

## **WATER, COOPERATION AND PEACE**

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

American University  
School of International Service  
Graduate Practicum  
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## About the Organizations Evaluated in this Report

**The Arava Institute for Environmental Studies (AIES)** is an Israeli-based research organization that, among other projects, develops accessible and equitable off-grid (not connected to major sewerage infrastructure) decentralized wastewater treatment and recycling systems. AIES aims to establish a forum for open communication between Israelis and Palestinians to promote water conservation, desalination, wastewater treatment, environmental protection, and education.<sup>1</sup> AIES's Center for Transboundary Water Management (CTWM) is funded through the United States Agency for International Development (USAID) with the mission to encourage water cooperation through a holistic approach in addressing infrastructure as well as social concerns related to the region's water supply.



**PWEG** Palestinian Wastewater Engineers Group

The **Palestinian Wastewater Engineers Group's (PWEG)** interests align with those of AIES in seeking to enhance the collection, treatment and disposal of wastewater within the marginalized regions of the Palestinian West Bank.<sup>2</sup> Since its creation in 2004, PWEG has been highly dedicated to upgrading personnel skills in the Palestinian water and solid waste sector by focusing on capacity building activities. Their goal is to protect water resources from pollution and assists local authorities in planning, designing, and implementing water and sanitation programs. Its target groups it looks to assist are municipalities and village councils, local communities, water organizations, Palestinian contractors, and individual citizens.

The **House of Water and Environment (HWE)** is a Palestinian non-profit organization founded in 2004 that aims to promote practical research into the current and future state of water resources and the environment in Palestine and across the region. It seeks to combine social, technical, and economic sustainability measures in order to achieve development outcomes that provide for both national development and poverty alleviation. HWE concentrates its work in urban areas of Palestine and offers services in water, sanitation, environmental engineering, and science. It offers services in capacity building providing training and awareness programs and also works closely with international organizations such as UNESCO and the EU. HWE also provides ample original research and has a highly qualified team of engineers.<sup>3</sup>



<sup>1</sup> Arava Institute for Environmental Studies, "Decentralized Greywater Treatment and Reuse for Rural Communities," accessed July 03, 2014, <http://arava.org/arava-research-centers/center-for-transboundary-water-management/decentralized-wastewater-treatment-and-reuse-for-rural-communities/>.

<sup>2</sup> Palestinian Wastewater Engineers Group, "PWEG Mission Statement," accessed July 3, 2014, <http://www.palweg.org/index.php/en/>.

<sup>3</sup> The House of Water and Environment, "About Us," accessed July 3, 2014, [http://www.hwe.org.ps/about\\_us.aspx](http://www.hwe.org.ps/about_us.aspx).

## PREFACE

The School of International Service (SIS) offers its Masters candidates the opportunity to participate in a practicum, or a team research course that is a capstone of the SIS Masters Program. The summer 2014 practicum team on “Water, Cooperation, and Peace in the Middle East” included seven students guided by two SIS faculty members, Dr. Eric Abitbol and Dr. Ken Conca. The students and professors traveled to Israel and the Palestinian West Bank to evaluate the environmental peacebuilding significance of the cooperative household wastewater treatment systems of the Arava Institute for Environmental Studies (AIES), the Palestinian Wastewater Engineers Group (PWEG), and the House of Water and Environment (HWE). The practicum involved an intensive research and methodology workshop prior to the fieldwork, and culminated with this report after the AU Practicum Team returned to the United States.



**Jerusalem's Temple Mount**

*Photo Credit: Natalie Wisely*

This was the second year of the SIS sponsored practicum, and the second opportunity to work with the partner organizations AIES and PWEG. The practicum brought together SIS students from diverse programs, including Comparative and Regional Studies, International Development, International Peace and Conflict Resolution, and Global Environmental Politics. The varied backgrounds allowed the AU Practicum Team to cultivate a well-rounded and nuanced understanding of water, conflict, and peacebuilding in the region.

Over the course of two weeks, the Team spent its nights at the Kenyon Institute, a picturesque British research institute located in the Sheikh Jarrah neighborhood of East Jerusalem, and their days investigating in Israel and throughout the West Bank, where they had unprecedented access to multiple levels of Israeli and Palestinian stakeholders, such as local citizens, town mayors, municipalities, NGOs, wastewater treatment professionals, and water authorities.

This particular practicum is unique in that it explores deeply entrenched issues that are extremely sensitive and emotionally charged. The group became more than a research group; in many ways it was a support group, as many were emotionally affected by the experiences in the field.

