpetual repetition of the rhetoric of existential threat by the securitizing actor.”⁴ This is so even if the actual existence of such a threat is contested.⁵ The distinction between issues that are non-politicized, politicized, and securitized is further clarified in Table 2.2a.

Water before Oslo

The securitization of water in Israel and Palestine can be traced back to the 1967 Six Day War. In the war’s aftermath, the hydro-strategic relationship changed, shifting the power balance between Israel and Palestine in the years leading up to the Oslo Accords.⁷ In order to conserve water in the region, Israel issued a series of military orders pertaining to water, listed in Table 2.2b. These orders played a part in eventually allowing Israel to claim civil control over water, providing the state with the power to monitor and restrict Palestinian water production.⁸ While the Israeli water company, Mekorot, drilled a total of thirty-six wells between 1967 and 1989, these military orders prevented Palestinian farmers from constructing new agricultural wells. Moreover, as a result of these orders, water ceased to be a matter addressed within the normal channels of public policy, and instead became a matter of state security.⁹

Table 2.2a: Classification of Issues According to the Framework of Securitization

Non-politicized Issue	“The state does not deal with it and it is not in any other way made an issue of public debate and decision.”
Politicized Issue	“The issue is part of public policy, requiring government decision and resource allocations or, more rarely, some other form of communal governance.”
Securitized Issue	“The issue is presented as an existential threat, requiring emergency measures and justifying actions outside the normal bounds of political procedures.” ⁶

Table compiled from: Barry Buzan, Ole Wæver, and Jaap de Wilde, *Security: A New Framework for Analysis* (London: Lynne Rienner Publishers, 2008), 23-24.

Table 2.2b: Israeli Military Orders on Water in 1967

Military Order 92, 15 August 1967: “Granted complete authority over all water-related issues in the OPT (occupied Palestinian territories) to the Israeli army.”

Military Order 158, 19 November 1967: “Stipulated that Palestinians could not construct any new water installation without first obtaining a permit from the Israeli army and that any water installation or resources built without a permit would be confiscated.”

Military Order 291, 19 December 1968: “Annulled all land and water-related arrangements which existed prior to Israel’s occupation of the West Bank.”¹⁰

Table compiled from: Amnesty International. *Troubled Waters-Palestinians Denied Fair Access to Water* (London: Amnesty International Publications, 2009).

Oslo II Agreement and the JWC

Although the Oslo II Agreement in 1995 formally established “Palestinian Water Rights” through the creation of the JWC, a mechanism meant to balance the distribution of water, Israel ultimately continued to possess greater power over water, allowing water to remain securitized.^{11 12} As previously mentioned in this report, the Oslo Accords ensured that the IDF’s Civil Administration would have final say in all permit requests for infrastructure in Area C, including infrastructure for water projects. In doing so, Oslo also prioritized Israeli military interests over Palestinian development and joint Israeli-Palestinian water management.¹³ In addition, according to the terms of the Oslo II Agreement, the JWC does not maintain jurisdiction over transboundary water resources. Given this, Israel possesses veto power over the approval of water projects, including those involving transboundary water flows. This indicates that should a Palestinian water project threaten to compromise any of Israel’s technical, political, or military interests, Israel is able to reject the water project.^{14 15} No equivalent Palestinian veto power was provided for in these new provisions, which, thus, reconstituted water’s securitization. Water was subsequently elevated to a final status issue.

Water beyond Oslo

The Oslo Agreement was initially designed to serve as an interim agreement until the year 2000, with provisions to ensure that two equal

parties would cooperate in decision-making over water. However, despite Oslo’s efforts to shift the Israeli-Palestinian power dynamic, an asymmetrical structure to balance power and distribute water still exists two decades later. This directly contributes to the continual securitization of water. While the Palestinians have gained some legitimacy and power after Oslo, Israel still possesses greater power over water, with its permission for development still required in the water sector.¹⁶ Israel’s greater power over water is demonstrated in multiple ways, as indicated by Palestinians interviewed during this study. According to those Palestinians interviewed, not only are they still unable to obtain permits to drill new domestic and agricultural wells, but the IDF also retains the power to demolish any infrastructure in Area C it considers to be a threat to Israeli national security, and to determine the placement of wastewater treatment plants.^{17 18 19} Israel’s control over the location of wastewater treatment plants is especially troubling given that it allows Israel to select “costly, impossible, and damaging locations.”²⁰ The selection of such locations, as Palestinians interviewed also indicated, is meant to prevent “counter development to [Israel’s] own development,” or, in other words, to prevent actions that Israel believes could threaten the security and development of the Israeli state.²¹

Securitization of Water

Given that “imbalanced power between interacting parties can aid in the construction of perceived

threats,” power asymmetry between Israelis and Palestinians has been mutually reinforced and mutually perpetuated by the securitization of water.²² The history of power over water in Israel and Palestine, as presented in this section, illustrates this point. The series of military orders in 1967 (as presented earlier in this section) should, thus, be recognized as securitizing moves that initiated the securitization process. This subsequently provided Israel with greater power over water, and consequently, with greater power over Palestinians. While the Oslo Accords tried to balance the distribution of power, and thus split access to water responsibilities, the Accords also elevated water to a final status issue. This provided Israel with the incentive to not only frame water, but also to frame the Palestinians’ use of water as constituting an immediate, existential threat to the environment and to Israeli civilization, thus creating the context for securitization.^{23 24 25} While Israeli military orders from 1967 may be seen as initial securitizing acts within the environmental sector, aimed at conserving and protecting water quality in a water-scarce region, water has also been securitized in the military sector. This has, in turn, justified the use of Israeli military force to control territory and even further securitized relations between Israelis and Palestinians, thereby furthering animosity and perpetuating the conflict.^{26 27}

Pathways to Peace

Parallel to the securitization process are civil society-level efforts to manage transboundary water and wastewater projects.²⁸ While a formal desecuritization process has not yet occurred, NGO cooperation on transboundary water projects has, to some extent, led to environmental peacebuilding, as transboundary water projects have provided incentives for cooperation.²⁹ Cooperation of this kind can, therefore, be seen as comprising a series of desecuritizing acts that contribute to the initiation of a desecuritization process.

Desecuritization

Coskun defines desecuritization as “a process in

which a political community downgrades or ceases to treat something as an existential threat to a valued referent object, and reduces or stops calling for exceptional measures to deal with the threat.”³⁰ The ultimate goal of desecuritization is “the achievement of a situation in which the issue in question is no longer seen as threatening, and is no longer defined in security terms.”³¹ However, in order for this to occur, Coskun indicates that Israel and Palestine must redefine their perceptions of one another by building some degree of trust. Such trust “focuses on the common interests that exist among continuing differences in perceptions and attitudes.”³² While the absence of violence does not denote desecuritization, political will and cooperation amongst organizations can help to usher in the desecuritization of relations.^{33 34} Despite the limited impact of NGOs given the small-scale nature of their projects, NGOs are indeed contributing to the initiation of the desecuritization process. However, in order to effectively remove water from the security agenda, this process must include desecuritizing actors at both the societal and the official level.³⁵ As such, the desecuritization process has not yet been fully realized.

NGOs as Desecuritizing Actors

Given that speech acts by a securitizing actor contribute to securitization, it is necessary to consider how speech acts by a desecuritizing actor, such as an NGO, can contribute to initiating a desecuritization process. As indicated in Table 2.2c, while both Israeli and Palestinian civil society actors seek environmental benefits from cooperation over wastewater, key differences in their goals remain. For example, one Israeli civil society organization we interviewed indicated that it strives to “contribute to the environment and peacebuilding,” while a Palestinian civil society organization interviewed indicated that it strives to “serve [its] authority” and contribute to environmental goals in order to provide tangible benefits to the Palestinian people.³⁶ However, despite these key differences, Israeli and Palestinian environmental NGOs, water experts, and engineers still serve as desecuritizing actors. Working together to contribute to environmental goals represents

a desecuritizing act, especially given that cooperation on an otherwise highly-securitized subject contributes to building peace and preventing violence through providing tangible benefits to local populations and demonstrating that cooperative acts occur. Even if cooperation on a common cause is not the primary objective for such cooperation, and even if each sides' primary objective is only regarded as a side effect by the other, NGOs are, nevertheless, building peace by removing water from the security agenda.³⁷ Representatives from both PWEG and AIES indicate that they believe it is important to leave the politics of the conflict aside and bring both sides together in order to build trust, better understand the other, and work together to solve the water issue, which, in effect, is a desecuritizing act.^{38 39} Moreover, by removing water from politics, and by framing the "securitization of conflict as a threat to shared water resources," such NGOs present the issue of cooperative water management as

a "situation where both Israelis and Palestinians stand to lose if they do not carefully manage the water they share."⁴⁰ By working together to treat wastewater and increase the overall supply of water, NGOs like AIES, PWEG, HWE, and EcoPeace protect the environment, provide tangible benefits, and ultimately contribute to peacebuilding, as their cooperation and joint projects are not only building trust among each other and within the professional community, but are also redefining their perception of 'the other' and the perception of water as a security issue. This is especially evident when considering Table 2.2c, which presents quotes from interviews we conducted with Israeli and Palestinian civil society actors and government representatives. While not all actors at the civil society and government level echoed the same sentiments, the following quotes represent the views of many of the actors we spoke with, and thus illustrate how civil society cooperation over water has not only impacted relations

Table 2.2c: Quotes of Cooperation and Environmental NGO Water Projects

	Israel	Palestine
Civil Society	<p>"Water cannot wait [as a final status issue]."⁴¹</p> <p>"[We are] building [an] understanding of the other through working together."⁴²</p> <p>"[We show] how it can be detrimental to 'my' instead of looking to 'them'. "⁴³</p> <p>"[Our] goal is to create a little peace and solve environmental problems on a community-to-community basis."⁴⁴</p> <p>"[We] strive to empower the local population and create the conditions for a lasting and sustainable peace."⁴⁵</p> <p>"[We] hope [our] work will lead to peace on a local scale, further understanding of the other, [and] empower people to impact politics."⁴⁶</p>	<p>"Leave politics aside and when there is an issue to solve then work to solve it."⁴⁷</p> <p>"Cooperative projects can be a tool of building the peace here, and not the conflict."⁴⁸</p> <p>"If everything is stuck in the government you will never solve the issue."⁴⁹</p> <p>"[Our mandate is] to serve our authority"⁵⁰ and to provide "tangible benefits to Palestinians."⁵¹</p> <p>"The goal is to protect the environment and maybe this can help politics later."⁵²</p> <p>"Cooperation is important because this kind of cooperation [away from politics] builds the community."⁵³</p> <p>"If we are enemies and we have a common challenge, you are my neighbor and we have to solve it."⁵⁴</p>
Government	<p>"Transboundary NGOs are our main agents of cooperation. The things we do are more small-scale and local. As things improve, the government must take the driver's seat. It has to be [the NGOs] that start it, and then the government must take the reins. When the governments would not speak to each other, the only ones who were speaking were the NGOs."⁵⁵</p> <p>"[Cooperation over wastewater is] another step toward peace."⁵⁶</p> <p>"There must be cooperation and coordination between Israel and its neighbors."⁵⁷</p>	<p>"The PA cannot intervene in such areas so NGOs are needed."⁵⁸</p> <p>"Cross-boundary cooperation in wastewater [is] a tool to promote bilateral state relations and promote peace based on equal rights."⁵⁹</p> <p>"Cooperation will end with benefits for both sides."⁶⁰</p> <p>"Increasing development capacity in Palestine can increase cooperation."⁶¹</p> <p>"Water does not know borders."⁶²</p>

among Israeli and Palestinian civil society actors, but has also impacted government views. As the table demonstrates, government officials recognize the importance of both NGO cooperation and NGO efforts to provide tangible benefits through cooperation. This, in effect, is contributing to peacebuilding, as NGOs are beginning to remove water as a factor of the conflict, even as perceived at the governmental level.

Desecuritizing Acts and Peacebuilding

Despite the challenges that often accompany cooperation, the desire to achieve individual and shared objectives has allowed Israeli and Palestinian NGOs to “turn a zero-sum game into a win-win case” by developing the infrastructure needed to address water related issues and needs on both sides, even if only on a small-scale. Doing so impacts the quality of Palestinian livelihoods, and also serves as a desecuritizing act that contributes to initiating the desecuritization process (see Section 2.4 *Sustaining and Building Livelihoods*).^{63 64} However, despite protecting the environment and producing tangible benefits, NGOs have yet to address the “macro-level structural issues in water management,” which, instead, must be addressed at an official level.⁶⁵ While the political will to desecuritize water at the official level has yet to manifest itself into actual policy, both Palestinian and Israeli governmental officials do recognize important aspects related to the desecuritization of water, as evident in Table 2.2c. These aspects include: 1) the need to cooperate over water; 2) the tangible benefits that result from civil society-level cooperation over water; and 3) that cooperation over water can serve to enhance cooperation with ‘the other’ beyond water. Thus, efforts to cooperate over shared wastewater treatment projects by Israeli and Palestinian NGOs not only serve as desecuritizing acts initiating a desecuritization process with regard to water, but also serve to initiate desecuritizing moves between Israelis and Palestinians with regard to matters other than water. As Fischhendler even notes, “once de-securitization is achieved in water negotiations, it is assumed that it will also have a positive effect on other securitized issues.”⁶⁶

Assessment of AIES and PWEG

While AIES and PWEG may not see the significance of their cooperation in heralding the desecuritization of water, their cooperation is significant, and is seen as so among government officials. This recognition illustrates that although a desecuritization process has not yet manifest itself in public policy, and has therefore yet to fully occur, NGO cooperation has begun to initiate this process. As such, AIES and PWEG should continue to cooperate with each other, and with other NGOs, while recognizing that their cooperation functions as a desecuritizing act, and that their cooperative actions have allowed them to serve as desecuritizing actors, at least with regard to water within the Israeli-Palestinian conflict. However, given that water was securitized through speech acts, both AIES and PWEG should remain mindful that, despite their own different primary objectives, how they choose to frame their cooperation over joint water projects does have an impact on the desecuritization of water, and, thus, directly impacts the peacebuilding significance of their efforts.



Rooftop water storage in East Jerusalem
Photo Credit: Andrew Conca-Cheng

SITE AND STREAM STORY 2: AL TAYBEH-RAMOUN WASTE-WATER TREATMENT PLANT

Background

The West Bank communities of Al Taybeh and Ramoun are located within the Ramallah Governorate. Both have nine-member municipalities created by the Palestinian National Authority that govern each community and are responsible for providing and maintaining basic services.^{67 68} Ramoun's village council has the additional responsibility to establish and maintain drinking water and electricity networks.⁶⁹ Both towns are relatively wealthy compared to other areas in the West Bank, and have similar population, land areas, and management challenges.

The Jerusalem Water

Authority supplies water to Al Taybeh and Ramoun via a damaged public network that leaks and wastes finite water.^{70 71} In 2010 approximately 94,631 cubic meters per year – around 190 liters per capita per day – were supplied to Al Taybeh.⁷² However, due to infrastructure problems with the public network, an estimated 26.5% of this water was lost during transportation and distribution, resulting in only 137 liters per capita per day.⁷³ The same year 97,730 cubic meters of water were supplied to Ramoun, roughly 108 liters per capita per day. As a result of the estimated 26.5% loss of water during transfer, the average water supply in the village was only around 80 liters per capita per day.⁷⁴

Al Taybeh and Ramoun hold wastewater in cesspits and later dispose of it into nearby wadis, further damaging the environment and posing health risks. Al Taybeh produces an estimated

55,643 cubic meters of wastewater annually,⁷⁵ and Ramoun produces an annual estimated 57,000 cubic meters.⁷⁶ If this volume of wastewater were treated for reuse, it would help to address water shortages and reduce the environmental and health risks in the two towns.



Taybeh and Ramoun WWTP Sign
Photo Credit Julia Chalphin

Prior to 2014, both towns lacked sufficient water supply, sanitation, solid waste management, and wastewater treatment. However, in 2014, a small-scale centralized WWTP was constructed to serve both Al Taybeh and Ramoun. Both towns have greatly ben-

efitted from the WWTP, as it has assisted the towns with their major issues of water scarcity and wastewater management. While the convoluted permitting process and fragmented land ownership did complicate the planning and construction of the plant, these obstacles were overcome. The plant now successfully delivers tangible results to both towns.

Obstacles and Opportunities

The Al Taybeh-Ramoun WWTP is an example of a successful small-scale centralized, multilateral project serving the Al Taybeh and Ramoun communities. This €3 million plant was funded by the European Union, and is one of the main endeavors of the PWEF Food Security Project.⁷⁷ The Al Taybeh-Ramoun WWTP was created as a result of a multilateral partnership between PWEF, CESVI, the Italian Aid Agency, and the Palestin-

ian Union for Agricultural Work Committees (UAWC). By treating 400-500 cubic meters of wastewater from Al Taybeh and Ramoun daily, it services around 5,000 people, and is classified as a mini-centralized unit.^{78,79} Through a new irrigation system built into the project, the treated wastewater is reused to cultivate 600 dunums⁸⁰ of land that are predominantly planted with olive trees.⁸¹ This compact, low-energy, and low-maintenance plant provides planning and implementation methods that can be used as a guide for the success of future projects.⁸²

Due to its small size, this plant was able to bypass many of the typical political obstacles, and was constructed in only three years.⁸³ However, while PWEG originally proposed constructing the plant in Area C, due to the Israeli Civil Administration's permitting process and resulting delays, the location of the plant was ultimately changed to a site in Area B.⁸⁴ Although loca-

tional planning changes to Area B allowed Palestinians to maintain a degree of autonomy over the project, by physically moving the WWTP into Area B the plant was also moved closer to the communities of Al Taybeh and Ramoun, and, thus, created greater health risks.⁸⁵ Moreover, despite changing locations, the project was still delayed in Israeli customs for six months, which a PWEG official indicated was a "relatively short wait time," as building supplies can be delayed in customs for months or even years awaiting Israeli approval (see *Site and Stream Story 6: West Nablus Wastewater Treatment Plant*).⁸⁶

The Al Taybeh-Ramoun WWTP illustrates some of the benefits of site-specific, small-scale centralized systems in avoiding many of the typical political obstacles, while still providing tangible benefits. However, due to political and security restrictions, it also shows how these benefits are not yet maximized.



Rotating Filters at the Al-Taybeh and Ramoun WWTP
Photo Credit Julia Chalphin

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2.3 THE POLITICS OF INFORMATION SHARING

Introduction

Significant barriers for effective transboundary water management within the Israeli-Palestinian conflict are those related to the production and exchange of information, including a lack of trust, inconsistencies in baseline data, and an existing power imbalance. Despite these challenges, engaging in knowledge exchanges can enhance the prospects for environmental peacebuilding by reducing uncertainty and building trust. Based on this argument, this section will examine the relationship between information sharing and environmental peacebuilding, highlighting the ways in which transboundary cooperation on water issues can leverage the flow of information across social and political borders. In addition, this section will provide an assessment of information exchanges at various levels within Israel and the West Bank, as well as an evaluation of AIES and PWEG's role as both keepers and distributors of information. The goal is, thus, to emphasize the importance of promoting information sharing within conflict environments, while also recognizing the complexity of doing so.

The Importance of Information Sharing

While information exchange in itself is not sufficient to bring peace to the Middle East, it can serve as an important catalyst toward peace.¹ As Ken Conca states, “creating shared environmental knowledge through cooperative means may be a useful confidence-building tool.”² Similarly, Alexander Carius states that “the exchange of information or water sharing agreements alone will not result in peace, yet, they can provide an initial impetus for broader cooperation between conflicting parties.”³ Information sharing can play an important role in conflict settings and has far-reaching impacts. More specifically, exchanging water information can influence economic behavior, population movement, and politics, with varying impacts on perceptions of security.⁴

However, various complexities and challenges are also associated with information sharing. The following section will address the obstacles and opportunities that information sharing can pose in peacebuilding.

Obstacles and Opportunities for Peacebuilding through Information Sharing

Though information sharing can arguably serve as a key tool in paving a way toward peace, barriers such as mistrust and uncertainty can prevent information from crossing boundary lines. Keisuke Iida outlines two types of uncertainties that serve as barriers to international cooperation: strategic uncertainty and analytic uncertainty. These uncertainties can be easily applied to the notion of transboundary water cooperation.

—*Analytic uncertainty* “results from incomplete understandings of cause-and-effect relationships in a particular system, domain, or issue-area.” It surrounds factors such as “the harmful effects of environmental problems, the severity of such harm, and the impact of environmental policy measures.”⁵

—*Strategic uncertainty* “exists because actors have incomplete information about each other's attributes, preferences, and intentions.” Such uncertainty is evident “in the deep suspicions governments often voice about the hidden economic and political motives of actors with whom they disagree on specific environmental policy initiatives.”⁶

Conca argues that neither of the two uncertainties are always necessary for cooperation to occur, but that both do serve as significant roadblocks in identifying opportunities for mutual gains through cooperation, and make it easier for those who are against cooperation to capitalize on misidentifying the motives of “the other.”⁷

In some instances, the act of sharing information can stifle the peacebuilding process, as it can lead to further distrust and tension between parties. Conca states that, “there are episodes in which knowledge controversies seem to reproduce and harden mistrust rather than soften it,”⁸ and Carius argues that, “technically complex issues, in which conflicting parties almost invariably rely on disparate, fragmented information, can intensify mutual distrust.”⁹ Carius also advocates for building up a “shared knowledge base” in order to overcome this challenge.¹⁰ Conca echoes the same sentiment, stating that “the rival forms of knowledge that make environmental cooperation difficult may also provide opportunities to create new cooperative knowledge.”¹¹

Another obstacle to information sharing is the way in which information is exchanged and not exchanged at various levels in transboundary cooperation. In regard to the Middle East, Carius argues there is only cooperation on the technical and local level. For instance, EcoPeace, a civil society organization, created the Good Water Neighbors (GWN) Project, which brought together local communities from Israel, Jordan, and Palestine to cooperate over water management projects. Carius states that this type of cooperation does not exist on the political level, and he is unsure as to the specific conditions that will lead to such cooperation.¹² Even so, he suggests that the choice of negotiation topics should be further examined. Carius also qualifies that in certain situations, focusing on technical issues may provide an “entry point” for cooperation, especially in situations where there is limited willingness to negotiate.^{13 14}

Information sharing within a conflict can be challenging, as there may be an unequal power distribution between parties. Michel Foucault argues that there is a strong link between knowledge and power. He states that “power produces knowledge; that power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same

time power relations.”¹⁵ Thus, whomever is the keeper of knowledge holds the power, and can determine relations to such power, ultimately causing imbalances. These power imbalances, or asymmetries, serve as notable barriers to knowledge sharing within cooperative transboundary initiatives.

Within the Israeli-Palestinian conflict, Mark Zeitoun argues that one way Israelis exert power over Palestinians is by withholding information. Although there is partial data sharing within the JWC, Israel has the authority to deny Palestinians access to Israeli water information, including information related to Israeli settlements. Zeitoun states that “partial data sharing of a resource precludes meaningful use of the data, even when it is available.”¹⁶ Carius argues that one way in which to ensure the success of cooperative water management is for all stakeholders involved to receive adequate resources (i.e. information) “to enable them to participate as equal partners.”¹⁷ As such, the power imbalance between Israel and Palestine needs to be resolved in order to allow for transboundary cooperation and environmental peacemaking. Equal access to information may be one way to balance the scales.

Assessment of Information Exchange within Israel and the West Bank

In our research on the cooperative work of NGOs and institutional actors working on water issues in Israel and the West Bank, we sought to address three main questions: Who are the parties that exchange information? What information is being exchanged? And, how is that information exchanged? Answering these questions will help to explain how information exchange can enhance the peacebuilding potential of cooperative water projects.

Who are the Parties Exchanging Information?

There are a number of expert and staff exchanges occurring on both the technical and local lev-

el within the region, and amongst unilateral and transboundary actors. On the local level, civil society organizations engage in transboundary staff exchanges while working on wastewater projects. For example, PWEG and AIES have a pool of local experts that they access in order to successfully complete projects. Within cooperative projects, PWEG engages in unilateral exchanges of information with local communities that AIES would not otherwise be in contact with due to territorial restrictions within the West Bank. PWEG also engages in non-transboundary exchanges of information with Palestinian engineers in implementing projects such as the Al Taybeh-Ramoun WWTP (see *Site and Stream Story 2: Al Taybeh-Ramoun Wastewater Treatment Plant*).

At the local level, evidence of people-to-people exchanges are also present. Local mayors, such as officials within the Ramoun municipality, work together on wastewater projects. Projects such as the Kidron Valley/Wadi Nar Master Plan (see *Site and Stream Story 1: Kidron Valley/Wadi Nar*) allow for professional technical experts to engage in transboundary knowledge exchange and the building of cooperative knowledge.

Information exchange also occurs on the international level. Civil society organizations on both sides engage in information exchanges with international organizations such as USAID. These international organizations serve as third parties, collecting and disseminating information between the various actors involved. Additionally, there is some limited exchange of information that occurs on the governmental level between the PWA and the IWA.

What Types of Information are Exchanged?

There are various types of information exchanged over cooperative water projects. One type of information includes knowledge that is locally sourced from villages, municipalities, and schools, with locals providing information on water quality and quantity. In addition, there is technical knowledge that is sourced from pro-

fessional experts such as engineers, as well as from baseline data, including surveys, measurements, and projections. Organizations such as PWEG collect their project-specific information by going door-to-door at project sites to survey the local population. The INPA collects water measurements through computerized systems placed at various water sites. In addition, the Regional Water Data Banks Project, another form of baseline data, was created in 1994, and serves “to facilitate the exchange of compatible, consistent and reliable water data between Israel, Jordan, and Palestinian territories.”¹⁸

How is Information Exchanged?

Information exchanged between Israelis and Palestinians over transboundary water projects is typically shared informally, or unofficially, without any systematic support. Such informal sharing of information takes place on both the governmental and local level. For instance, although there have been no formal meetings within the JWC since 2010, the IWA claims that both Israelis and Palestinians have met regularly outside of these formal meetings.¹⁹ Some of the actors interviewed in this study made note of the limitations caused by informal information sharing practices. A representative from the PWA stated that there is a lack of legally binding documents based on international law despite there being mutual interest on both sides for the protection of the environment.²⁰ Another PWA official voiced a similar viewpoint, stating that, “it’s [information sharing] not systematic, there are no terms of reference in the JWC.”²¹ In another instance, a Palestinian civil society actor noted that missing information gaps must be informally pieced together due to lack of systematic information on the West Bank.²²

In addition to the informal ways in which information is exchanged, there are notable distinctions between how information reaches each side. While some information is only transmitted one way, other instances of information exchange are transmitted in two-way flows. Instances of one-way flows of information are

characterized by both sides accusing one another of not sharing information. For instance, Israeli officials interviewed accused Palestinian officials of being “reluctant to participate in JWC decisions.”²³ The INPA further stated that they have offered Palestinians information on water flows and treated wastewater flows, but that Palestinians did not offer any data in return (see *Site and Stream Story 3: Wadi Beitunia/Nahal Modi'in*). With regard to information exchange, an INPA representative interviewed also stated that, “[Palestinians] take what they can and don’t give anything back.”²⁴ On the other hand, Palestinians interviewed accused Israeli officials of hiding information for security reasons.²⁵ Despite these discrepancies, two-way flows of information do exist outside of the government between civil society actors. The AIES and HWE partnership is one example of a working two-way flow, where both organizations set up meetings to discuss ideas on projects throughout the year.

Findings

This section’s analysis of the opportunities and barriers to environmental peacebuilding through information exchange are reflected in the following four insights.

Information Sharing Can Build Certainty

Theory and experience indicate that information sharing has the potential to build certainty, and thus reduce analytic and strategic uncertainty in cooperative efforts. Our research revealed that both kinds of uncertainties are less prevalent within the civil society realm. For instance, AIES and PWEg overcome analytic uncertainty by engaging in open communication with one another. Still, both must share similar viewpoints on the harmful effects of environmental problems, such as the pollution of the Mountain Aquifer, in order to successfully implement wastewater treatment projects. EcoPeace, another civil society actor, also reduces strategic uncertainty by gathering local mayors from Jordan, Israel, and Palestine to work together and voice preferenc-

es on cooperative projects such as the Jordan Valley Master Plan.²⁶ Despite these instances, we did not observe enough instances of information sharing among official administrative actors, such as the PWA and IWA, during our research to adequately assess if the sharing of information has diminished any type of strategic or analytic uncertainty.

Information Sharing Can Create Tension

As noted within this section, there are instances in which information sharing can result in greater tension and distrust rather than in the creation of opportunities for peacebuilding. The current situation within the region seems to support this argument, as inconsistencies in baseline data exchanged between Israelis and Palestinians have amplified tensions. During an interview at the PWA, one official indicated there is no joint monitoring mechanism for data collection, and, as such, no means to verify the accuracy of existing data. The official called for an agreement on baseline data from both sides, so as to avoid being “tied up debating the yield of a stream.”²⁷

During a visit to EcoPeace, a staff member discussed the difficulties of serving as a third party in transboundary cooperation initiatives and provided, as an example, the different measurements for water readings produced by Israelis and Palestinians. The staff member noted that whereas Israelis recorded that Palestinians consumed 120 liters of water per day, Palestinians stated that they had only consumed 90 liters per day.²⁸ These inconsistencies in information sharing serve to further obstruct the implementation process of crucial water projects.

Information Sharing Occurs Through Better Sharing At Lower Levels

Similar to findings presented in existing literature, much of the information that is exchanged over transboundary water projects appears to take place at the technical and civil society levels rather than at the governmental level. As mentioned before, PWEg and AIES exchange staff experts,

as well as share information with international third-party organizations and actors such as US-AID and the German KfW Development Bank. Of information that is shared at the governmental level, such exchanges are not made public. A representative from the Israeli Ministry of Regional Cooperation (MRC) indicated there were no difficulties in sharing information between the two sides; however, when asked why instances of cooperation were not well known, the representative stated that, “we don’t publish them, we don’t want to put people at risk.”²⁹ This bleak situation raises the question of what it will take for information sharing to occur more frequently on the administrative level. One official at the PWA stated that such exchanges would not take place without a political solution, though they did not specify what that political solution would look like.³⁰

Power Asymmetries Can Stifle Information Sharing

Power asymmetries serve as a significant barrier to engaging in transboundary information exchange, and can, thus, negatively affect the prospects for environmental peacebuilding through cooperative wastewater initiatives. As Zeitoun notes, Israel displays power over Palestine by withholding information.³¹ During our discussions with Israeli actors, such as the INPA, Palestinians were also accused of withholding information.³² However, there is a notable difference in the power that the two sides hold. This difference is most apparent in the way in which decisions are made within the JWC. Israel’s power is systematically supported, as Israel has the authority to deny Palestinian’s access to Israeli water information.³³

As noted in the previous year’s report, in addition to administrative power, Israel seems to exercise greater technological power as well.³⁴ Though both Palestinians and Israelis possess the capability of advancing their expertise in water technology, it is Israel who possesses the actual capacity to do so. The Israeli water industry is considered “a world leader” in the arena of water technology, with advancements such as those in areas of desalination and water security.³⁵ With such pow-

er, Israel is also better able to distribute its technological knowledge to wider audiences. In 2012, it was reported that the twenty largest Israeli water technologies accounted for had \$1 billion dollars in exports.³⁶

In order for information sharing to serve as a pathway toward peace, it must allow for both parties to contribute as equals and have equal access to information. From our observations, it seems equal sharing of information is taking place among civil society actors and technical experts. Despite this, there is still a lack of acknowledgment regarding the mutual benefits of information exchange among those in the governmental level. This suggests that power asymmetries continue to override attempts toward progress.

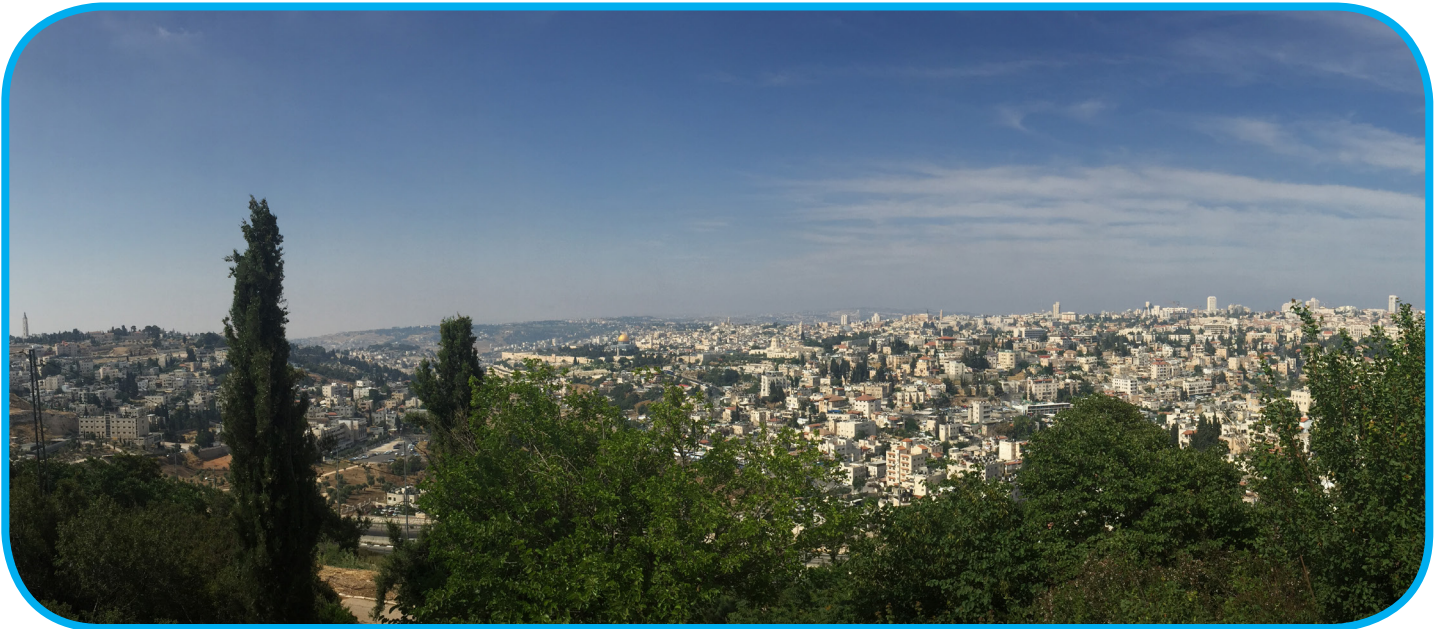
Assessment of PWEG and AIES

From these findings, the following assessment provides insight into how AIES and PWEG can adequately address the challenges to information sharing within the realm of environmental peacebuilding.

Both PWEG and AIES have unique skill sets that can contribute to the advancement of transboundary water initiatives. For example, PWEG’s access to social capital within Palestinian villages allows it to easily navigate Palestinian society. AIES, on the other hand, is able to access to a wide range of funding that is needed in order to implement joint water projects. Together, the two organizations maintain a partnership that is mutually beneficial and equally based. Given that information exchanged on the governmental level is less prevalent as compared to information exchanged between PWEG and AIES, the latter organizations should seek out means by which to encourage greater information sharing on the governmental level. In doing so, there is more opportunity for power asymmetries between government actors to subside. Expansion of information sharing practices will prove beneficial not only for the Palestinian-Israeli community, but also for continued progress of PWEG and AIES’s cooperative projects.

Given these insights, next steps for PWEG and AIES should primarily focus on expanding their network within the civil society realm, and particularly, on expanding their information sharing with other organizations within civil society. Currently, information sharing between different organizations is limited, partly due to competition for funding among civil society actors.³⁷ However, shifting focus away from competition and toward

cooperatively acquiring quality data can help generate a more stable, accessible pool of information. Such a network can, in turn, demonstrate the benefits garnered from increased information sharing practices and, thus, serve as a model for those in the governmental level to mirror. Specific guidelines for doing so are detailed within the recommendations provided in the final section of this report (see Section 4.2 *Recommendations*).



View of Jerusalem, Mount Scopus

Photo Credit: Julia Chalphin

SITE AND STREAM STORY 3: WADI BEITUNIA/NAHAL MODI'IN

Background

Situated in a field separating the Palestinian town of Beitunia and the Israeli Ofer Military Base and Prison, the Beitunia/Modi'in stream serves as an additional reminder of the divide between Palestinian and Israeli spaces, highlighting the toxic physical and imaginary boundaries that continue to segment the occupied West Bank. In this context, the odorous stream, which is polluted by sewage from both Israeli and Palestinian sources, illustrates that although Palestinians and Israelis may share responsibility for environmental degradation, joint efforts to resolve it have taken a backseat to considerations regarding the conflict.

Obstacles and Opportunities

Many opportunities to address wastewater flows in the Beitunia/Modi'in stream exist, including: 1) treating the flows at their sources at the Ofer facility and at the Ramallah WWTP – a large-scale, centralized plant that is currently unable to treat all of the wastewater it receives; 2) constructing a plant in Beitunia; or 3) pumping sewage to another facility.³⁸ Despite these opportunities, issues common to wastewater treatment in the occupied West Bank continue to pose obstacles. Such issues include fragmented territorial control, power differentials, the securitization of water, the politics of the conflict, symbolism associated with cooperation, and an unwillingness to share information.

Fragmented territorial control in Beitunia and the Ofer facility area, which lies in Areas A, B, and C, has limited prospects to treat the flows polluting the Beitunia/Modi'in stream. For example, although the JWC granted approval in 2008, construction of a Beitunia WWTP in Area C is still awaiting approval from the Israeli Civil Administration. The Civil Administration began reviewing

the plans in 2011, yet, to date, there have been no reports of progress regarding the approval or the construction of the plant.^{39 40}

Inherent power imbalances, the securitization of water, and political considerations have further inhibited treatment efforts. For example, before reviewing the Beitunia WWTP, and in a manner representative of the pre-emptive power that Israeli authorities hold over Palestinian plans, the Civil Administration placed certain conditions on its consideration. Of those conditions – and perhaps most importantly – was a request that the plans consider the “possibility of connecting the



Wadi Beitunia/Nahal Modi'in
Photo Credit Andrew Conca-Cheng

community of Beit Horon [a nearby Israeli settlement] to the plant.”⁴¹ Although not unheard of (discussions regarding the connection of the Palestinian al-Birah WWTP to the Psagot settlement, and the Hebron WWTP to the Kiryat Arba settlement have also occurred), this request is viewed by Palestinians as unthinkable given the political implications and symbolism associated with connecting Palestinian services to Israeli settlements, particularly in terms of legitimizing the occupation.⁴² Meanwhile, Israeli construction of a sewage pumping station to transfer wastewater from the Ofer Base to the Sorek

WWTP in West Jerusalem is currently underway, albeit four years after plans to seek a solution were originally announced.⁴³

Highlighting the power imbalance that characterizes Israeli-Palestinian efforts regarding wastewater issues is the fact that wastewater from the Ramallah WWTP does not naturally flow to the Beitunia/Modi'in. In fact, it once ran south to populated areas such as Giv'at Ze'ev (an Israeli West Bank settlement), where it posed a major public health risk. Only after the 2008 installation of a diversion pipe, funded by an Israeli-German project, did the flow begin to infiltrate the Beitunia/Modi'in stream, polluting the area outside of the Palestinian town. Whether the Palestinian authorities approved the construction of the pipe, and if so, under what conditions, remains unclear.⁴⁴

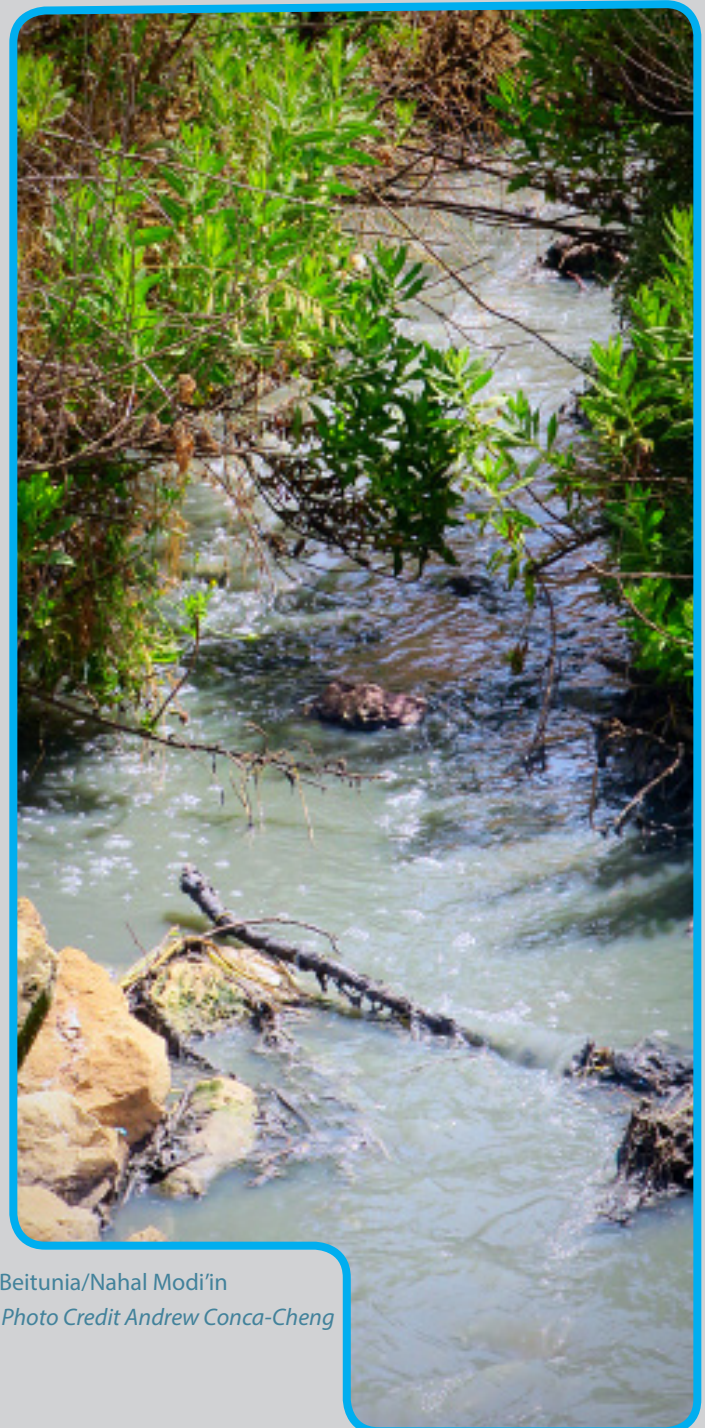
Despite maintaining the ability to divert wastewater from Ramallah and Ofer through potentially unilateral actions, political and financial realities still make it nearly impossible for Israel to actually treat diverted wastewater flowing into Israel. Issues related to water rights and agreements, differences in water quality affecting treatment processes, and questions over whom to tax for treatment, as well as to whom treated wastewater belongs, all contribute to those political obstacles. Combined, these issues make treatment at the source of each wastewater flow – in Ramallah and at the Ofer facility – a more attractive, yet still difficult option.⁴⁵

Moving Forward and Additional Obstacles

For now, in the absence of a concrete wastewater treatment plan, monitoring and assessing the Beitunia/Modi'in flow's environmental impact continues. However, according to employees from the Israel Nature and Parks Authority (INPA), even cooperation over sampling and evaluation remains a difficult task, limiting their ability to accurately assess current realities and future prospects for the stream. Although they acknowledge there is some information the Israelis cannot share due to security concerns,

one INPA interviewee noted that when Israelis provide their Palestinian counterparts with data about flows and mapping, they receive no information from Palestinians in return.⁴⁶

Still, despite the seeming impossibility of a solution in the current context, an interviewee from the INPA did express hope that cooperation on transboundary wastewater issues would occur in the future, communicating that, “we’ll have to work with one another... we have no choice.”⁴⁷



Beitunia/Nahal Modi'in
Photo Credit Andrew Conca-Cheng

Section 2.3 Notes

1 Alexander Carius, "Environmental Peacebuilding, Environmental Cooperation as an Instrument of Crisis Prevention and Peacebuilding: Conditions for Success and Constraints," (Paper Submitted to the Conference on the Human Dimensions of Global Environmental Change, Berlin, October 2006), 11.