The field research lasted two weeks from June 7-20, 2014. While the Team was in Israel and the West Bank, the situation escalated due to the kidnapping of three Israeli teenagers on June 12, 2014. Israel immediately launched Operation Brother's Keeper in the West Bank in search of the teenagers. The boys' bodies were found on June 30. A Palestinian teenager was beaten and burned alive on July 2, 2014 in revenge for the deaths of the three Israeli youths. On July 8, Israeli launched Operation Protective Edge into Gaza. The AU Practicum Team did experience heightened security when traveling between Israel and the West Bank as a result of these events, but all originally scheduled interviews were completed.

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## LIST OF ACRONYMS

AIES	Arava Institute for Environmental Studies
AU	American University
BYJB	British Youth Justice Board
CMM	The Office of Conflict Management and Mitigation, USAID
CTWM	Center for Transboundary Water Management
EU	European Union
FoEME	Friends of the Earth Middle East
HWE	House of Water and Environment
IWA	Israeli Water Authority
JSC	Joint Services Council
JWC	Joint Water Committee
NGO	Non-Governmental Organization
PA	Palestinian Authority
PWA	Palestinian Water Authority
PWEG	Palestinian Wastewater Engineers Group
SIS	School of International Service
UAWC	Palestinian Union for Agricultural Work Committees
UN	United Nations
USAID	United States Agency for International Development

## EXECUTIVE SUMMARY

**Section 1** provides an overview of the regional context of wastewater management. The cooperative initiatives studied operate within the context of hydro-political conflict and power asymmetry. The asymmetry, as understood by participants, largely stems from the 1995 Oslo Accords. The 1995 Oslo Accords created the Joint Water Committee (JWC), an organization intended to provide a structure for joint Palestinian and Israeli representation and management for the shared water resources. However, in practice Israel's position as hydrohegemon, as witnessed through the obstructions presented by the Civil Administration, allows it disproportionate control. This report argues the water cooperation and policy at the inter-government level is unproductive and inadequate.

This section also provides an overview of the three organizations that participate in the cooperative decentralized wastewater projects, and describes the nature of the projects themselves. The three organizations are the Arava Institute for Environmental Studies (AIES), the Palestinian Wastewater Engineers Group (PWEG), and the House of Water and Environment (HWE). The American University (AU) Practicum Team evaluated five decentralized wastewater projects that are the result of two different cooperative efforts. One of the systems surveyed resulted from a cooperative initiative between AIES and PWEG. The four additional projects are the result of a cooperative initiative between AIES and HWE.

Finally, section one also provides an overview of the environmental peacebuilding theory on which the study is based. Similarly, the methodology through which this is assessed is further developed.

**Section 2** explores wastewater management in the West Bank by situating it within the context of the Israeli-Palestinian conflict. This is accomplished by examining a range of four wastewater management scales, discussing the local preferences for larger-scale wastewater management, and evaluating the merits of smaller-scale, distributed wastewater management systems in the West Bank. The section concludes that distributed wastewater treatment, rather than larger-scale centralized treatment should be elevated as a preferred management option in the West Bank, and that efforts to expand wastewater treatment, at all scales, contribute to the building of Palestine and the enhancement of the Palestinian Authority's legitimacy, provided that organizations working to build infrastructure actively involve local and national authorities in their projects.

**Section 3** provides an assessment and analysis of the cooperative initiatives in the context of the relations of power that exist. This section provides an understanding of the context in which asymmetrical power struggles affect the outcomes of peacebuilding initiatives in relation to the projects studied. This section also highlights the primary mechanisms inhibiting improved wastewater management in the West Bank: the "Matrix of Control": Jurisdictional fragmentation, permitting, and mobility restrictions; asymmetries of power; asymmetries of capacity; and controversy over settlement connections. An examination of the present power asymmetry and its role in cooperation demonstrates that power issues often pose obstacles to water cooperation.

**Section 4** explores the professional networks, systems, and peacebuilding significance within the context of the studied initiatives. Specifically, the work of PWEG, Arava, and additional partners like HWE in constructing decentralized wastewater systems is part of an expansive landscape of ties linking Palestinians and Israelis. This section applies the method of social network analysis to develop visual maps of those linkages. The analysis finds that personal connections, professional development and social networks, between individual members of Palestinian-based and Israeli-based organizations, are significant for peacebuilding. Cultivating such relationships has potential to strengthen and build local governments as well as shift societal perceptions beginning at the micro level.

**Section 5** discusses the Israeli and Palestinian participant narratives regarding water cooperation relevant to this study. At each level of engagement, those interviewed expressed frustration at the barriers and challenges that exist when pursuing cooperative wastewater management. The interview process revealed similarities in respondent narratives: power asymmetries, issues of normalization, examples of cooperation (or lack thereof), struggles, injustice, hope, fatigue, frustration, and many other elements characteristic of the Israeli-Palestinian conflict. Within this section the narratives shared by research participants are divided into three levels: household, technical, and political.