2 Ken Conca and Jennifer Wallace, "Environment and Peacebuilding in War-Torn Societies: Lessons from the UN Environment Program," *Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding* (London: Earthscan, 2012), 492.

3 Carius, "Environmental Cooperation as an Instrument of Crisis Prevention and Peacebuilding," 12.

4 USAID, "Water and Conflict: A Toolkit for Programming," (Washington, DC: USAID, 2014), 6-7.

5 Ken Conca, "Environmental Cooperation and International Peace," 230-231.

6 Ibid.

7 Ibid.

8 Conca and Wallace, "Environment and Peacebuilding in War-Torn Societies," 494.

9 Carius, "Environmental Cooperation as an Instrument of Crisis Prevention and Peacebuilding," 8.

10 Ibid.

11 Ken Conca, "Environmental Cooperation and International Peace," 232.

12 Carius, "Environmental Cooperation as an Instrument of Crisis Prevention and Peacebuilding," 13.

13 Ibid, 19-20.

14 Though Carius does not view cooperation on the political level, it is important to note that instances of cooperation do occur on this level. Regional Water Data Banks project, which allows for the exchange of transboundary water data between technical experts, is an official project on the political level. What is notable is that there are far fewer instances of cooperation on the political level than compared to the technical and local level.

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16 Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Israeli-Palestinian Water Conflict* (New York, NY: I.B. Tauris, 2008), 102.

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19 Interviewee 48, Interview by AU Practicum Team, Israel, June 2015.

20 Interviewee 21, Interview by AU Practicum Team, West Bank, June 2015.

21 Interviewee 22, Interview by AU Practicum Team, West Bank, June 2015.

22 Interviewee 2, Interview by AU Practicum Team, West Bank, June 2015.

23 Interviewee, 48, Interview by AU Practicum Team, Israel, June 2015.

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25 Interviewee 19, Interview by AU Practicum Team, West Bank, June 2015.

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27 Interviewee 22, Interview by AU Practicum Team, West Bank, June 2015.

28 Interviewee 36, Interview by AU Practicum Team, West Bank, June 2015.

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38 Palestinian Water Authority, *Annual Water Status Report 2011* (Al-Bireh: State of Palestine, 2012).

39 State of Israel, *Measures Taken by Israel in Support of Developing the Palestinian Economy and Socio-Economic Structure*. Report of the Government of Israel to the Ad Hoc Liaison Committee (Brussels: State of Israel, 2011), 23-25.

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42 For more information on instances involving Israeli requests that wastewater treatment plants in the West Bank be connected to settlements, see: Eric Abitbol, "Hydropolitical Peacebuilding: Israeli-Palestinian Water Relations and Transformation of Asymmetric Conflict in the Middle East" (PhD diss., University of Bradford, 2013), 228-236. See also: House of Water & Environment, *Understanding and Analyzing the Current Israeli Wastewater Practices for Transboundary Wastewater Management from Palestinian* (Ramallah: House of Water & Environment, 2012), 60-61.

43 Interviewee 34, Interview by AU Practicum Team, West Bank, July 2015.

44 Ibid.

45 Interviewee 34, Interview by AU Practicum Team, West Bank, July 2015. For more information regarding issues pertaining to payment for wastewater treatment carried out on Israeli-Palestinian transboundary flows, see: Adam Schalimtzek and Itay Fischhendler, "Dividing the Cost Burden of Environmental Services: The Israeli-Palestinian Wastewater Regime," *Environmental Politics* 18, no. 4 (2009).

46 Interviewee 34, Interview by AU Practicum Team, West Bank, July 2015.

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2.4 SUSTAINING AND BUILDING LIVELIHOODS

Introduction

A livelihood encompasses “the capabilities, assets (including both material and social resources), and activities required for a means of living. A sustainable livelihood is one that can cope with and recover from stresses and shocks, or enhance its capabilities and assets” without damaging the natural resources base.¹ In addition to providing material support, livelihoods also provide a sense of identity, contribute to the confidence and resiliency of individuals, build communities, and forge cooperation.² Given the preceding information, this section assesses the ability of cooperative wastewater initiatives to enhance livelihoods, particularly agricultural livelihoods in the West Bank. This section begins by considering the role of livelihoods within the Israeli-Palestinian conflict itself before considering the ways in which wastewater treatment projects have impacted them, with specific emphasis on the prospect of increasing their impact in the future.

Conflict, Livelihoods, and Peacebuilding

While conflict does impact livelihoods, the extent of this impact varies, as conflict can enhance, have little to no effect, undermine, or even cause one to lose their livelihood. In conflicts with power imbalances, there is a greater chance that the livelihoods of the more vulnerable population will be undermined or even lost. Moreover, history has repeatedly shown that conflicts destroy or alter the natural resources and infrastructure on which many livelihoods depend.³

Losing one’s livelihood has numerous implications, including prolonging the conflict.⁴ Confronted with the loss of one’s means to survive, many individuals may turn to illicit activities or engage in unsustainable livelihood activities.⁵ While research suggests that water scarcity around the world does not result in war, there is evidence supporting the argument that water scarcity during times of conflict can be used to under-

mine and destroy the livelihoods of opposing parties. In addition, resource-based livelihoods are closely intertwined with social and cultural identity, and are central features of self-determination movements. This is especially true in the context of the Israeli-Palestinian conflict.

At the core of this conflict is the question of land ownership. The narratives of Zionism and Palestinian nationalism both lay claim to the same land, with each emphasizing their own respective history of cultivating the land as a defining feature of their identity. The rhetoric of Palestinian self-determination often emphasizes agriculture as “tied to the people’s history, identity, and self-expression.”⁶ Losing the ability to fulfill this role can correspond to a loss of identity, and to a sense of inferiority if one is unable to provide for their family. Combined, these factors may push individuals to seek out revenge and to participate in violent activities. Hence, the formation and stabilization of sustainable livelihoods is a crucial component in peacebuilding.⁷ Incorporating livelihood development into peacebuilding can “strengthen food security, provide employment, help integrate ex-combatants and other vulnerable groups, and offer opportunities for cooperation between formerly warring groups.”⁸

Water, Agriculture, and Livelihoods in the Israeli-Palestinian Conflict

Ownership of land and access to water has been at the forefront of the Israeli-Palestinian conflict. In the aftermath of the failed Oslo Accords, over 60% of Palestinian land in the West Bank was designated as Area C, falling under complete Israeli administrative and military control.⁹ This was particularly devastating to agricultural livelihoods, as the majority of fertile land in the West Bank is located within this area. Israel further impacts Palestinian freedom through a complex “matrix of control,” including, but not limited to, checkpoints, permit requirements, and settlement construction.¹⁰ These policies restrict Palestinians’ mobility, threaten their security, and

limit their access to critical natural resources. This “crisis of human dignity” undermines Palestinian livelihoods through the appropriation of land and control of water sources.¹¹

The degradation and confiscation of land and water in the West Bank has led to the decline of agricultural livelihoods. An estimated 200,000 Palestinians in the West Bank rely on local resources for water.¹² They live in villages that have never been connected to a water network. As a result of the Israeli occupation, they also no longer have autonomous control over their local sources of water. Many Palestinians are subsequently forced to rely on tanked water, which can cost 25 NIS per cubic meter – more than five times the cost of water from the network.^{13 14} Continued construction of illegal Israeli settlements in the West Bank, specifically, has increasingly limited Palestinian’s access to springs, which are the single largest water source for irrigation in the West Bank.¹⁵ By limiting or denying access to these springs, Palestinians are unable to cultivate their fields, and farmers either cope with the reduced crop productivity or stop cultivating crops altogether.

Israel also restricts the development of Palestinian water infrastructure and, as a result, prevents the existence of sustainable Palestinian communities, particularly in Area C.¹⁶ By controlling water sources Israel is able to impede economic growth in Palestine. Furthermore, by gradually reducing the ability of Palestinians to support themselves and their families, Israel has, in some instances, even driven Palestinians off their land.

Findings

Various Palestinians echoed the criticism that Israel harasses Palestinians and causes great hardship in their daily lives in an attempt to weaken their resiliency until they abandon their land.^{17 18} An employee at EcoPeace in Al ‘Auja, in particular, noted the frustration that many Palestinians feel when looking at the lush Israeli settlements with palm trees that surround dry Palestinian fields, especially given that restricted water access has

contributed to a sparse job market, forcing many to work in Israeli settlements in order to earn an income.¹⁹ In a meeting with the PWA, Palestinian officials further explained that many Palestinians who work in Israeli settlements would leave to work elsewhere, even if that implied a significant decrease in pay; however, there are currently no jobs available to employ those Palestinians.²⁰ It is also important to note that many of the Palestinians interviewed suggested that the PWA had an urban bias in its development efforts. This means that by neglecting rural livelihood development, the PWA is increasing the likelihood that Palestinians in rural areas will turn to working in Israeli settlements for income.

For Palestinians, and particularly those residing in rural areas, agriculture provides an income, but more importantly, it comprises an integral part of their cultural identity.²¹ When Israel’s policies destroy or discourage cultivation, they break the connection Palestinians have with their land. Despite this, for some Palestinian farmers, continuing to cultivate their fields in the face of immense risk signifies an act of resistance and a display of resilience.^{22 23} Providing additional water sources for irrigation contributes to the steadfastness of Palestinian farmers, which allows them to farm for resistance, to demonstrate their resolve to stay on their land, and to establish their parity as actors in the conflict.



View of Atouf farmers’ confiscated fields and an Israeli settlement separated from behind a barrier made of dirt constructed by Israelis. Photo Credit: Kady Pecorella

The potential for transboundary wastewater initiatives to contribute to resilience and, thus, to create a pathway to peace through establishing the parity of both parties, can also serve as a strong response to potential accusations that the projects are indicative of “normalization.” In a meeting with the PWA, an advisor to the Water Minister reiterated the idea that Palestinian resilience can be strengthened by making water available through projects that aim to provide treated gray wastewater as a source of irrigation.²⁴ This is especially true in rural areas with high levels of poverty.

While visiting the small village of ‘Atouf, we encountered local farmers whose homes and agricultural fields were located in Area C (see *Site and Stream Story 5: Khirbet ‘Atouf*). As a result of Israeli military laws, a majority of the farmers’ fields have been confiscated, and access to them blocked by physical land barriers, with, as those we interviewed noted, the remaining crops frequently ruined during Israeli military drills.²⁵ The impact of the conflict is even more pronounced when standing in the fields of ‘Atouf and viewing the nearby Israeli settlement and military base, both of which sit atop lush hilltops on what formerly comprised Palestinian farm land.

One farmer we interviewed lost both sons as a result of the occupation, and has twice witnessed Israeli soldiers demolish his home.

However, despite these seemingly insurmountable hardships, he continues to rebuild his home and stay on his land.²⁶ When asked what would happen if his home was demolished again, he simply replied, “then I will build it again.”²⁷

PWEG recently completed a project rehabilitating a cistern on the farmer’s property. As a result, the cistern will hold water during the winter months so that his family will have access to a larger quantity of safe drinking water in the arid summer. When asked how this water project affects him, other than increasing his access to water, he indicated that the project contributes to his steadfastness and determination to stay.²⁸ Thus, PWEG’s project ultimately relieved some of the burdens endured by the farmer’s family and fortified their steadfastness, enabling them to remain on and continue to cultivate their land in defiance of the occupation.

In a majority of the meetings we had with Palestinians across the West Bank, the main goal or appeal of using treated gray water for irrigation lay in its potential to assert Palestinians’ connection with their land by creating livelihoods and alleviating high levels of unemployment. While beneficiaries benefitted economically from these projects given increased incomes and lowered water-related expenses, an additional benefit was also realized. By contributing to Palestinian livelihoods, and by re-establishing Palestinians’ connection to their land, these wastewater initiatives contribute to Palestinians’ resilience and provide them with an improved ability to stay on their land.



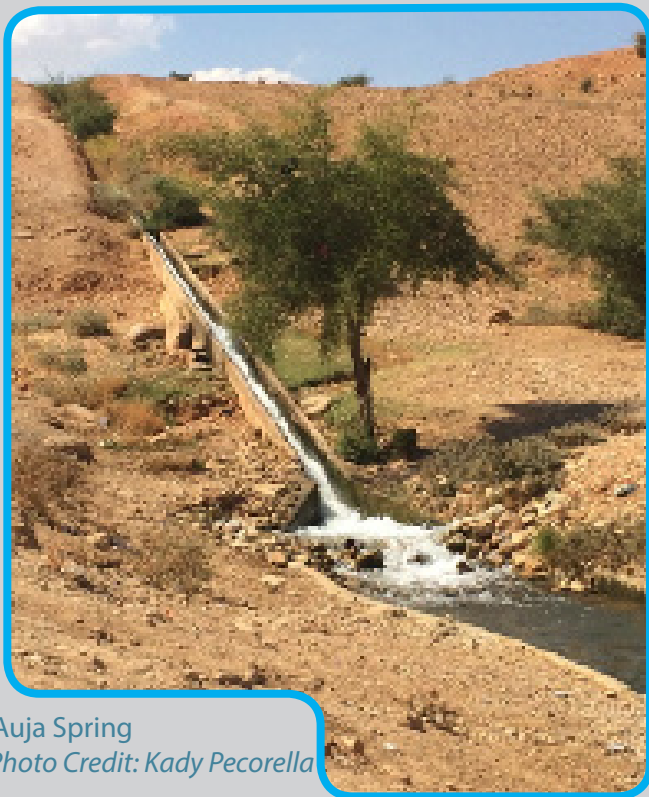
View of Atouf farmers’ and an Israeli settlement

Photo Credit: Julia Chalphin

SITE AND STREAM STORY 4: AL ‘AUJA

Background

The ‘Auja spring, located near the Palestinian community of Al’ Auja and the Israeli settlement of Yitav, was once one of the largest springs in the Jordan Valley, and even served as the main source of irrigation for farmers’ fields in the region. The ‘Auja spring flowed year-round, at one point discharging over 9 million cubic meters of water per year.²⁹ Since the late 1980s, however, the spring’s flow has been rapidly decreasing, which has led to a severe shortage of water in the Al ‘Auja community. Water from the ‘Auja spring only flowed for ninety days in 2009, and just sixteen days in 2011.³⁰



‘Auja Spring
Photo Credit: Kady Pecorella

As the supply of water has decreased, so, too, has the quality of water in Al ‘Auja. Without a sufficient recharge source from rainfall or surface water runoff, and with continued extraction from the shallow aquifers,³¹ the community’s groundwater has become increasingly saline, rendering it unsuitable for either domestic or agricultural use. Moreover, in the absence of a formal sewage network, residents mainly dis-

pose of household wastewater in cesspits. As many of these cesspits are unlined, they allow wastewater to seep into the ground, polluting the groundwater and furthering environmental degradation in the West Bank (for further information on cesspits, see Section 1.8 *PWEG and AIES Wastewater Initiatives*).³²

There have been numerous efforts by PWEG, AIES, and EcoPeace to address Al ‘Auja’s water crisis, including implementing decentralized household gray wastewater treatment systems. However, a joint solution to co-manage the ‘Auja spring has yet to be realized. The fate of the ‘Auja spring, and of any efforts to save it, make evident many of the obstacles inherent to the Israeli-Palestinian water issues discussed in this report. These obstacles include: negative implications for local livelihoods, the absence of information sharing, and fragmented territorial control.

Obstacles and Opportunities

The degradation of the ‘Auja spring has contributed to the degradation of local livelihoods. Farmers in Al ‘Auja are predominantly dependent upon the spring for irrigation, given that the only additional sources of irrigation in the community of Al ‘Auja are twenty-one private artesian wells that were dug during the Jordanian era of rule. Only seven of those wells still function.³³ As a result, the water crisis has severely damaged the agriculture-based economy and threatened the existence of agricultural livelihoods,³⁴ which has, in turn, contributed to the town’s 40% unemployment rate.³⁵ This loss of livelihoods contributes to the deterioration of Palestinian identity and resilience in Al ‘Auja (for more on the connection between livelihoods, identity, and resilience see Section 2.4 *Sustaining and Building Livelihoods*).

Rather than focusing on shared solutions to this water crisis, Israelis and Palestinians condemn each other for the disappearance of the spring, even though both have dug wells that extract water from the shallow and deep aquifers under the spring. Israelis blame the shallow wells dug by Palestinians for drying out the spring, and Palestinians blame the Israeli national water company, Mekorot, for over-extraction from the deep aquifer, causing the shallow aquifer to drain, and, thus, reducing the supply of water.³⁶

Treating the spring as a source of water over which Palestinians and Israelis compete prevents any real progress in addressing Al 'Auja's water crisis.³⁷ Joint efforts focused on identifying the cause of the spring's collapse, and on developing sustainable solutions to rehabilitate it, can, in turn, benefit both Israeli and Palestinian communities. However, instead of sharing responsibility for this mutually-held resource, Israelis and Palestinians focus on condemning each other for Al 'Auja's water crisis, while withholding information and data and pursuing unilateral solutions.

Regardless of whether or not over-pumping is part of the problem, the water crisis and subsequent shrinking of Al 'Auja's agricultural economy can also be attributed to the construction and expansion of Israeli settlements, as well as to Israeli restrictions on Palestinian access to land and water. Following the Oslo II Interim Agreement in 1995, 15.5% of Al 'Auja's land was designated Area A, and the remaining 84.5% (composed mainly of agricultural fields) was designated Area C.³⁸ Furthermore, approximately 2,257 dunums were confiscated from Al 'Auja to build illegal Israeli settlements, roads, and an Israeli military base.^{39 40} This confiscation and fragmentation of territory has contributed to inequitable

access to water between Israeli settlers and the Palestinians residing in Al 'Auja. For instance, in 2008, members of the nearby Yitav settlement were allocated four times the amount of water than were residents of Al 'Auja, even though Al 'Auja's population was more than twenty times that of Yitav.⁴¹



Household decentralized wastewater treatment system in the backyard of an Al 'Auja residence.
Photo Credit: Kady Pecorella

Despite these obstacles, there exist opportunities for Israelis and Palestinians to work together to alleviate 'Auja's water crisis. PWEg, in partnership with AIES, proposed an initiative to address both the problems of water scarcity and wastewater pollution by installing small-scale wastewater treatment systems in

individual Al 'Auja households. These systems treat household gray water to a high enough quality to irrigate agriculture. EcoPeace, has also worked to set up several household gray water systems in the community.

Rejecting the Status Quo

The deterioration of the 'Auja spring and subsequent stifling of Al 'Auja's economy is reflective of the inequality and injustice inherent in Israel's occupation of the West Bank. Palestinians are forced to contend with the loss of water and livelihoods while Israeli settlers benefit from a bountiful supply of water. In a context riddled with inequality, the efforts of PWEg and AIES, in addition to those of EcoPeace, are symbolic of the mutual resistance of such organizations to accept the status quo imposed by the occupation and the divisive politics that often vilify Israeli-Palestinian collaborative efforts.

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2.5 GENDER AND RURAL DEVELOPMENT

Introduction

Differences in the lived experiences of men and women suggest that the needs and knowledge of men and women differ as well. In order to address the diverse experiences, needs, and interests of all key stakeholders, a comprehensive analysis that responds to these differences must be incorporated in any peacebuilding or development project, including cooperative wastewater treatment initiatives. In particular, analyzing gender in peacebuilding initiatives ensures that an examination of the roles men and women are expected to play in society and the power dynamics between these roles will be conducted. The results of such an examination can then be strategically incorporated into projects during the planning phase to not only ensure that the implementation of projects will avoid perpetuating existing gender inequalities, but also ensure that those projects will actively contribute to the promotion of gender parity.¹

As revealed throughout our interviews in the West Bank, there is no single narrative describing the Palestinian experience of occupation, as the occupation can manifest itself in economic, psychological, or physical forms. One's personal experience of the occupation is further influenced by a variety of social factors. In particular, men and women in the West Bank experience a different kind of occupation. Thus, identifying and responding to the distinct hardships experienced by men and women, as well as better understanding their unique and innovative coping mechanisms, is crucial in designing successful and sustainable wastewater initiatives that can foster the conditions necessary for peacebuilding.

This section will build upon the gender analyses of the 2013 and 2014 AU Practicum Team by focusing, specifically, on an analysis of gender in rural development. In particular, this section argues that it is necessary to avoid solely classifying women as beneficiaries with unique needs.

Instead, it is necessary to recognize women as both active participants in the agricultural economy and “key repositories of information” whose knowledge can improve the success of wastewater initiatives.²

Gender in the West Bank

In the West Bank, Palestinian women are recognized as the heads of the domestic sphere, with responsibilities ranging from cooking and cleaning, to ensuring the well-being of the family. In addition, rural women are often responsible for working in the fields, processing large amounts of crops, keeping household gardens, and securing water when piped water is unavailable.³ Thus, as its primary users, women are often viewed as water managers.

Living in a geopolitical milieu where water availability is tied not only to drought patterns in an arid climate, but also to conflict-related scarcity, Palestinian women are adept at using innovative methods to conserve and reuse water so as to guarantee the survival of their families.^{4 5} Furthermore, violent conflict often disrupts social norms, such as gender roles, resulting in both beneficial and harmful outcomes in the frequently prolonged, fragile post-conflict period. Often, women must step in to fill roles during conflict that were previously unavailable to them. This can grant them more agency and influence in the public sphere, and simultaneously burden them with additional and often unpaid labor.⁶

In Palestinian society it was, and generally still is, although to a lesser degree, customary for men to provide financial support for the household while the women are tasked with running the household.⁷ However, in the aftermath of the Second Intifada in 2000, restrictions on Palestinians' daily lives increased significantly, sending the economy into a downward spiral.⁸ Production in the occupied Palestinian territories deteriorated, and the Israeli market for Palestinian labor shrunk. Combined with the loss of agricultural jobs due

to the confiscation of Palestinian fields and water scarcity, these factors contributed to a sharp decrease in male participation in the labor force.⁹ As a result, women began to assume a greater role as financial providers in order to meet the needs of their households in the conflict-stifled economy of the West Bank. The number of women holding formal and informal jobs has particularly increased in the West Bank's agricultural sector,¹⁰ where many women work without pay on their family's land, or in low-income-generating positions.¹¹ However, because it is considered inappropriate for women to participate in traditionally male-dominated work, they are limited in their ability to advance their own economic endeavors.¹²

Gender and Wastewater Treatment

Despite the increased presence of women in agriculture, the wastewater initiatives and projects we visited during the field research portion of this study lack any formal and thorough gender analysis. Interviews with EcoPeace in Al 'Auja, and with PWEg, suggest that both organizations are working toward increasing their ability to identify and respond to the specific needs of female participants. Despite this, however, women are still mainly viewed as project beneficiaries rather

than as knowledgeable decision-makers who can improve and inform the planning and implementation of wastewater projects.

Failure to target women in the training and technical aspects of these wastewater treatment systems prevents women from reaping benefits and from possibly engaging in their own income-generating activities. Such failure is rooted in simple, static assumptions about gender roles in a highly fluid setting, where roles are additionally influenced by a myriad of factors, including economic status, level of education, or changing personal preferences. For instance, while living in a conflict setting, Palestinian women are actively engaged in their communities by mobilizing against the occupation, forming charitable organizations, and working to promote the welfare of women and families. In many communities, rural and urban alike, there are formal women's associations dedicated to not only the welfare of women, but also to the community at large. Given Palestinian women's rich history in community development, failing to utilize their relevant skills and capabilities represents a missed opportunity to increase the effectiveness, communal acceptance, and, thus, the peacebuilding significance of projects in wastewater treatment.¹³



The Dead Sea

Photo Credit: Julia Chalphin

SITE AND STREAM STORY 5: KHIRBET ‘ATOUF

Background

Khirbet ‘Atouf is a small village located on the eastern slopes of the West Bank. As there are no nearby sources of surface water, obtaining water is a key concern for ‘Atouf’s 1,260 inhabitants.¹⁴ A sufficient supply of water is especially important given that agriculture and shepherd-ing are the primary livelihoods in the village, and account for 98% of the village’s economic activity.¹⁵

‘Atouf lacks an organized water network, waste-water network, and solid waste management system.¹⁶ As such, villagers are either forced to buy all drinking water from water trucks with questionable sanitation standards,¹⁷ at the price of roughly \$6.62 per cubic meter,¹⁸ or supplement their supply by collecting rainwater in the winter.¹⁹ Villagers also utilize plastic barrels to store water, which pose additional health concerns since these barrels serve as a breeding ground for mosquitos and other disease-transmitting insects.²⁰ Since no internal piping exists within the village, villagers rely on buckets of water for daily washing, cooking, cleaning, and sewage needs.²¹ ‘Atouf residents dispose of wastewater in cesspits, which, like many places in the West Bank, eventually permeates the region’s porous soil and causes groundwater contamination (for more information on cesspits, see Section 1.8 PWEg and AIES Wastewater Initiatives).

These factors contribute to poor water quality and access in the village, creating a precarious public health situation. As expounded upon below, ‘Atouf demonstrates the difficulties rural Palestinians face from the current state of im-balanced power dynamics in land tenure. These power dynamics allow Israel to act in the name of security without acknowledging the security needs of Palestinians. They also directly jeopardize Palestinian villagers’ access to land and indirectly restrict their access to water.

Obstacles and Opportunities

Several obstacles limit ‘Atouf villagers’ access to water and ability to afford potable water. Foremost of these is the division of land into several jurisdictions by the boundary lines of the Oslo-created Areas. Since ‘Atouf’s agricultural fields are located in Area C, which is under full Israeli military and civil control, villagers have limited control of and access to their agricultural fields and irrigation systems.^{22 23}

The construction of an Israeli settlement nearby has further reduced the village’s available arable land. The settlement, which sits on confiscated Palestinian agricultural lands, is partitioned from the village by an ad hoc barrier made from a mound of soil, and distanced by an expanse of open field. The settlement receives support from Israel, including subsidies for agriculture and water, as well as military protection.²⁴ These constraints imposed by Israeli settler and military activity directly affect the livelihoods of ‘Atouf villagers given that ‘Atouf farmers require land for cultivation, and that ‘Atouf shepherds rely on large grazing pastures to sustain their lifestyle (for more information, see Section 2.4 Sustaining and Building Livelihoods).

Furthermore, the same permitting process that limits wastewater infrastructure discussed in other Site and Stream Stories in this report is also the cause of disparity between the water available to the Israeli settlers and the Palestinian residents of ‘Atouf. Although West Bank inhabitants are forbidden from drilling wells of any depth without proper permits,²⁵ Israelis have drilled numerous wells in the area surrounding ‘Atouf to sustain their settlement populations.²⁶ In contrast, one farmer from ‘Atouf is currently awaiting trial in the Israeli court system for drilling a shallow well on his land without first obtaining a permit.²⁷

An additional instance of land insecurity is the intermittent appropriation of the agricultural fields still under the possession of ‘Atouf villagers, which is used as an Israeli military training area for the soldiers in the nearby Israeli military base.²⁸ When military trainings occur, only twenty-four hours’ notice is given to all households within the village, according to interviews conducted with ‘Atouf community members. Residents are then expected to leave their homes during the duration of these exercises, or risk arrest, and accept any monetary losses from crops destroyed during the operation.²⁹ One resident also explained that, in the past, explosives have even been left behind in the agricultural fields. Although unintentional, several injuries and even deaths have ensued.³⁰

Future Prospects

Despite the hardships that they experience on a daily basis, ‘Atouf residents are determined to remain on their land. PWEG works to support the local community in this endeavor through projects that increase access to water and thus address threats to villagers’ livelihoods. For example, PWEG has partnered with the Village Council to construct and rehabilitate existing rainwater, harvest cisterns in the village, and conduct public awareness campaigns on safe usage of cistern water and general water sanitation. PWEG also helps provide farmers with sufficient irrigation pipes to maintain their crops and enable them to cultivate more water intensive crops such as potatoes, which procure a higher price on the market.³¹

PWEG also displays a burgeoning sensitivity to the gendered labor norms of the village. The women’s group in ‘Atouf works independently and in partnership with the mayor’s office to decrease women’s unemployment, increase women’s income, and increase awareness of gender equality.³² As such, surveys conducted by PWEG in ‘Atouf endeavor to facilitate knowledge exchange between the Village Council and women to assess household needs.³³ Workshops are

also conducted by a female PWEG employee who has greater access to women in ‘Atouf than a male counterpart.³⁴

PWEG is also working with the Osprey Foundation to fund projects in ‘Atouf. For instance, Osprey funded PWEG’s comprehensive study on scaling up wastewater treatment in ‘Atouf in a manner similar to the PWEG-AIES’ pilot project system at a residence in Al ‘Auja. For this potential project, PWEG, in partnership with the Osprey Foundation, wants to implement a community-scale decentralized wastewater system to prevent the continual dumping of sewage into wadis throughout the West Bank.³⁵ Such scaling up would result in more villagers reaping the benefits of wastewater treatment, which could also build the community’s resilience and further secure livelihoods of local villagers.³⁶

The story of ‘Atouf demonstrates the link between fragmented authority over land and the many additional facets of the Israeli-Palestinian conflict. Israel’s actions in Area C directly threaten the villagers’ agricultural livelihoods by reducing their access to water and their means to afford water. However, the projects implemented by PWEG have increased villagers’ ability to pursue their livelihoods and contributed to reasserting their resiliency through strengthening their ability to remain on their land.



Agricultural Fields in ‘Atouf
Photo Credit: Kady Pecorella

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2.6 PUBLIC PARTICIPATION

Introduction

The need for public participation in transboundary water management is widely recognized amongst scholars and practitioners in this field.¹² However, because public participation is a vaguely defined concept, there is much disagreement concerning the appropriate methods and intended outcomes of public participation strategies.³ Public participation is one of the central tenets of the Integrated Water Resources Management (IWRM) framework, an emerging paradigm for the governance of transboundary water. The IWRM paradigm promotes watershed-scale management that incorporates stakeholder participation and a consideration of the many different uses of water.⁴ The Global Water Partnership characterizes IWRM as “a process which promotes the coordinated development and management of water, land, and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”⁵ IWRM discourse emphasizes the idea that participatory processes in the planning and management of water resources will lead to decisions that equitably distribute the costs and benefits of development, but stops short of defining exactly how stakeholders should influence the planning and management of water resources.

Sherry Arnstein’s “ladder of participation” is a well-known typology of various forms of public participation, which are qualified based on the level of “citizens’ power in determining the end product” of a decision.⁶ This particular evaluation of public participation strategies is useful if we understand public participation only as an instrument of better decision-making, assuming that the best and most ethical decisions are made when all citizens have the same influence over the decision-making process. While we did find that augmenting citizens’ power can lead to more successful wastewater projects, we also saw that involving stakeholders in the planning,

implementation, and maintenance of wastewater infrastructure can help to achieve a number of different goals, some of which are related to peacebuilding.

Public participation in cooperative wastewater projects can ensure that the trust-building potential of these projects is distributed widely across different members of society. It can serve as a platform for Israelis and Palestinians to engage in dialogue with one another and build relationships. The type of public engagement chosen by decision-makers reflects both the situational constraints and desired outcomes of public participation, as well the peacebuilding significance that the partners attach to projects. The variety of symbolic meanings that frame cooperative wastewater projects will be explored in depth in the following section of the report, but it is important to recognize that these symbolic understandings have a real impact on the ways in which projects are implemented on the ground, especially when it comes to making decisions regarding how to involve the public.

Based on environmental peacebuilding theory and the perspectives of the organizations we observed, we have identified three broad categories of public participation strategies in Israeli and Palestinian wastewater treatment projects in the West Bank: project effectiveness and longevity, trust-building, and justice. In our research, we sought to understand the degree to which public participation strategies in these categories can serve as peacebuilding mechanisms. We then assessed the collaborative projects of AIES and PWEG in order to understand how this partnership is utilizing public participation to accomplish peacebuilding goals.

Project Effectiveness and Longevity

One justification for public participation assumes that the most successful projects involve stakeholders in the planning, implementation, and

maintenance processes. Indeed, a staff member at PWEG emphasized that, “public participation is the most important thing [in wastewater treatment initiatives].” The staff member continued to explain that stakeholders can inform project planning in important ways, and that beneficiaries are key to the maintenance of the project after its implementation.⁷ Staff members at HWE, PWEG, and AIES confirmed that a comprehensive stakeholder consultation process is important in determining the needs and opportunities at potential project sites. Local citizens are thus critical sources of information when conducting needs assessments.⁸

A survey done by AIES found that of all household-scale wastewater treatment projects in the West Bank, 70% do not currently function.⁹ While this figure may reflect a number of different problems, one plausible explanation for such a high rate of failure is that homeowners have not conducted the necessary maintenance tasks required by these systems. Projects are more likely to provide long-term benefits if they are well suited to the needs, constraints, and opportunities of the community in which they are placed. Therefore, involvement in the planning process can help to ensure homeowners are willing and able to perform the maintenance tasks the project requires.^{10 11} Training sessions and workshops can also ensure that homeowners have the skills and knowledge necessary to care for household-scale wastewater treatment systems. Furthermore, as explained by a member of Engineers without Borders, if stakeholders have personally invested their time, labor, and thoughts into the planning of a project, they are more likely to “take ownership” of that project or work to ensure its future success.¹² It is therefore up to the project planners to provide opportunities for stakeholders to engage meaningfully in the decision-making, design, and implementation of projects.

Participatory strategies aimed at increasing project success and longevity are based on an environmental peacebuilding theory that views improved natural resource management as a mechanism for preventing future violence over

natural resources by providing tangible results that improve people’s livelihoods and preserve the integrity of natural ecosystems. Indeed, we observed that successful wastewater treatment plants in the West Bank have produced real benefits to those facing water scarcities and to the natural environment.¹³ The additional treated wastewater households receive as a result of these projects can be used to irrigate plants, alleviating pressure on scarce freshwater resources.

Assessment of AIES and PWEG

For the planning of its wastewater projects, PWEG conducts stakeholder consultations in the planning process through door-to-door surveys, interviews, and home assessments. For AIES’ unilateral projects (in Israel’s Bedouin communities), AIES also conducts surveys and interviews as part of the planning process. Within cooperative projects between AIES and Palestinian organizations PWEG and HWE, the Palestinian organization is responsible for conducting site selection.^{14 15} This approach is a deliberate decision based on the idea that Palestinian organizations based in the West Bank are more familiar with the needs of people living there.¹⁶ They are also likely to have greater access to Palestinian villages and are better able to speak Arabic with potential beneficiaries. Although this is the arrangement for most of the small-scale decentralized wastewater projects, this is not necessarily the case for all AIES projects. For example, the Team accompanied AIES and HWE as they both visited a potential project site at a private community club in West Nablus. While it makes sense in terms of efficiency for Palestinians to handle site selection processes (including stakeholder consultations, needs assessments, and surveys), greater Israeli involvement, to the extent that it is feasible, could create more opportunities for building trust and forming relationships between Israelis and Palestinians.

Trust-building

Several NGOs working on water issues in the West Bank have designed public participation

programs that deliberately create platforms for Palestinians and Israelis to have meaningful and positive interactions with one another.¹⁷ This type of program is sometimes referred to as “people-to-people” peacebuilding. According to USAID, the goal of these initiatives is to “break down the barriers between...groups by re-humanizing the other, fostering empathy and mutual understanding, building trust, and creating relationships.”¹⁸ This strategy is based on the idea that if people from opposing groups are brought together to have a shared experience, then their perspectives of the “other” may begin to shift. The dialogue that is facilitated through cooperation on transboundary water issues provides a platform for speaking to and listening to perspectives from the other. Ashok Subramanian, Bridget Brown, and Aaron Wolf argue that the greatest obstacles to transboundary water management are related to “the perception that an act of cooperation will expose the country to harm, will jeopardize something of value to the country, or will threaten the political future of individual policymakers.”¹⁹ People-to-people participation can help to change people’s perceptions of the risks involved in cooperation. This seems to be a primary focus of USAID-sponsored projects in the West Bank as the organization is committed to strategies that help to enable dialogue between Israelis and Palestinians.²⁰

EcoPeace’s Good Water Neighbors (GWN) project is one of the most well-known examples of people-to-people participation. This project has brought together Jordanians, Israelis, and Palestinians to discuss and learn about transboundary water issues.²¹ According to EcoPeace, “GWN has created real improvement within the water sector by building trust and understanding that has led to common problem solving and peace building among communities even in the midst of conflict.”²² One explanation for the success of this project was the long-term engagement of youths from each country and their involvement in a project that required them to work together to achieve a common goal.

AIES also does a considerable amount of work

on people-to-people engagement, especially through its Peace Environment Leadership Seminar (PELS).²³ All environmental studies students at AIES are required to take the PELS, which creates a safe environment for Israeli, Palestinian, Jordanian, and other international students to discuss issues related to politics, identity, race, and religion. The success of this program is largely due to the safe atmosphere the facilitators create. Conversations with two current AIES interns and one former AIES student revealed that within these safe spaces students are able to bond and feel comfortable sharing their thoughts.^{24 25}

Assessment of AIES and PWEG

Forms of public participation that lead to inter-group trust-building are difficult to incorporate into unilateral wastewater treatment projects since they only involve one group. In their collaborative projects, AIES and PWEG do not formally conduct any people-to-people participation programs. This approach to peacebuilding is not the focus of PWEG, but could be a positive “spillover effect” of cooperation on wastewater development.²⁶ Although PWEG and AIES do not run joint programs explicitly labeled “people-to-people participation,” there is strong evidence that their collaborative work in the West Bank has enabled the growth and strengthening of professional relationships and friendships between Israelis and Palestinians involved in the projects. This was also a key observation in the 2014 AU Practicum Team’s report.²⁷

The relationships formed through PWEG and AIES projects, however, are for the most part limited to people already part of the community involved in wastewater engineering including water engineers and interns and staff members at PWEG, AIES, and related NGOs. We also observed relationships that formed between Israelis and beneficiaries of cooperative pilot projects, who remain involved with AIES, HWE, and PWEG by championing the household level wastewater treatment technology, occasionally welcoming visitors into their backyards to dis-

play their wastewater treatment projects. There are many ways in which AIES and PWEG can work to expand the network of individuals that receive the relationship-building benefits of their cooperative work. By expanding into different sectors, like energy and agriculture, the partners could involve new groups of experts in the parts of their work that are most likely to lead to trust-building.

Justice

The dominant perspectives on environmental peacebuilding argue that the technical nature of environmental issues facilitates transboundary cooperation in conflict environments, which can have positive spillover effects on other spheres of politics more broadly. However, some scholars argue that the link between cooperation and peacebuilding is not entirely clear.²⁸ In a conflict environment, participatory processes that are focused exclusively on the technical aspects of a project or on merely creating contact between individuals from opposing groups run the risk of avoiding the deeper political issues that underlie the conflict.²⁹ One Palestinian participant in people-to-people programs expressed frustration over programs that encourage relationship-building between Israelis and Palestinians, but do not address the vast asymmetries in power that perpetuate the conflict.³⁰

Recognizing that environmental justice is a key component of peacebuilding, some of the strategies employed by the NGOs we observed reflect a desire to change the asymmetrical power structures that govern Israel and the West Bank's water resources.³¹ This approach is based on the idea that many Palestinians in the West Bank are victims of environmental injustice due to limited access to adequate amounts of fresh water and due to a lack of equal power in shared water resource management.

Based on our interviews, we found that several NGOs are working to promote environmental justice by teaching and empowering Palestinians to advocate for their rights and by encouraging Israelis to acknowledge this power. Through en-

vironmental education, EcoPeace helps students from Jordan, Israel, and Palestine to understand the complexities of environmental management and to articulate the causes of environmental injustice.³² This was also a goal of the AIES PELS program.³³

PWEG also uses the discourse of environmental justice to describe their work. However, unlike the ideational empowerment strategies of AIES and EcoPeace, PWEG's projects work to increase institutional and material empowerment of Palestinians in the West Bank. PWEG's focus on tangible benefits is also leveraged to increase government legitimacy, as PWEG always seeks out approval from the PWA for its projects and make significant efforts to involve local mayors throughout the planning process of projects.³⁴ Engaging Palestinian leaders in projects that deliver tangible benefits to the population helps to strengthen the legitimacy and accountability of Palestinian institutions.

Assessment of AIES and PWEG

By installing household-scale wastewater treatment projects in the West Bank, AIES and PWEG have provided economic and public health benefits to Palestinians, helping to reduce the environmental injustices faced by populations in the West Bank. Furthermore, the participatory processes by which they engage Palestinian stakeholders have helped to generate increased awareness of the complexities surrounding the management of water and wastewater amongst these individuals. There may, however, be untapped potential to further educate Israelis citizens about the water-related challenges faced by Palestinians and the political structures that have perpetuated such an inequitable distribution of water. According to Tamar Keinan, although they may be aware that some scarcity exists, few Israelis "are aware of the quantity of water available to Palestinians and Jordanians."³⁵ In the future, AIES and PWEG could use their partnership to create more opportunities for Israelis to understand the complex set of issues surrounding access to water and sanitation in the region.

Conclusion

Public participation can take many forms. In fact, seemingly similar public participation strategies can have different effects with regard to peacebuilding. One of the main findings of this assessment is that the goal of any public participation strategy should be clearly defined before its implementation.

Planners should be cognizant of that goal when planning the event to maximize the peacebuilding benefits it produces. Alexander Carius argues

that public participation can be a “prerequisite for transferring the positive impacts of water cooperation to a wider societal level.” Our research demonstrates that there are many ways in which these positive impacts can be scaled out (see Section 3.1 The AIES-PWEG Partnership Scaling Out for more information). Project effectiveness and longevity, trust building, and justice serve as three useful categories through which to understand the peacebuilding potential of participatory strategies.



Environmental Projects, Al Afaq School, Jerusalem

Photo Credit: Julia Chalphin

SITE AND STREAM STORY 6: WEST NABLUS WASTEWATER TREATMENT PLANT



West Nablus WWTP, Nablus, West Bank

Photo Credit: Julia Chalphin

Background

The city of Nablus and its nearby refugee camps are situated in the Zomar/Alexander Basin and were inhabited by an estimated 170,000 people in 2011.³⁷ Nablus is nestled between the hills of Eibal and the Gerizim Mountains,³⁸ where a stream flows from the east to the west of the city via the Wadi Zomar. After leaving Nablus, the tributary travels through the Palestinian city of Tulkarem, crosses the Green Line³⁹ into Israel (where it is then referred to as the Alexander Stream), and eventually empties into the Mediterranean Sea. As sewage travels downstream through the basin catchment, it seeps into the Mountain Aquifer between Nablus and Tulkarem, contaminating the groundwater.⁴⁰ Although Israel has made efforts to treat the Alexander stream, its success is only partially realized, as much of the pollution originates upstream from sewage, industrial sawmills, tanneries, and olive oil mills in the West Bank.⁴¹

As detailed below, the story of the Nablus/Alexander stream reflects the broader tendency of Israelis and Palestinians to lay claim to contrasting narratives over issues of water management.⁴² In the case of the Nablus WWTP, each side has an explanation for why the plant took so long

to construct, and why its output is not currently used for irrigation, as initially envisioned. Fragmented governance of West Bank land and a power imbalance between Israelis and Palestinians only serve to further exacerbate the problem of addressing transboundary pollution in Israel and Palestine.

Obstacles and Opportunities

Following the Oslo Accords in 1995, the German Technical Cooperation Agency (GTZ) agreed to contribute significant funds to the construction of a WWTP in Nablus and Tulkarem meant to partly alleviate pollution in the Zomar/Alexander Basin. In 1997, the JWC approved construction of the Nablus West WWTP as part of a wider agreement between Israel and Palestine involving jointly planned facilities and the conveyance of West Bank sewage into Israel via pipes for treatment. The treated water from the plant was intended to be portioned out to both sides, with German donors taking care of the plant's construction costs.⁴³

Unfortunately, due to several difficulties, many of the intended benefits of Nablus WWTP have

yet to be fully realized. First, within the JWC, Israel disputed suggestions made by the Palestinian Authority regarding the WWTP location, while the Palestinian Authority objected to Israel's initial desire for the project to also serve Israeli settlements. These challenges were further complicated following the outbreak of the Second Intifada in 2000, which further delayed implementation of wastewater treatment.⁴⁴

In reference to why there is still difficulty in cooperation over current wastewater management projects, one PWA official claimed that "Israelis like the status quo; they want to keep the status quo."⁴⁵ For the situation in Nablus, maintaining the status quo implies that the Israelis continue to tax the PA for treating the Zomar/Alexander stream's water, while also selling the treated water to Palestinian farmers.⁴⁶ However, Israeli officials interviewed countered this notion, stating that "[the Israelis] sign off on everything"⁴⁷ in the JWC, that polluting the aquifer is not in Israel's self-interest, and that the PWA refuses to emulate Israel's tighter "10/10" quality standard⁴⁸ for wastewater treatment, which they claim the Palestinians are uninterested in paying to implement.⁴⁹

A second difficulty is the geographical division of the West Bank into Areas A, B, and C. Constraints on transactions across these boundary lines has meant a lengthy and contested process over acquiring the permits and access to roads needed for construction of a WWTP. Delays in Nablus largely resulted from there being no paved connection to the land upon which Nablus West WWTP was to be built and the main road nearby. In addition, shipments of materials needed to be approved by the Israeli Civil Administration prior to being transported from Area C into Area A, where the WWTP's land is located, which further slowed construction efforts.⁵⁰ The Nablus West WWTP thereby demonstrates how boundary restrictions dampen ambitions for large-scale, centralized wastewater treatment systems, as construction of

such infrastructure tends to become caught up in the broader politics of the conflict.

Although Nablus West WWTP was approved for construction in 1997, it was not completed until 2014, seventeen years later. This estimated €30 million project has the capacity to treat 12,000 cubic meters of water per day, which was originally intended for use in local agriculture. However, the treated water is currently unused for irrigation because German funders did not insist on it being used for agriculture, and because it is unclear if the Palestinians are able to build transport pipes to farms across the boundaries of Area A, B, and C. Instead, the plant's output is currently released into the Wadi Zomar stream, mixing with untreated water on its way into Israel. After crossing the Green Line, it is treated again to meet Israeli standards, for which the Palestinians are charged a fee of 3 NIS (\$0.75) per cubic meter of treated water.⁵¹ No longer wishing to pay twice for treating the same water, the PWA announced in December 2010 preparations for an "integrated plan" that would allow for the reuse of the treated water, but to date, this has yet to be implemented.⁵²



West Nablus WWTP
Nablus, West Bank
Photo Credit: Julia Chalphin

Section 2.6 Notes

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biochemical oxygen demand (BOD) and 10mg/l of total suspended solids (TSS), or 10/10 for short; whereas the Palestinian standard for effluent disposal is 20mg/l (BOD) and 30mg/l (TSS), or 20/30. Palestinians claim that the Israeli treatment level is too high. For reference: D. Katz and A. Tal, "Rehabilitating Israel's Streams and Rivers," in *Water Policy in Israel: Context, Issues, and Options*, ed. Nir Becker (New York: Springer, 2013), 72.

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2.7 SYMBOLISM AND COOPERATION OVER WASTEWATER

Introduction

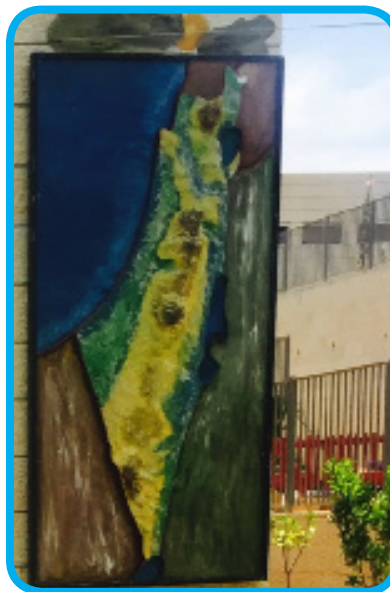
Although environmental peacebuilding theory suggests that there exists an opportunity to build peaceful relations through joint environmental efforts, the true peacebuilding significance of cooperative environmental initiatives is often ambiguous, largely dependent upon the context in which the initiatives are carried out. This is especially so in the case of Israel and Palestine, where – as previous sections of this report, including the Site and Stream Stories, have indicated – power, politics, and inequalities significantly impact environmental peacebuilding efforts.

These complications alone do not negate the peacebuilding significance of cooperative wastewater programs, especially if the cooperative efforts are seen as symbolic of the potential for peace and transformed Israeli-Palestinian relations. Such complications, however, do play a key role in shaping how they are perceived symbolically by the affected populations.

This section of the report examines how cooperation in wastewater initiatives is perceived symbolically by select representatives of the beneficiary, technical, and institutional communities. The purpose of this investigation is to identify whether cooperation in wastewater treatment is perceived as having peacebuilding significance and, thus, to determine the projects' current or future peacebuilding potential.

Data presented in the findings of this section is focused on two tasks. First, it details what cooperation in wastewater treatment symbolizes to different groups of individuals involved in and/or

affected by it. Second, it examines how the symbolism attributed to cooperation over wastewater manifests itself in these individuals' visions of future Israeli-Palestinian relations – that is, for example, whether perceived symbolic meanings associated with peacebuilding correlate with greater hopefulness for expanded Israeli-Palestinian relations in the future. This information is important and useful because it serves to indicate: 1) whether cooperation in wastewater treatment is seen as advancing, obstructing, or having no impact on future peace; and 2) what that future peace might look like. Finally, this section closes with a discussion of key conclusions, as well as their implications on the actual peacebuilding significance of Israeli-Palestinian cooperation in wastewater treatment, particularly in relation to PWEG and AIES' cooperative work.



Mural of Israel and Palestine
Al Afaq School, Jerusalem
Photo Credit: Kateira Aryaeinejad

Symbolism in Peacebuilding and Conflict

Peacebuilding, as conceptualized by John Paul Lederach, must foster the establishment of trust and the development of relationships through long-term initiatives, termed “platforms,” that function as mechanisms for continued engagement and cooperation across societal divisions.¹ Although cooperation on environmental issues offers the opportunity to build platforms, the construction of platforms alone may not be enough to ensure continued engagement, which according to Lederach, is essen-

tial to transform relationships among conflicting parties.² This is especially so if the actions occurring within the platform are not seen by those involved in them or outside of them as building peace.

A key component of conflict transformation is carrying out actions, whether in the form of a handshake or a courageous act of self-sacrifice, that are seen as symbolic of building peace.³ As described by Lisa Schirch, such actions – defined in this section as symbols, or representations of meaning – are powerful, carrying within them the capacity to “penetrate the impenetrable, overwhelm the defensive, and convey complex messages without saying a single word.”⁴

The power of symbolism to define how we see the world and the possibilities within it has important implications for the potential of certain efforts to exact change. Based on the perceptions that define them, symbolic acts – such as resistance in ‘Atouf and in ‘Auja (see *Site and Stream Story 5: Khirbet ‘Atouf* and *Site and Stream Story 4: Al ‘Auja*) – all carry with them implications regarding the future of Israeli-Palestinian relations, the possibility for increased cooperation, and the prospects for environmental protection. Consequently, the potential for cooperative wastewater projects to provide a platform capable of building peace and transforming conflict is predicated, in part, on what the act of cooperation within those projects symbolizes to actors involved in and witness to them.

It is important to recognize, however, that while symbols or actions can be useful in building peace, they can also play a role in perpetuating conflict. Symbols associated with oppression, frustration, or other negative, conflict-motivated sentiments can be just as powerful in prolonging conflict as those associated with peace can be in resolving it. What is more, the symbolism or symbolic meaning – defined here as what larger meaning or significance an individual attaches to a symbol or act beyond the symbolic action itself – that is attributed to actions such as cooperative wastewater treatment varies based on the experiences of those individuals involved in or affected by it. This is because the manner in which symbols are decoded is strongly influenced by individual struggles, identities, hopes, and fears.⁵ To illustrate this point, consider, for example, the act of shaking hands. This

act can symbolize overcoming obstacles and building peace to some, but capitulation and defeat to others based on their past experiences. This dual nature of symbolism implies that even acts meant to signify peace may be perceived negatively as acts perpetuating conflict.

Methodology

In the discussion that follows, major categories of symbolic meaning associated with the symbolic act, or symbol, of Israeli-Palestinian cooperation in wastewater treatment – in both civil society projects and on an intergovernmental level – are presented. Each of these categories is derived from literature on the topic and from data collected during interviews with three different types of actors involved in cooperation over wastewater (see Section 1.1 Methodology for further information on the interviews and information gathering used in this report). These categories include:

1. **Beneficiaries:** This category includes both current and prospective Palestinian households and farmers who already benefit, or may possibly benefit, from cooperative wastewater treatment projects.⁶
2. **Technical Community:** This category includes Israeli and Palestinian NGOs – such as PWE, AIES, HWE, EcoPeace, Engineers without Borders – as well as engineers and professionals working on cooperative wastewater treatment in the civil society and technical sector.
3. **Institutional Actors:** This category includes Palestinian mayors and PWA actors, as well as professionals within and members of Israeli governmental bodies such as the IWA, the MRC, and the INPA. All actors within this category engage in cooperation at the institutional level.

Symbolic Meaning Attributed to Wastewater Projects

Literature on transboundary water issues and interaction with those interviewed during this study’s rapid appraisal revealed seven distinct

categories of symbolic meaning prevalently associated with cooperation in water management.⁷ These categories and their indications include:

- **Peacebuilding:** This category indicates that Israeli-Palestinian cooperation within wastewater treatment signifies the potential for peace and future relations between Palestinians and Israelis. Symbolism associated with peacebuilding implies that such cooperative actions and efforts are helping to transform the perceptions that Israelis and Palestinians have regarding one another, opening up the possibility for building new transboundary relations.
- **Survival and Resistance:** This category suggests that wastewater initiatives and cooperative actions signify an act of resistance and survival amidst ongoing conflict. This symbolic meaning has different connotations based on what an individual perceives he or she is trying to survive or resist. For some, cooperative efforts represented the ability to develop innovative means to work together and affect change despite political realities. For others, such wastewater treatment efforts signified resilience and steadfastness despite the Israeli occupation, as noted in the Sustaining and Building Livelihoods section of this report (see Section 2.4 *Sustaining and Building Livelihoods*). This symbolic meaning attaches importance to wastewater initiatives and cooperative efforts, suggesting that they motivate people to continue working for peace or justice in spite of increasingly difficult, obstructive conditions.⁸
- **Separation of Israel and Palestine:** This category indicates that cooperation in wastewater projects is perceived as building two separate communities and authorities: one Israeli and one Palestinian. The symbolism of separation suggests that cooperation in the projects increases the capacities and independent capabilities of each side, but is not necessarily indicative of the view that cooperative relations will develop beyond the wastewater sphere.
- **Israeli Humanitarianism and Benevolence:** This category embodies the idea that cooperation occurring within transboundary wastewater efforts is representative of the generosity of Israeli partners, who share their water resources or expertise with the Palestinians.⁹
- **Domination and Inequality:** This category represents the idea that wastewater initiatives and cooperative actions, at least in their current state, embody and even perpetuate the stark inequality characterizing relations between the Israelis (often deemed more powerful) and the Palestinians (often deemed weaker), as referenced in the Securitization and Desecuritization of Water section of this report.¹⁰ Those associating this symbolic meaning with cooperation in wastewater initiatives often noted that there is a need to work toward equalizing inherent power differentials among Palestinians and Israelis, but did not necessarily view current cooperative efforts as symbolic of building peace or equalizing power distributions. In this sense, this category integrates the concept of “normalization” to a certain extent, suggesting that cooperative efforts are seen as propagating and legitimizing existing power asymmetries.¹¹ This is because such efforts involve collaboration and normal relations between Palestinians and Israelis despite the ongoing occupation and continued inequalities.
- **Political Obstacles:** This category indicates that cooperation over wastewater is perceived as imbued by and contributing to the impenetrability and expansion of conflict politics in Israel and Palestine. Political realities and considerations, in this sense, are insurmountable obstacles that impede efforts to improve livelihoods, to build Palestine, and to foster cooperation and relationship-building among Israelis and Palestinians.¹² Many articulating this view expressed frustration with the way in which the conflict’s politics have infiltrated all aspects of life, perpetuated even within

the treatment of wastewater. In essence, this symbolic meaning presents a rather pessimistic view regarding cooperation and environmental peacebuilding, one that perceives efforts to improve lives or Israeli-Palestinian relations as largely futile given the “political hue”¹³ the conflict has cast on all matters. It differs from that of resistance in that resistance also entails some belief that change can be exercised outside of the political system, whereas symbolism associated with political obstacles views wastewater treatment efforts, and cooperation within them, as contributing to the expansion and hardening of conflict politics.

- **Addressing Immediate Needs** (Lacking Symbolism): This category denotes the absence of symbolic meaning and significance. Although all parties, to some degree, referenced the importance of wastewater cooperation in terms of providing for the immediate economic, water, and environmental needs of communities (most actors agreed this was the projects’ most important aspect), this category suggests that the projects, and Israeli-Palestinian partnerships within them, are not significant in any other respect. Those adopting this perception seemed to value the tangible benefits of the project more so than their intangible, emblematic aspects in relation to the Israeli-Palestinian conflict overall.

Findings

In what follows, those symbolic meanings most referenced by the three types of actors interviewed (beneficiaries, technical communities, and institutional actors) and the comments made during interviews in reference to them, are presented. Each group is discussed as a separate entity in order to highlight the diversity and congruency of the symbolism associated with the act of cooperation in wastewater treatment, both among and within each group. In addition, discussion regarding how the symbolic meanings associated with cooperation in wastewater

treatment is manifested within each group’s future visions regarding Israeli-Palestinian relations is presented.

The Palestinian Beneficiaries’ Perceptions of Symbolic Meaning

Palestinian beneficiaries currently benefiting from cooperative household wastewater projects appeared to value Israeli-Palestinian cooperation in the projects for its utility in *meeting their immediate needs*.¹⁴ When asked about the importance of cooperation in the projects, one beneficiary responded that he was “okay with cooperation,” as long as he benefited from it.¹⁵ Another beneficiary mentioned that both sides should work together to solve common problems, despite the current occupation. However, that beneficiary did not indicate that he viewed cooperation in the project as significant in terms of transforming his own relationship with Israelis, nor did he perceive it as having any relation to or effect on the conflict or politics.¹⁶ Instead, when asked about the significance and relevance of cooperative wastewater treatment in terms of the conflict overall, the beneficiary in question responded: “leave the politics to the politicians.”¹⁷

The reluctance of beneficiaries to associate cooperative actions in wastewater treatment with *peacebuilding* appeared to be greatly influenced by the perceived irrelevance of the projects in terms of impacting politics (as noted above), as well as the context in which the projects are carried out. The occupation in particular was acknowledged as one factor potentially affecting the symbolic meaning that beneficiaries attributed to cooperative wastewater acts. Many members of both Israeli and Palestinian technical communities noted that some prospective Palestinian beneficiaries were not accepting of the projects, viewing cooperation in them as symbolic of *domination and inequality*, and specifically, of “normalization.”¹⁸

Despite this, and unlike the other household beneficiaries, one prospective Palestinian ben-

eficiary of a larger-scale cooperative wastewater project did regard the project as symbolic of *peacebuilding*, noting that cooperation within the project signified hope for building future Israeli-Palestinian relations and peace.¹⁹ This beneficiary, however, had already been working with Israelis in his own professional network, suggesting, again, that a history of continued cooperation and the context in which the projects are carried out affects the symbolic meaning and significance that beneficiaries attach to cooperation in wastewater treatment.

The Palestinian Beneficiaries' Visions for Future Israeli-Palestinian Relations

Among those beneficiaries who had not previously been engaged in collaborative alliances with Israelis, cooperation in wastewater initiatives was not regarded as significant in transforming relationships. Nor did those beneficiaries suggest that they viewed cooperation in wastewater treatment as significant in altering Israeli and Palestinian attitudes toward one another.²⁰ Instead, beneficiaries who perceived such projects as only addressing their immediate individual and community needs seemed to envision the future of Israeli-Palestinian relationships as defined largely in terms of convenience, and not necessarily in terms of peace. Interestingly, little discussion of Palestinian statehood occurred among cooperative project beneficiaries, who seemed to prefer that political matters be dealt with by politicians.²¹

It is important to note that the one prospective beneficiary who engaged in cooperative work with Israelis in his own professional community regarded the future of Israeli-Palestinian relations as one characterized by increased cooperative efforts, alliances, and peace. This vision complements the symbolism of *peacebuilding* that he associated with cooperation in the wastewater projects, and suggests that those already engaged in cooperative efforts may be more likely to see those efforts as part of a wider peacebuilding and relationship-building process, rather than as a simple, one-time practice.

The Palestinian Technical Community's Perceptions of Symbolic Meaning

Although aligned in some respects, interviewees in this category differed in the symbolic meaning that they placed on cooperation in wastewater initiatives. This was especially apparent with regard to the peacebuilding potential of the projects.

One category of symbolism upon which all Palestinian interviewees in the technical community agreed was *survival and resistance*. Nearly every member of the Palestinian technical community suggested that they perceived cooperation in wastewater projects as a significant tool for surviving the conflict through, as one interviewee from the Palestinian technical community put it, “easing the suffering of local communities.”²²

Many in the Palestinian technical community also referred to their work as symbolic of their *resistance* to letting politics impede their efforts. As one interviewee phrased it, “this kind of cooperation (away from politics) builds the community.”²³ Although they acknowledge that politics is stifling progress, they do not see their work as a reflection of that reality, but rather as a symbol of their *resistance* to it, with some even viewing their efforts as helping to alter political realities through their determination to align their own actions with the policies and goals of the Palestinian government.²⁴

The Palestinian technical community also referred to their work as symbolic of the *separation of Israel and Palestine*. This was indicated in repeated statements regarding the importance of producing visual, tangible results to enhance and build the Palestinian community and authority.²⁵ Although respondents acknowledged that cooperative wastewater treatment projects provide separate benefits to Palestinian and Israeli communities, no reference was made with regard to how they connect or build relationships between the communities. This suggests, to some degree, that the projects are regarded as symbolic of *further separation* between Pal-

estinian and Israeli communities, rather than of their unification. As one interviewee noted, “I work for my community. If they [the Israelis] want to support us in doing this, then okay.”²⁶

Many within the Palestinian technical community did not see the projects as symbolic of *peacebuilding* on a large scale, nor did they reference peace as a primary objective. As noted in previous sections of this report, the majority of those working in Palestinian civil society organizations expressed the feeling that although peace would be an added benefit, it was not one of their goals.²⁷ Rather, they viewed cooperation, much like many of the beneficiaries did: as a tool to achieve their objectives – useful in extracting needed resources, but not symbolic of peace or in terms of affecting the conflict and politics. As one interviewee explained, “when you have no other option, then it is okay to work with the Israelis, but the relationship should always be defined and okay with our national authorities.”²⁸

Despite this, some did acknowledge that cooperation in wastewater treatment was symbolic of *peacebuilding* on some level and of hope for peaceful Israeli-Palestinian relations in the future. Multiple Palestinian engineers in the technical sector noted that unlike in the political sphere, those within the scientific community have a unique opportunity to work together to encourage others to create peace.²⁹ Palestinian NGO members echoed this sentiment, explaining that, “the ‘scientific’ of what we are doing brings people together and builds relationships and trust.”³⁰

Most interviewed, however, viewed such relationship-building as confined to those within the same technical community, at least for the time being.³¹ In fact, few recognized the projects’ potential to build more peaceful, cooperative relationships between Israelis and Palestinians outside of their own technical community. Instead, many noted that the small scale of some projects, and of cooperation within them, is too insignificant to build peaceful relations or affect politics. Others even stated that “cooper-

ation on these projects is unrelated to political peace.”³² However, some acknowledged that if more Palestinians and Israelis worked together, cooperative acts as a whole would symbolize the potential for peace.³³

The Palestinian Technical Community’s Vision for Future Israeli-Palestinian Relations

Palestinian technical community members all agreed that there could be no future peace without equality.³⁴ Many noted that, ideally, the future would entail the creation of a just, two-state solution. Still, they did not see their work on joint wastewater projects in its current, limited capacity as fostering that outcome. Moreover, they did not seem to envision a future of expanded relations and cooperation with Israelis. As one interviewee clarified, “If there is a one-state solution, cooperation works. If there is a two state solution, then this is Palestine. Palestinians can take care of it.”³⁵ This suggests, as referenced throughout interviews with the Palestinian technical community, that wastewater treatment, despite having the potential to serve as a peacebuilding platform, is viewed more in terms of self-interest with regard to the cooperation occurring within it. Specifically, the cooperation is seen as symbolic of the potential and desire to create two *separate*, but equal states, but not necessarily states with strong relations or ties.

Notions of *survival and resistance*, *separation of Israel and Palestine*, and *peacebuilding* within technical communities complement ideas regarding the creation of two separate, largely independent Palestinian and Israeli states. This suggests, as it did with the beneficiaries, that the symbolism associated with cooperation in wastewater initiatives and individual visions regarding future Israeli-Palestinian relations are closely intertwined.

It is important to note that although cooperation in wastewater initiatives was seen by the Palestinian technical community as symbolic of *survival and resistance*, and of building *sepa-*

rate states, it also symbolized *peacebuilding* and hope for future relations. However, the extent to which the cooperative efforts were viewed as symbolizing *peacebuilding* was limited, as their ability to build relations and peace was regarded as only possible among Palestinians and Israelis within that specific wastewater technical community. Still, it is possible that, by providing Palestinians within the technical community the opportunity to engage with their Israeli counterparts, cooperative wastewater initiatives may in fact be altering views regarding the potential for future peace, as well as those regarding their own contributions to it.

The Israeli Technical Community's Perceptions of Symbolic Meaning

The Israeli technical community seemed to agree that, to them, cooperation in transboundary wastewater projects mainly symbolized *survival*, given the interdependence of Israeli and Palestinian environmental issues and *resistance* to the status quo. Also indicated was that the cooperative efforts symbolized *peacebuilding* and the *separation of Israel and Palestine*.

As did their Palestinian counterparts, members of the Israeli technical community viewed cooperation in wastewater initiatives as symbolic of *survival and resistance* to political and conflict realities. Although unsure if cooperative wastewater treatment would have an impact on politics, one interviewee did express that it is “making a normal life for all of us” despite political obstacles, denoting, to some extent, a resistance to allowing the conflict to define quality of life.³⁶ Many members of the Israeli technical community also emphasized that the cooperative efforts served as a symbol of *survival* given the interdependence of Israeli and Palestinian environmental matters, as well as the need to work together to protect the environment for

future generations. Ideas underlying the cooperative master plan for water basin management treatment in the Kidron Valley/Wadi Nar illustrate such conceptions (see *Site and Stream Story 1: Kidron Valley/Wadi Nar*). As one representative from the Israeli technical community explained, “each actor is better off if pollution is not in their own backyard, but to ensure that it is not, there must be cross-border cooperation.”³⁷

Much like in the Palestinian technical community, cooperation in wastewater initiatives was also referred to as symbolic of the *separation of Israel and Palestine* by the Israeli technical community. However, unlike the Palestinians, the Israelis made reference to the separation of states, but not to that of the people. Certain organizations within the Israeli technical community emphasized that their work was useful

in providing tangible resources that, in turn, benefited both the individual Israeli and individual Palestinian communities. Such interviewees also expressed that engaging members of both Palestinian and Israeli communities, especially youth, was an important aspect of their work. Others in the Israeli technical community echoed this sentiment noting that such engagement helps youth to “visualize their interconnectedness beyond the environmental aspect to imagine a new future.”³⁸

Statements like those above imply that members of the Israeli

technical community, unlike many of their Palestinian counterparts, regard cooperation in wastewater projects as a symbol of *peacebuilding*. Whether the Israelis’ very different experience of the conflict contributes to this is possible, but unclear. Regardless, the Israeli technical community agreed that the project represented a platform, creating the space necessary to build relations and understanding between both populations through working together.³⁹



Planter made of Recycled Tires
Al Afaq School, Jerusalem
Photo Credit: Kateira Aryaeinejad

The Israeli Technical Community's Vision for Future Israeli-Palestinian Relations

Members of the Israeli technical community seemed more hopeful about increased Israeli-Palestinian integration than did their Palestinian counterparts, which aligns with their association of *peacebuilding* with cooperation in the projects. Although Israelis did agree with Palestinians on the idea that a future peace must be defined by two states with equal rights (as reflected in their association of the projects with *separation*), they also tended to see the future of both states as more intertwined, especially with regard to the environment.⁴⁰ The notion of building a new generation wherein Israelis and Palestinians engage with one another and benefit from more peaceful relations was also widely promoted within the Israeli technical community, whereas among those in the Palestinian technical community, it was not.⁴¹ One Israeli organization did, however, indicate that although to them the projects symbolized *peacebuilding*, to many Palestinian community members, the initiatives symbolized “normalization,” or legitimization of the Israeli occupation.⁴² This suggests that some within the Israeli technical community recognize that the symbolic significance of cooperative projects impacts their effectiveness overall.

Despite a consensus within the Israeli technical community regarding the idea that cooperation in the projects symbolizes *peacebuilding*, not all agreed regarding their ability to impact politics. While the majority of those within the Israeli technical community referred to their work as affecting politics, a select few did not.⁴³ This, once again, demonstrates that the symbolic value of an act differs depending on the individual perceiving it. Although some may regard it as symbolic of a certain idea, even those within their same community may perceive it as a symbol of something else, or view it similarly but with weaker convictions.

The Palestinian Institutional Actors' Perceptions of Symbolic Meaning

Cooperation in wastewater treatment on the intergovernmental level was generally viewed by Palestinian institutional interviewees as symbolic of *politics inhibiting progress and domination and inequality*.

Palestinian officials tended to view their own intergovernmental cooperative efforts not as symbolizing *survival*, but as symbolic of *political obstacles*. In a municipality where wastewater treatment projects are currently stalled awaiting Israeli approval, one mayor explained that the technical communities – Israeli, Palestinian, and international alike – all understand the need to address wastewater issues, but that issues at the political level destroy all progress.⁴⁴ “We need an agreement between Palestine and Israel before we can move forward,”⁴⁵ noted the mayor, suggesting that cooperation over wastewater was not seen as inspiring future cooperation, or as capable of changing conflict realities given political obstacles.

Palestinian governmental officials also emphasized the role that politics has played in undermining cooperative efforts, especially in the JWC. Officials stressed that the JWC was being “leveraged to meet political goals,”⁴⁶ with one official explaining that the JWC was “frozen because Israel wanted to use it as a blackmailing platform.”⁴⁷

Most Palestinian institutional actors agreed that intergovernmental cooperation over wastewater issues was symbolic of Israeli *domination and inequality*. Although recognizing that cooperation over wastewater posed a viable opportunity to build the Palestinian state and promote peace,⁴⁸ Palestinian institutional officials also agreed that, currently, cooperation represents neither of those possibilities. Instead, cooperation was described as a “slave-master” relationship, where “there is no cooperation between a slave and a master.”⁴⁹ Delays in Israeli Civil Administration approval for plant construction in

Area C, as detailed in the *Site and Stream Stories* of Nablus WWTP (see *Site and Stream Story 6: West Nablus Wastewater Treatment Plant*) and Beitunia/Modi'in (see *Site and Stream Story 3: Wadi Beitunia/Nahal Modi'in*), illustrate such a relationship, where ultimate approval for the project is completely dependent on the approval of Israelis.

The Palestinian Institutional Actors' Visions for Future Israeli-Palestinian Relations

Despite their frustration, Palestinian institutional actors expressed hope for Israeli-Palestinian cooperation in the future, noting that, “cooperation will end with benefits for both sides... we want the 13”⁵⁰

Much like in the Palestinian technical community, and embodied in the symbolism of *domination and inequality*, many in the Palestinian government noted that actual cooperation would not occur until Israel regarded Palestine as a separate, but equal state, speaking of the need to remedy the *inequalities* symbolized by cooperation.⁵¹ As one official noted, cooperation means “[you] look to me as a real counterpart, and I look to you as a real counterpart.”⁵² Until this happens, Palestinian governmental officials stressed that cooperation in wastewater treatment will continue to be viewed as it is today, emphasizing that “[Palestinians] will resist a slave-master [type] of cooperation because it diminishes their dignity... no one can accept compromised dignity.”⁵³

The Israeli Institutional Actors' Perceptions of Symbolic Meaning

Two symbols were associated with cooperation over wastewater by Israeli institutional actors: 1) *Israeli humanitarianism and benevolence*, and 2) *political obstacles*. Additional symbols perceived only by some of those interviewed included *survival and resistance* and *peacebuilding*.

Israeli humanitarianism and benevolence was frequently cited in discussions regarding Israeli-Palestinian interactions in cooperative wastewater

mechanisms, including the JWC. Israeli government officials specifically referenced what they framed as generous Israeli acts, such as giving more water to Palestine than is required by Oslo⁵⁴ and approving Palestinian projects, even those not passed in the JWC.⁵⁵ One interviewee from the Israeli government even suggested that, “the IWA is preparing for the future needs of Palestine,” noting that Israel is currently allocating coastal land for desalination projects in order to do so.⁵⁶

Israeli officials also noted, with frustration that due to the Palestinians' reluctance to accept and reciprocate Israel's generosity, cooperation in joint water mechanisms, such as the JWC, also symbolized *political obstacles*. A member of one Israeli governmental body emphasized this belief, stating that, “we still have to take care of [the Palestinians]. From our perspective [providing environmental benefits] is not political, from [the Palestinians'] perspective, it is.”⁵⁷ Others referred to the current lack of formal activity in the JWC as symbolic of Palestinian political issues. As one official explained, “things are going more slowly now, everything is getting a political hue to it. Politics gets in the way of any efforts.”⁵⁸ Politics, in this sense, has a negative connotation, used as a tool to assign blame on the other (in this case on the Palestinians), and especially on the other's governmental policies for the perpetuation of conflict and the absence of progress in facilitating cooperation or addressing environmental realities. Using political issues to assign blame for such setbacks, as was the case during the construction of the Nablus WWTP (see *Site and Stream Story 6: West Nablus Wastewater Treatment Plant*), epitomizes such conceptions of politics.

Despite expressions of frustration, one Israeli institutional figure suggested that cooperation over wastewater is still occurring, although in a limited fashion, and is symbolic of both *survival* and *peacebuilding*. Referencing both, the official explained that, “everything is related to Palestinian cooperation. If you cooperate with [the Palestinians], it affects relations with regional

Table 2.7a: Symbolic Meaning Perceived by each Category of Actor

	Peacebuilding	Survival and Resistance	Separation of Israel and Palestine	Israeli Humanitarianism	Domination and Inequality	Political Obstacles	Addressing Immediate Needs (Lacking Symbolism)
Palestinian Beneficiaries	<i>Limited</i> ^o	*			<i>Yes (according to NGO actors)</i>		
Palestinian Technical Community	<i>Limited</i>	<i>Yes</i> *	<i>Yes</i>				*
Israeli Technical Community	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>		<i>Yes</i>		*
Palestinian Institutional Actors						<i>Yes</i>	*
Israeli Institutional Actors	<i>Limited</i>	<i>Limited</i>		<i>Yes</i>		<i>Yes</i>	

^o - "Limited" indicates that not all members of the group shared the symbolic meaning in question

* - Indicates that the symbolic meaning was attributed to unilateral wastewater projects (for analysis of unilateral projects, see Textbox 2.7a)

states,"⁵⁹ suggesting that cooperation symbolizes Israel's survival in the region. The same official later noted that cooperation also signified surviving the conflict. Another official expressed similar views, referring to cooperative wastewater efforts as "another step toward peace" from which to build relationships between the Israelis and Palestinians, starting with those in the technical community.⁶⁰

The Israeli Institutional Actors' Visions for Future Israeli-Palestinian Relations

Israeli institutional actors expressed somewhat similar views regarding the future of Israeli-Palestinian relations. Those interviewed in Israeli institutional and governmental bodies seemed to support a future in which Palestinians were able to take care of their own water needs, while still expressing a desire for continued Israeli-Palestinian cooperation. Despite this, few institutional figures expressed optimism that cooperation would continue to occur in a constructive manner given the obstacles posed by ongoing political issues (mainly those emanating from the Palestinian side). As one interviewee stated, "we'll have to work with one another, but I can't see that happening. There is an issue of disconnect between political and authority issues."⁶¹ Meanwhile, another interviewee described his own efforts to further cooperation as akin to banging his head against the wall given the political circumstances.⁶²

Key Conclusions, Implications of Symbolism, and Future Recommendations

In providing both the space and opportunity to engage and build relationships between otherwise divided Palestinian and Israeli populations, cooperative wastewater treatment projects represent a viable platform, as described by Lederach, by which to build peace. However, as noted in the introduction of this section, if the symbolic meaning associated with the act of wastewater cooperation is not positive, or is not indicative of the potential for peace, the peacebuilding significance of projects involving cooperative acts is diminished. Based on the findings in this section (see Table 2.7a above), the following conclusions and recommendations are presented regarding the importance and implications of symbolism on the peacebuilding significance and future of PWEG and AIES cooperative wastewater projects.

First, the symbolic meaning associated with cooperation over wastewater treatment is correlated with the manner in which parties envision the future of Israeli-Palestinian relations, as revealed in this section's findings. Given this, intentional efforts by PWEG, AIES, and others engaged in cooperative wastewater projects to transform the symbolism associated with their cooperation, and the projects themselves, could have a significant impact on how those involved with them imagine the future of Israeli-Palestinian relations. Doing so could, thus, further the peacebuilding impact of cooperative wastewater projects.

Second, there is limited uniformity in the symbolic meaning as perceived by different groups of actors across the board. Moreover, the symbolism associated with cooperation in wastewater treatment is not only varied, but often misaligned. For example, institutional actors perceived cooperation over wastewater as a reflection of political and conflict realities, whereas those within the technical community perceived it as symbolic of their ability to work around the politics of the conflict. Most beneficiaries, however, viewed cooperation in the projects as largely unrelated to political and conflict realities. These different perceptions suggest that increased engagement with all actors involved in cooperative wastewater treatment is needed in order to maximize its peacebuilding impact.

Currently, however, PWEG and AIES efforts to address the symbolic meaning associated with their cooperation in projects is lacking. By increasing understanding of the symbolism attached to cooperative efforts, and increasing engagement with outside actors to pinpoint strategies that address those concerns underlying different interpretations of symbolism, NGOs such as AIES and PWEG can help to facilitate the transformation of symbolic meanings associated with wastewater cooperation in a manner that augments their peacebuilding significance. At the very least, doing so could help to promote symbolic meanings associated with cooperation in wastewater treatment that are more complementary and positive, and thus less divisive and more conducive to building relationships and peace.

It is important to note that the symbolism of *peacebuilding* was attributed to cooperation over wastewater by nearly every group of actors, albeit sometimes in a limited fashion. This is significant, implying that to many, cooperation over wastewater does already, or has the potential to serve as a symbol of *peacebuilding*. With the association already there, this denotes an opportunity to build upon those perceptions, and strengthen the degree to which peacebuilding is associated with cooperative wastewater efforts.

Third, symbolism within each category of actors varied significantly, mostly between the Israeli and Palestinian actors, but also among members of the same national group. The only group where the symbolism associated with wastewater cooperation actually seemed to align was the technical community, where both Palestinian and Israeli actors viewed cooperative projects as symbolic of *survival and resistance*, the *separation of Israel and Palestine*, and, albeit to varying extents, *peacebuilding*. This stands in contrast to institutional actors, who agreed that cooperation in wastewater treatment symbolized political obstacles, but disagreed about additional symbolic meanings attributed to cooperative efforts. The negative and contrasting connotations associated with wastewater cooperation among Palestinian and Israeli institutional actors, as opposed to the more positive and unified meanings attributed to them within the technical community, additionally suggest that civil society and technical community actors are uniquely suited to carry out peacebuilding acts, despite the politics and obstacles imposed by the conflict. Others, such as those within the institutional category, seem less capable of doing so because of their attachment to the symbolism of *political obstacles*.

Still, there were substantial differences regarding the meaning of each category of symbolism among Israelis and Palestinians within the technical community. For example, members of both the Palestinian and Israeli technical communities viewed their cooperative efforts as indicative of the *separation of Israel and Palestine*. However, those in the Palestinian technical community seemed to perceive the symbolic meaning of *separation* as creating two separate states with limited future cooperation, whereas those in the Israeli technical community viewed separation as developing two equal partners, both of which sustained continued, cooperative relations. This is problematic, not only because the two actors have different visions of the future, which correlate with the symbolic meaning that each attributed to the cooperative efforts, but also because of its implications on building peace and

parity. While contributing to the development of two separate communities may build equality, it will not necessarily build relationships, which, according to Lederach, are integral in long-term conflict transformation. This could dampen the peacebuilding potential of such initiatives.⁶³

As noted earlier, discussion regarding symbolic meanings between partners such as PWEG and AIES is currently limited. Greater engagement with the concept of symbolism and greater discussion of peacebuilding goals and strategies between AIES and PWEG could increase alignment of the symbolism each attributes to their cooperative work and also lead to further understanding of how their own goals and perceptions of symbolic meaning parallel those of their beneficiaries and institutional actors. Doing so would also help to eliminate any contradictions within their joint and individual strategies and project outcomes.

Finally, this section's findings reveal important information regarding those who perceived cooperative acts in wastewater treatment as symbolic of *peacebuilding*. Among those interviewed, only the Palestinian and Israeli technical communities seemed to agree that cooperation in wastewater treatment served as a symbol of conflict transformation and relationship-building, suggesting that it was seen as symbolic of *peacebuilding*. However, such perceptions were limited by two factors. First, both Palestinians and Israelis varied in the degree to which they viewed cooperation in the projects as symbolic of *peacebuilding*, with Palestinian actors appearing to attach less significance to cooperation than did some of their Israeli counterparts. Second, among those actors viewing cooperation over wastewater as capable of building relationships between Israelis and Palestinians, most limited that capability to only having an impact on members of the wastewater technical community itself.

Still, some did acknowledge that should more Israelis and Palestinians engage in work together in cooperative projects, their cooperative efforts combined could have greater *peacebuilding* potential.⁶⁴ One beneficiary referenced that cooperation over wastewater was symbolic of

peacebuilding and the potential to build Israeli-Palestinian relationships. That beneficiary, as previously noted, was already engaged in cooperative work with Israelis within his own technical community, unrelated to wastewater. This suggests that outside of the wastewater technical community, cooperation between Israelis and Palestinians is occurring, and is even perceived as symbolic of *peacebuilding* and the hope for future peace and cooperative relations. Connecting people from those different professional networks and communities in which cooperation is already occurring, and is regarded positively as symbolic of *peacebuilding*, could thus further the peacebuilding impact of wastewater cooperation through expanding and reinforcing such cooperative efforts.

Although the peacebuilding potential of wastewater cooperation is currently somewhat limited, opportunities to expand its peacebuilding significance do exist. However, to capitalize on cooperative wastewater treatment's peacebuilding potential, there is a need for greater acknowledgment of the symbolic values attached to such actions, especially given their significance in determining how parties do or do not cooperate, implement projects, and seek out interaction with one another beyond matters of wastewater. There is also an opportunity for actors such as PWEG and AIES to be more intentional about transforming the symbolic meaning associated with such cooperation by promoting their work as symbolic of *peacebuilding*. A more deliberate approach to building peace and communicating their intent to do so with one another, and to actors outside of their own technical community, could prove valuable in altering the negative or misaligned symbolic meanings associated with their work and in expanding perceptions of its peacebuilding significance. Doing so also offers PWEG and AIES the opportunity to connect with other actors who perceive such cooperation as symbolic of *peacebuilding*, to expand cooperation to a scale that is seen as more capable of affecting change, and to even further transform the negative symbolism associated with wastewater cooperation into more positive, peacebuilding perceptions.

TEXTBOX 2.7A: SYMBOLISM AND UNILATERAL WASTEWATER PROJECTS

Although not indicative of a peacebuilding platform as conceived by Lederach,⁶⁵ unilateral wastewater initiatives that do not involve a cooperative, Israeli-Palestinian component may still have significance as peacebuilding mechanisms. Such significance, as noted by one USAID official interviewed, lies within their potential to build the capacity of the weaker side before bilateral projects are initiated.⁶⁶ Despite this, the symbolism attributed to unilateral wastewater treatment was largely unassociated with *peacebuilding*. It did, however, reveal important insights regarding those most directly involved in unilateral projects and their visions regarding the future.

The most prevalent symbolic meaning associated with unilateral acts to treat wastewater was *survival and resistance* (see Section 2.4 *Sustaining and Building Livelihoods in this report for further analysis of this concept*). Palestinian technical community representatives, their beneficiaries, and mayors in Palestinian communities where such projects were implemented all viewed unilateral wastewater treatment as symbolic of *survival* amidst the Israeli occupation, and/or *resistance* to being pushed off their own lands. The story of Khirbet ‘Atouf mirrors this sentiment well (see *Site and Stream Story 5: Khirbet ‘Atouf*).

One member of the Palestinian technical community defined unilateral work as, “working for the resilience of our government, our people, our state,”⁶⁷ while a Palestinian beneficiary noted that the unilateral efforts of Palestinian technical organizations contributed to his determination to stay despite the repeated destruction of his home by Israeli forces.⁶⁸ The community’s mayor similarly articulated that the unilateral efforts represented hope, giving his constituents the support to survive and remain steadfast despite the destruction of their lands and irrigation systems.⁶⁹

Moreover, despite their negative view of Israelis, whom they referred to as “thieves,”⁷⁰ unilateral beneficiaries acknowledged that they were open to the idea of coexistence with Israelis. Such coexistence, however, was conditioned on either the Israeli settlers returning to Israel, or on the signing of a peace agreement legalizing the settlements.⁷¹

Encounters with those cognizant of, but not necessarily directly involved in such unilateral initiatives, however, revealed that most viewed unilateral acts as unviable and symbolic only of *meeting immediate needs*. This included Palestinian institutional officials, and members of both the Israeli and Palestinian technical communities. As one Palestinian government official noted, “we will support self-determination, but if Israel has control over water, self-determination is not possible because Israel can shut off the water for political reasons.”⁷² Others in the technical community also recognized that the impact of unilateral projects on the overall conflict and conditions it has perpetuated was limited.⁷³ The roots of this frustration are revealed upon greater reflection of the *Stream Site and Stream Stories of Beitunia/Modi’in* (see *Site and Stream Story 3: Wadi Beitunia/Nahal Modi’in*), the Kidron Valley/Wadi Nar (see *Site and Stream Story 1: Kidron Valley/Wadi Nar*), Nablus WWTP (see *Site and Stream Story 6: West Nablus Wastewater Treatment Plant*), and Al ‘Auja (see *Site and Stream Story 4: Al ‘Auja*). In all of these cases, the necessity and impossibility of cooperation over wastewater treatment given Israeli control over water resources, permitting, and construction in the West Bank has made unilateral actions by Palestinians nearly impossible, unless, of course, they are willing to risk the repeated destruction of wastewater infrastructure, as demonstrated in the story of ‘Atouf (see *Site and Stream Story 5: Khirbet ‘Atouf*).

This raises an important point brought up during interviews with various actors.⁷⁴ While valuable in themselves, unilateral state-building measures alone, no matter what the scale, may prove insufficient as a tool to transform the conflict, build the Palestinian state, or even provide for the basic needs of Palestinian communities. In the absence of broader institutional and international support, such projects are often subject to demolition by Israeli forces, much like in

the story of 'Atouf (see *Site and Stream Story 5: Khirbet 'Atouf*).⁷⁵ Moreover, the known risk that such projects could one day be destroyed often deters investment in the projects, which increases the difficulty of carrying them out.⁷⁶ Thus, in terms of building Palestine, fostering peace, protecting the environment, and, ultimately, in helping people survive the conflict, unilateral wastewater projects may not prove the most feasible, or the most effective option.



Barbed Wire in East Jerusalem
Photo Credit: Andrew Conca-Cheng

Section 2.7 Notes

1 John Paul Lederach, *The Moral Imagination: The Art and Soul of Building Peace* (New York: Oxford University Press, 2005), 47-49.

2 Ibid.

3 Daniel Bar-Tal, *Intractable Conflicts: Socio-Psychological Foundations and Dynamics* (Cambridge: Cambridge University Press, 2013), 429.

4 Lisa Schirch, *Ritual and Symbol in Peacebuilding* (Bloomfield, CT: Kumarian Press, 2005), 4.

5 Ibid., 31-55.

6 Israeli beneficiaries were not interviewed during the rapid appraisal portion of this study.

7 Symbolic meaning was ascertained from the data through analysis of discourse and using grounded theory, which involves intertwining theory creation with data gathering and analysis, coupled with targeted interview questions gaging interviewee perceptions. Given the nature of these methodologies, all measures were taken to ensure that the data discussed below represented the true perceptions of those interviewed. Still, despite best efforts, the potential for misrepresentation of interviewee ideas remains a very real possibility. This potentiality should be taken into account when drawing conclusions from this section's findings. For further information on grounded theory, see: Kathy Charmaz, *Constructing Grounded Theory* (London: Sage Publications, 2014).

8 Mazin B. Qumsiyeh, *Popular Resistance in Palestine: A History of Hope and Empowerment* (London: Pluto Press, 2011), 235.

9 Eric Abitbol, "Hydropolitical Peacebuilding: Israeli-Palestinian Water Relations and Transformation of Asymmetric Conflict in the Middle East" (PhD diss., University of Bradford, 2013), 242.

10 Jan Selby, "Dressing up Domination as 'Cooperation:' The Case of Israeli-Palestinian Water Relations," *Review of International Studies* 29, no. 1 (2003), passim.

11 Normalization, as described by Walid Salem, represents "the process of building open and reciprocal relations with Israel in all fields, including the political economic, social, cultural, and educational, legal, and security fields." Normalization, however, carries different connotations depending on the individual discussing it. For Palestinians, normalization has a negative implication, signifying the legitimization of the Israeli occupation given the reinstatement of normal relations with Israeli in the absence of Israeli concessions or progress in the peace process. For Israelis, the term has a more positive connotation, representing their recognition as a legitimate actor and the resumption of normal relations. For more on the concept of normalization, its relevance in peacebuilding, and the varied Israeli and Palestinians perceptions associated with the term, see: Walid Salem. "The Anti-Normalization Discourse in the Context of Israeli-Palestinian Peace-Building," *Palestine-Israel Journal of Politics, Economics, and Culture* 12 (2005).

12 Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Israeli-Palestinian Conflict* (New York: I.B. Tauris, 2008).

13 Interviewee 52, Interview by AU Practicum Team, Israel, June 2015.

14 Interviewee 3 and 15, Interview by AU Practicum Team, West Bank, June 2015.

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20 Interviewee 3 and 15, Interview by AU Practicum Team, West Bank, June 2015.

21 Ibid.

22 Interviewee 10, Interview by AU Practicum Team, West Bank, June 2015.

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24 Interviewee 1 and 2, Interview by AU Practicum Team, West Bank, June 2015.

25 Interviewee 1, Interview by AU Practicum Team, West Bank, June 2015.

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28 Interviewee 2, Interview by AU Practicum Team, West Bank, June 2015.

29 Interviewee 12 and 32, Interview by AU Practicum Team, West Bank, June 2015.

30 Interviewee 1, Interview by AU Practicum Team, West Bank, June 2015.

31 Interviewee 1, 2, and 10, Interview by AU Practicum Team, West Bank, June 2015.

32 Interviewee 2, Interview by AU Practicum Team, West Bank, June 2015.

33 Interviewee 10 and 32, Interview by AU Practicum Team, West Bank, June 2015.

34 Interviewee 10, 32, and 2, Interview by AU Practicum Team, West Bank, June 2015.

35 Interviewee 1, Interview by AU Practicum Team, West Bank, June 2015.

36 Interviewee 11, Interview by AU Practicum Team, West Bank, June 2015.

37 Interviewee 25, Interview by AU Practicum Team, Israel, June 2015.

38 Interviewee 26, Interview by AU Practicum Team, Israel, June 2015.

39 Interviewee 11, Interview by AU Practicum Team, West Bank, June 2015.

40 Interviewee 11 and 27, Interview by AU Practicum Team, West Bank, June 2015; Interviewee 26, Interview by AU Practicum Team, Israel, June 2015.

41 Ibid.

42 Interviewee 25, Interview by AU Practicum Team, Israel, June 2015.

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51 Interviewee 19, 20, 21, and 22, Interview by AU Practicum Team, West Bank, June 2015.

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53 Interviewee 19, Interview by AU Practicum Team, West Bank, June 2015.

54 According to the Oslo guidelines, Israel is required to supply about 30 million cubic meters of water per year to Palestine. IWA officials suggested in interviews that Israel now supplies Palestine with more than 60 million cubic meters of water. Interviewee 48, Interview by AU Practicum Team, Israel, June 2015. For additional information, see: Civil Administration of Judea and Samaria, *Factsheet: Water in the West Bank* (COGAT, 2012), 3.

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58 Ibid.

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60 Interviewee 34, Interview by AU Practicum Team, West Bank, June 2015.

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62 Interviewee 53, Interview by AU Practicum Team, Israel, June 2015.

63 John Paul Lederach, *The Moral Imagination: The Art and Soul of Building Peace*, 47-49.

64 Interviewee 10, Interview by AU Practicum Team, West Bank, June 2015.

65 John Paul Lederach, *The Moral Imagination: The Art and Soul of Building Peace*, 47-49.

66 Interviewee 24, Interview by AU Practicum Team, Israel, June 2015

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68 Interviewee 7, Interview by AU Practicum Team, West Bank, June 2015

69 Interviewee 5, Interview by AU Practicum Team, West Bank, June 2015

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71 Ibid.

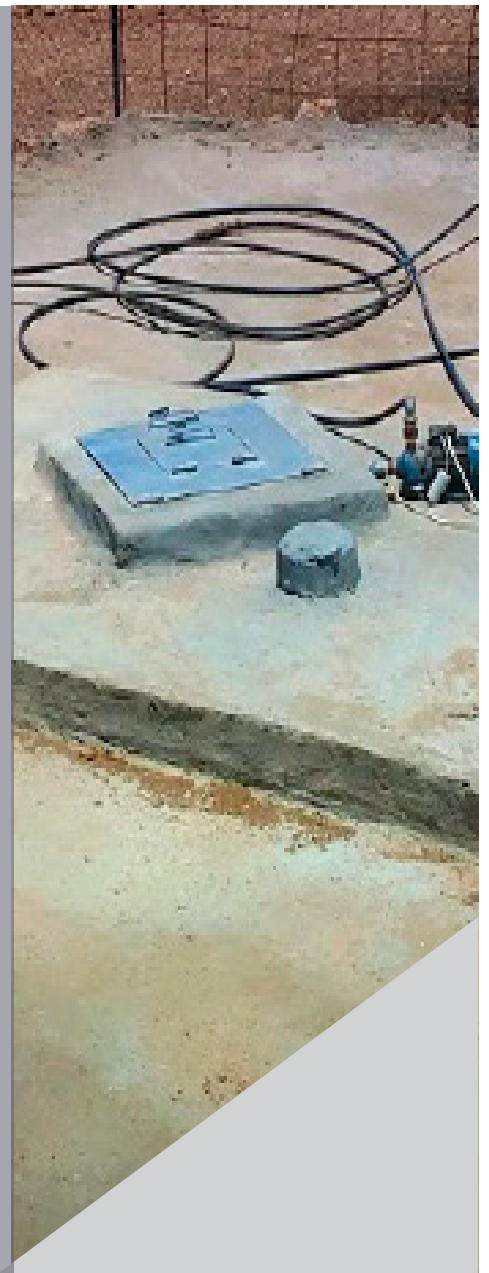
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73 Interviewee 2, Interview by AU Practicum Team, West Bank, June 2015

74 Interviewee 2, 19, and 22, Interview by AU Practicum Team, West Bank, June 2015; Interviewee 23, Interview by AU Practicum Team, Israel, June 2015

75 Interviewee 5, Interview by AU Practicum Team, West Bank, June 2015

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SECTION 3

LOOKING AHEAD: THE AIES-PWEG PARTNERSHIP AND SCALING OUT

Photo Credit (left to right): Lynn Brinkley • Julia Chalphin • Lynn Brinkley •

3.1 THE AIES-PWEG PARTNERSHIP AND SCALING OUT

Introduction

As noted in previous sections of our report, cooperation between AIES and PWEG on various wastewater management projects contributes to peacebuilding between Israelis and Palestinians. However, there exist additional opportunities for AIES and PWEG to expand the peacebuilding significance of their work. In particular, “scaling out” has the ability to overcome many of the obstacles presented in this report by capitalizing on the opportunities inherent in each. The concept of scaling out is used to refer to potential cooperative wastewater initiatives with increased involvement of a larger number of community partners and an expansion of the range of technical expertise offered to beneficiaries. As such, this section explores the concept of scaling out, including the ways in which it can augment the peacebuilding potential of cooperative wastewater projects, the opportunities available to AIES and PWEG to implement a scaling out project, and critical assessments that should be conducted and incorporated into any such initiative.

A Scaling Out Opportunity: Initial Meeting with Al ‘Auja Date Farmers

During our time in the field we had the unique opportunity to attend the initial meeting of a potential scaling out project between AIES, PWEG, and Al ‘Auja date farmers. The purpose of the meeting was to assess the needs of the date farmers and to discuss possible ways for both AIES and PWEG to assist them in meeting these needs. The information gathered from this meeting will be used to inform the planning process of the PWEG-AIES Al ‘Auja community farmers’ needs assessment.

Conversations between the potential beneficiaries and civil society members from both AIES and PWEG focused on identifying and prioritizing the needs of the date farmers. Many of the farmers expressed a need for comprehensive field train-

ing, including all processes from growing and irrigation, to post-harvest marketing of dates, and to an introduction to environmentally friendly practices.¹ Other needs discussed included technology (e.g. storage capacity, solar panels, and computerized irrigation systems), infrastructure rehabilitation, date farming expertise, commercial marketing guidance, and access to sufficient quantities of quality water (for more information on the water shortage in Al ‘Auja, (see Site and Stream Story 4: Al ‘Auja). Needs related to the lack of quality water were repeatedly echoed, as water utilized for irrigation on the farm is costly, and the service is intermittent and of low intensity.²

As the meeting progressed, the participants were able to narrow their list of needs and agree that the beneficiaries’ top three priorities include improved quality and quantity of water, consistent electrical supply, and marketing techniques.³ AIES and PWEG indicated they may be able to provide advice on developing renewable energy for pumping, water supply improvement, a training program for capacity building in Israel, and wastewater treatment in partnership with PWEG.⁴

Given the project’s focus on addressing the water, energy, and capacity-building needs of date farmers, implementation will require the involvement of a variety of members from various professional communities, including the agricultural, wastewater, alternative energy, and marketing sectors. Such increased involvement would, therefore, expand the range of actors with which PWEG and AIES could build relationships. A substantial number of beneficiaries and civil society actors present at the initial meeting for this potential PWEG-AIES project were already involved in cooperative work and shared similar views on the peacebuilding significance of AIES and PWEG’s transboundary project. In fact, one prospective beneficiary of the project noted he

would even like to increase his engagement with AIES.⁵ As such, this project offers the opportunity to build relations and increase direct engagement between Israelis and Palestinians, and connect those already engaged in cooperation in different sectors to increase peacebuilding efforts.

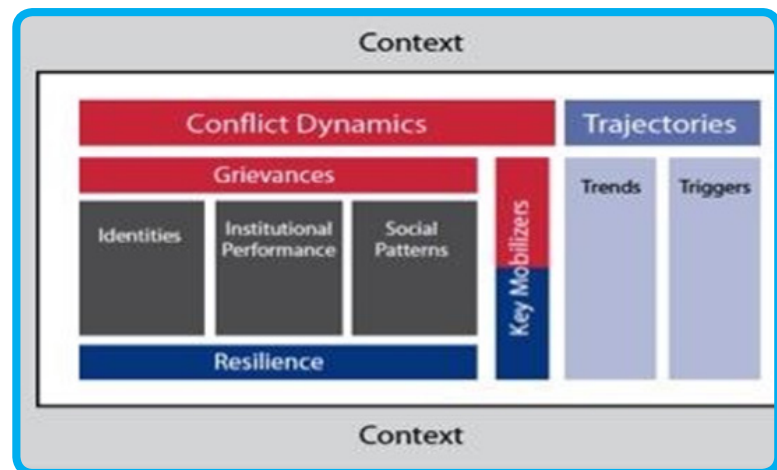
3.2 RECOMMENDED ASSESSMENTS AND ANALYSES

There are many ways AIES and PWEГ could further develop their partnership by scaling out relationships; the conversation in Al ‘Auja illustrates one way in which this could be accomplished. The scaling out of relationships in any project, however, requires specific analyses and assessments to ensure the project’s sustainability and success. Given this, it is necessary to conduct the following analyses on the potential date farm project: a conflict sensitivity analysis, a gender sensitivity analysis, and an environmental impact assessment. While international funders expect these assessments, such analyses will also improve the likely success and sustainability of the project, enhance the project’s peacebuilding potential, and serve as joint learning opportunities for the partners.

Conflict Sensitivity Training

USAID advises, “To avoid unwanted negative outcomes from assistance, such as inadvertently supporting one side against the other, it is essential for international actors to develop an independent, objective view of the conflict. A conflict assessment is a tool to facilitate this process.”⁶ The following framework is based on USAID’s Conflict Analysis Framework (CAF) 2.0 shown in Figure 3.2a below.⁷ As PWEГ and AIES continue to focus on wastewater management and treated gray water reuse, both should consider the various sensitivities that can arise from working in conflict-affected communities, including how agricultural water reuse is viewed in the West Bank and how the distribution of benefits can create tension. As such, AIES and PWEГ must

Figure 3.2a: USAID Conflict Analysis Framework 2.0 (2012)



Source: USAID Conflict Analysis Framework (2012)

carefully analyze potential negative unwanted outcomes that could arise when planning new projects and scaling out relationships.

Gender Sensitivity Analysis

Any scaling out project conducted by AIES and PWEГ should also require a gender sensitivity analysis. The World Bank Toolkit: Gender issues in monitoring and evaluation in agriculture argues that, “gender is a cross-cutting issue within the development policies of most international donors and national governments. If gender impacts are not evaluated, they are unlikely to be given any attention.”⁸ While donors will be more likely to provide funding if a gender sensitivity analysis has been conducted, it is also in the partners’ best interest, as incorporating gender strategies will better contribute to the success and sustainability of projects and avoid perpetuating existing gender inequalities (for more information on the importance of incorporating gender into wastewater projects, see Section 2.5 Gender and Rural Development). Evidence from EcoPeace’s Regional NGO Master Plan also argues that there are gender sensitivity issues that must be considered before implementing a project in the West Bank.⁹ Various monitoring techniques can be utilized within a community to conduct a gender sensitivity analysis. For example, the World Bank provides a toolkit and methodology for gender sensitive monitoring, which can help ensure fair wages and working conditions for women.¹⁰

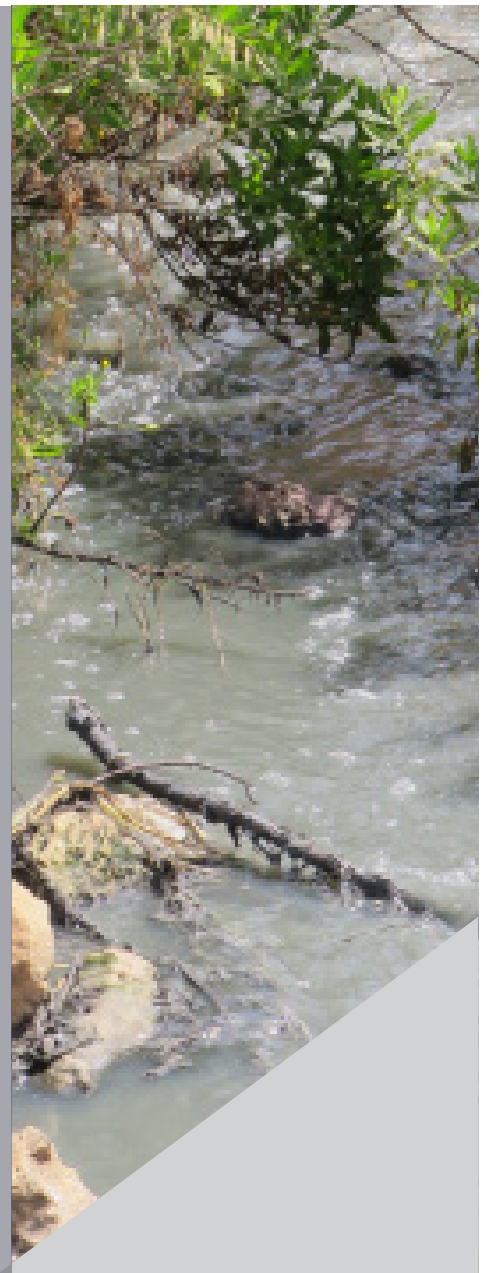
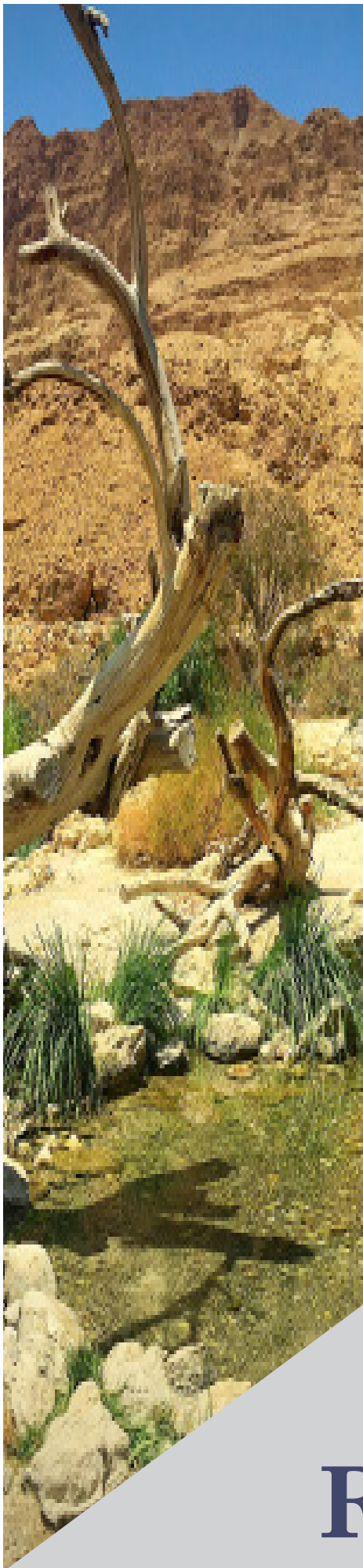
Aside from utilizing the World Bank's toolkit to conduct gender sensitive monitoring, the 2015 AU Practicum Team recommends establishing a women's cooperative within a proposed project's community led by a female PWEG employee. For example, the Al-Jalama Women Cooperative in the Jenin Governorate serves as a model of a successful women's cooperative initiated by a third party to "enhance and strengthen women entrepreneurship."¹¹ In addition, the establishment of the women's cooperative in Al-Jalama reduced poverty in the community, created jobs for women, increased the productivity of Al-Jalama's agribusiness, provided women with a renewed sense of belonging to the community, and enhanced the level of natural resource management.¹² PWEG and AIES should consider establishing a women's cooperative in any agricultural community if it is not ruled out during the gender sensitive monitoring process.

Environmental Impact Assessment

In addition to conflict and gender sensitivity analyses, conducting an Environmental Impact Assessment (EIA) leads to more sustainable development by assessing both environmental and social aspects of development schemes.¹³ Many EIA training manuals are provided online, such as the Food and Agriculture Organization's (FAO) Environmental Impact Assessment of Irrigation and Drainage Projects.¹⁴ EIA attempts to protect and improve the environment by providing a way to predict the potential negative environmental outcomes of proposed development projects, and by relaying more sustainable development options.¹⁵ The basic procedures of an EIA are screening, scoping, prediction and mitigation, management, and monitoring and audit.¹⁶ Neglecting to conduct an EIA can result in biological and ecological change, and change in hydrology, soil properties, water quality, and ecological imbalances.¹⁷

Section 3 Notes

- 1 Interviewees 41 and 45, Interview by AU Practicum Team, West Bank, June 2015.
- 2 Interviewee 41, Interview by AU Practicum Team, West Bank, June 2015.
- 3 Interviewee 11, Interview by AU Practicum Team, West Bank, June 2015.
- 4 Ibid.
- 5 Interviewee 3, Interview by AU Practicum Team, West Bank, June 2015.
- 6 USAID, "Conflict Assessment Framework 2.0," Technical Paper (USAID, 2012), 3.
- 7 Ibid, 15.
- 8 World Bank, "Module 16: Gender Issues in Monitoring and Evaluation in Agriculture," *Gender in Agriculture Sourcebook* (Washington, D.C.: World Bank, 2009), 676. Accessed July 26, 2015, <http://siteresources.worldbank.org/INTGENAGRLIVSOUBOOK/Resources/Module16.pdf>.
- 9 EcoPeace Middle East, "Support to Women Organizations and Bedouin Communities," *Annexes for the Regional NGO Master Plan for Sustainable Development in the Jordan Valley*, (Amman, Bethlehem, & Tel-Aviv: EcoPeace, 2015), 82, accessed July 6, 2015, http://www.riverfoundation.org.au/admin/multipart_forms/mpf_resource_403_8___Annexes_Regional_NGO_Master_Plan_Final.pdf.
- 10 World Bank, *Toolkit: Gender Issues in Monitoring and Evaluation in Agriculture* (Washington, D.C.: World Bank, 2012), accessed July 26, 2015, http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2012/11/22/000356161_20121122050203/Rendered/PDF/NonAsciiFileNameo.pdf.
- 11 "Creating Women Cooperative Agrobusiness in Al-Jalama, Jenin Governorate, Occupied Palestinian Territory," ARIJ.org, accessed June 29, 2015, <http://www.arij.org/index.php/projects/completed-projects/218-december-2014-completed-projects/568-december-2014-creating-women-cooperative-agrobusiness-in-al-jalama-jenin-governorate-occupied-palestinian-territory>.
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- 13 UNEP, *UNEP's Environmental Impact Assessment Training Resource Manual – Second Edition* (Geneva: UNEP, 2002), 1, accessed July 27, 2015, http://www.unep.ch/etu/publications/UNEP_EIA_Manual.pdf.
- 14 T.C. Dougherty, A.W. Hall, and H.R. Wallingford, *Environmental Impact Assessment of Irrigation and Drainage Projects*, FAO Drainage and Irrigation Paper, no. 53 (Rome: FAO, 1995).
- 15 Ibid, 7.
- 16 Ibid, 18.
- 17 Ibid, III-IV.



SECTION 4

CONCLUSION & RECOMMENDATIONS

Photo Credit (left to right): Julia Chalpin • Lynn Brinkley • Andrew Conca-Cheng •

4.1 CONCLUSION

Water issues in Israel and Palestine are inextricably linked to the highly contentious questions of borders, security, conflict politics, land, and self-determination, all of which are at the root of the Israeli-Palestinian conflict. As demonstrated in the various sections and Site and Stream Stories presented in this report, throughout its history, the conflict has shaped the physical and political landscape in Israel and Palestine in such a way that effective water management, not to mention peacebuilding efforts, requires innovative, cooperative means of engagement across borders and around otherwise seemingly-insurmountable obstacles.

The complex set of physical and social borders represents one such obstacle. Such borders fragment the region, serving as barriers impeding the flow of information, people, economics, ideas, and technology – all of which are important for the effective management of water resources in the West Bank, including the Jordan River Basin and the Mountain Aquifer. This is especially so given that the flow of water resources is not restricted by, or contained within, these borders.

Despite the political, social, and physical barriers inhibiting cooperative water management, and despite the urgent need for increased access to water infrastructure in the West Bank, civil society organizations, such as PWEg and AIES, are well-positioned to improve water management in the West Bank. Israeli and Palestinian civil society organizations have a greater ability to bypass and circumnavigate otherwise restrictive borders than are those at the governmental or general populace level, who are often restricted by the influence of politics. Moreover, as also indicated by this report, these organizations are more willing to surmount such obstacles in a manner conducive to building peace, although the extent of such peacebuilding is often viewed as restricted to only those Israelis and Palestinians already within civil and technical society.

Still, the work of PWEg and AIES represents a strong example of how cooperation

on wastewater treatment can provide environmental, economic, and public health improvements for both Israelis and Palestinians. What is more, their relationship, in particular, illustrates several processes by which localized cooperation between Israelis and Palestinians can lead to broader forms of peacebuilding. These processes include:

- Providing spaces for relationship-building between Israelis and Palestinians by transcending those political and social borders imposed by the conflict;
- Desecuritizing water through influencing and carrying out speech acts;
- Building trust through information sharing and improving water management capabilities by sharing data;
- Reaffirming Palestinian resilience and reasserting Palestinian identity by strengthening and building livelihoods to reduce Israeli-Palestinian power inequalities;
- Recognizing the significance of female involvement in cooperative wastewater treatment projects and incorporating gender-based strategies into all initiatives;
- Creating platforms for constructive dialogue between Israelis and Palestinians through increased public participation; and
- Recognizing the symbolism attached to cooperation in wastewater treatment and working to actively change it in a manner more aligned with peacebuilding.

Should engagement between Israelis and Palestinians be broadened through scaling out and expanding the reach of current joint-wastewater projects, it is possible that the peacebuilding impact, and symbolism associated with it, could be extended to include actors outside of civil society and the technical community.

4.2 RECOMMENDATIONS

Based on the potential peacebuilding mechanisms that we have identified throughout our research, we provide recommendations for PWEГ and AIES based on how they may augment the peacebuilding potential of their projects.

Create an Online Shared Information Database:

One of the paramount benefits of cooperative projects such as those between AIES and PWEГ is that they provide a channel for the flow of information across borders. PWEГ has collected a large body of data on communities in the West Bank through desk research and fieldwork. AIES also collects data that would be useful for the work being done by PWEГ. This type of information could be more easily shared between the two organizations through an online database that can be accessed at any time and from any location. Thus, to the extent that funds are available, we suggest that AIES and PWEГ create a shared online database. Such a data-sharing project could then be expanded to include other civil society actors like EcoPeace and HWE.

Continue to Solicit Third-Party Assessments:

One of the main conclusions of this report is that there exists an opportunity for future research to assess the impact of joint AIES and PWEГ projects. Such assessments will allow the partners to continue to gain a deeper understanding of their greatest strengths and limitations. It may also highlight opportunities for peacebuilding that the partners have not yet capitalized on. Such assessments may also help partners secure funding from international donors, and assess new projects as they develop.

Create an Internship Exchange Program between AIES and PWEГ:

AIES currently has an internship program that brings together students and professionals from around the world to work on some of the organization's various initiatives. Based on our findings regarding the importance of public participation and information sharing, we believe there is potential for strengthening the relationship between PWEГ and AIES through a joint intern exchange program. To the extent that it is logistically feasible, we recommend that interns spend several months interning for and residing at AIES, as well as several months living in Ramallah and interning for PWEГ. Through these exchanges, interns could provide unique insights into how the partnership between AIES and PWEГ could be strengthened and their projects improved. They would also provide valuable learning experiences for individuals who may continue to work in the field of water engineering in Israel and the West Bank.

Plan and Implement Public Awareness Campaigns in Israel:

Not all Israelis are aware of cooperative transboundary wastewater projects in the West Bank. In joint AIES and PWEG projects, public participation by individuals who are not AIES or PWEG staff members or water experts is, for the most part, limited to Palestinian beneficiaries. Public awareness campaigns in Israel would increase understanding of these projects and their potential to bring about shared benefits for both Israelis and Palestinians. AIES and PWEG could encourage staff, interns, and supporters to write op-eds in Israeli newspapers about the projects. AIES could feature its work with PWEG more prominently on its website and in social media platforms like Twitter and Facebook. Finally, staff members at AIES could additionally give lectures at Israeli universities about their work with PWEG.

Expand Programs for Environmental and Peace Education in the West Bank and Israel:

PWEG and AIES should reach out to local schools and youth centers in the West Bank and Israel, respectively, to create environmental education and peace education classes, or even after school programs and workshops. Teaching youth about transboundary environmental issues helps students understand that Israelis and Palestinians have shared goals related to the environment. They can also share the things that they learn through these classes with their parents.

Consider Increasing Discourse on the Relationship between Security and Water:

Our research has revealed the role that environmental NGOs like AIES and PWEG can play in desecuritizing water. Recognizing that cooperation over water projects can serve as desecuritizing acts, AIES and PWEG should continue to work together and remain mindful that how they choose to frame their cooperation can and does impact desecuritization. As such, AIES and PWEG should consider using a specific rhetoric that highlights how the securitization of water is a security threat, thus, using speech acts to not only prevent further securitization, but also contribute to desecuritization.

Enhance Beneficiary Training:

Based on our research, it is unclear why some homeowners are able to successfully maintain their household-scale wastewater treatment projects and others are unable to do so. We recommend that AIES and PWEG (or a third-party) conduct an analysis of those projects that are no longer functioning. The study should determine why the projects failed and what could have been done differently in site selection, training, and maintenance processes to increase their likelihood of success. It should also seek to determine the types of information and training beneficiaries need by assessing effective projects and determining exactly what successful homeowners are doing to maintain their own systems. This study will help guide future work, and will also help both partners clearly communicate to potential beneficiaries the amount of labor and time they should expect to commit to maintain the systems.

Educate the PWA and IWA on the Benefits of Small-Scale Gray Water Recycling Systems:

It is clear from our research, and from the research of the 2014 AU Practicum Team, that the small-scale gray water treatment and reuse systems installed by AIES and PWEГ yield many important environmental, economic, and social benefits. In particular, these projects produce tangible results for homeowners while simultaneously providing a path to future dialogue between Israelis and Palestinians on issues of water and sanitation. If both the PWA and IWA were made more aware of the benefits of these systems, they may be more supportive of efforts to scale up the construction of such systems in the West Bank and Israel.

Conduct Gender Impact Assessments:

During the planning stages of initiatives, PWEГ and AIES should conduct gender impact assessments to ensure that their projects do not perpetuate existing gender inequalities, and that they actively promote increased gender parity. Within these projects it is important to develop strategies to ensure cohesiveness of the family as an economic unit, rather than promoting and producing more work for one gender than they do for the other.¹ Many donors such as USAID or the European Union provide gender assessment toolkits upon request. For reference, the USAID toolkit found in *USAID/West Bank and Gaza Gender Analysis* is one resource that offers insight into gender analysis. PWEГ and AIES would benefit immensely from obtaining and utilizing such tools in both their current and future efforts.

Increase Female Participation:

PWEГ and AIES should take advantage of the distinct knowledge that female beneficiaries possess. Female participation and contributions to projects should be encouraged and enhanced through capacity building workshops designed for women. Lastly, an Arabic-speaking woman should accompany PWEГ and AIES on site visits in order to engage with female beneficiaries at every phase of project planning.

Prioritize Projects that Build Rural Livelihoods:

Providing increased access to water can build and enhance the livelihoods of Palestinians, particularly those with natural resource-based livelihoods. As previously discussed, bolstering agricultural livelihoods promotes the resilience of Palestinians, particularly those in Area C, by increasing their ability to remain on the land. Therefore, joint PWEG-AIES projects should focus on augmenting agricultural livelihoods in order to help diminish the power gap existing between Israeli and Palestinian populations and, thereby, contribute to building peace.

Actively Seek Opportunities to “Scale Out”:

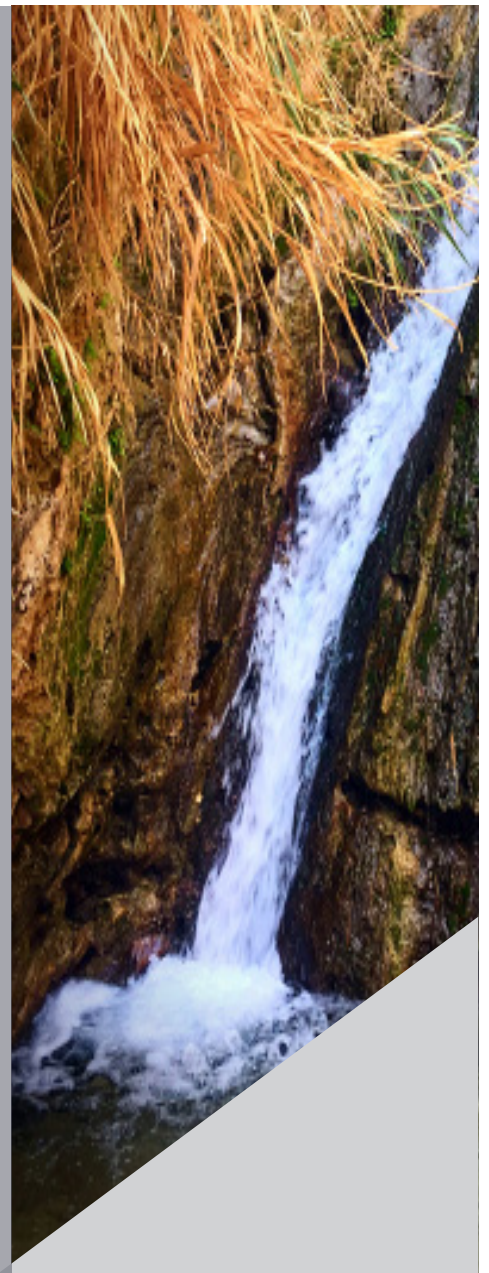
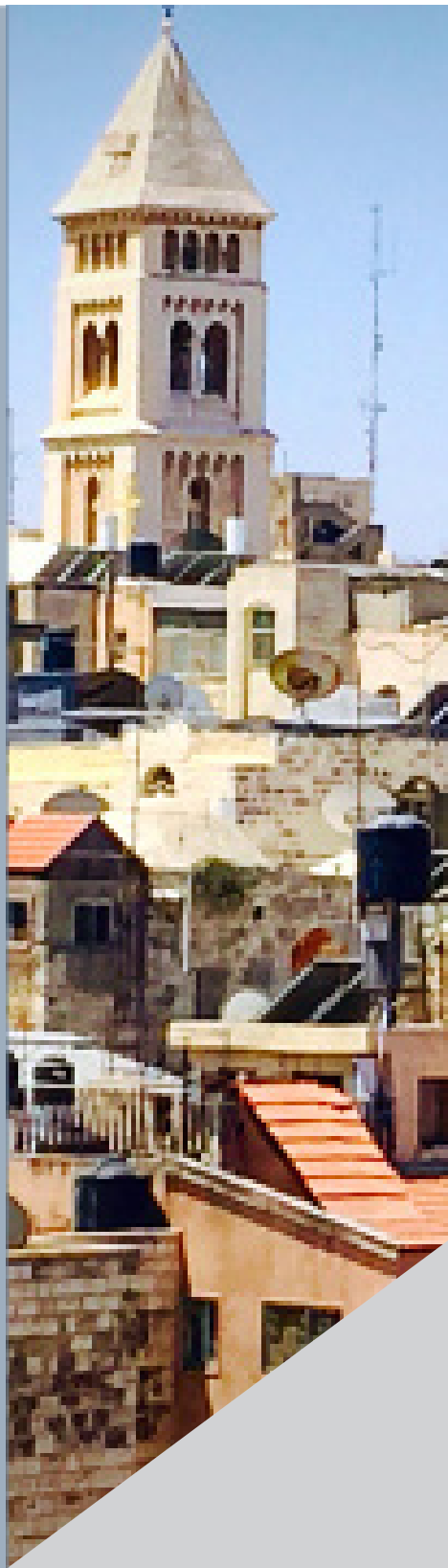
Our findings suggest that PWEG and AIES should seek out opportunities to engage with professional communities outside of the wastewater sphere. Connecting people from different expert networks in which cooperation is already occurring, and is regarded positively as symbolic of peacebuilding, could expand transboundary networks by increasing the number of people engaged in such cooperative efforts. Expansion of cooperative networks would also increase the ability of PWEG, AIES, and other actors involved to withstand and navigate the obstacles imposed by the conflict, and augment their power to affect political and social change.

Create and Implement Theory of Change Analysis:

Creating a theory of change analysis for AIES and PWEG could help the partners to gain a deeper understanding of the long-term goals of the organization and the actions that will lead to their desired outcomes. A third party in close consultation with PWEG and AIES should conduct this analysis. Such an assessment could be extremely useful for messaging purposes in public awareness efforts, as well as for informing grant proposals. If logistically possible, staff members from PWEG and AIES should meet formally at least four times per year in order to continue discussions of the long-term goals, successes, and challenges of their collaborative work.

Section 4 Notes:

¹ Al-Hamad, L., M. Brhane, and J. Seibold, *Checkpoints and Barriers: Searching for Livelihoods in the West Bank and Gaza Gender Dimensions of Economic Collapse* (Washington, DC: Middle East and North Africa Region, Sustainable Development Department, World Bank, 2010), 81.



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