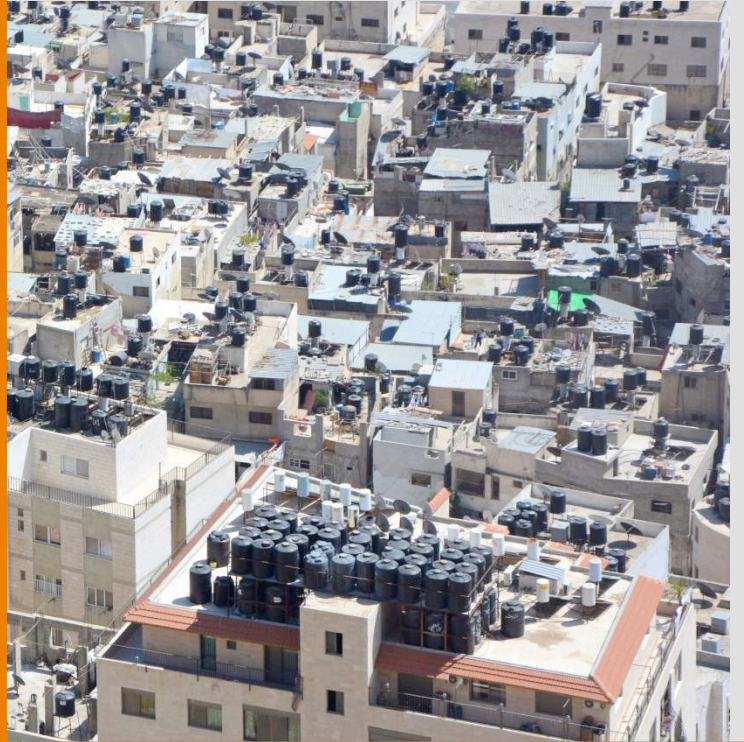
**Section Six** examines the role of gender as an aspect of power relations and identity as it pertains to peacebuilding and its significance for Arava, PWEG, and HWE's transboundary wastewater projects. Within this section, the research team assesses the environmental peacebuilding significance of the cooperative decentralized wastewater systems based on the project partners'



ability to incorporate gender strategies into their initiatives. When the term 'gender' is used interchangeably with 'women', gender analysis fails to include male identities, attitudes, roles, and issues. On the other hand, a gender-relational approach provides a broader lens with which to examine gender, through its interactions with other power and identity structures. The research confirmed that gender in the partners' peacebuilding projects is very much approached as a one-sided issue. When asked questions concerning gender strategies and analyses, government and project personnel gave a response that featured only women. Arava, PWEG, and similar organizations should consider using a gender-relational approach that will enable a wider range of potential interventions that target those who are most vulnerable and most amenable to change.

The **concluding** section provides findings and recommendations stemming from this study. Overall, the clearest obstacle for cooperative wastewater management efforts to peacebuilding is the geographical and administrative fragmentation of the West Bank. As a result, small-scale, decentralized wastewater treatment systems are the best system to use for wastewater management, but too low on the scale of cooperation to influence the broader political conflict. Furthermore, most of the transboundary wastewater cooperation transpires between Israelis and Palestinians at the professional-technical level. The idea that the environment knows no borders drives cooperation at this level, but these professional relationships alone are not yet enough to transform the conflict.

# INTRODUCTION



## I. INTRODUCTION

### I.1 The Regional Context of Wastewater Management

Israel and Palestine are located in the Jordan River Basin, an area that is subject to varied and even extreme water scarcity and stress. The typical threshold for water scarcity is set at between 1,000 to 1,700 m<sup>3</sup> per person per year, yet in Israel that number is 325 m<sup>3</sup>, in Jordan it is 150 m<sup>3</sup>, and in Palestine it is 70 m<sup>3</sup>.<sup>4</sup> Rainfall is highly variable both spatially and temporally, ranging from over 900 mm per year in northern Israel to less than 100 mm south of the Dead Sea with rainfall only during the winter. This scarcity and variability in rainfall has led to the overexploitation of the region's groundwater aquifers. Water scarcity is expected to worsen in this area in the future, and more than 80 percent of the global climate models project a decrease in precipitation for this already water-scarce region.<sup>5</sup>



Source: Brooks, David. "Israeli-Palestinian Agreement on Water within Sight." In *internationalwaterlaw.org*.  
<http://www.internationalwaterlaw.org/blog/2014/01/08/israeli-palestinian-agreement-on-water-within-sight/>. 2014.

Since the occupation of the Palestinian West Bank by Israel began in 1967, the region has exhibited a stark asymmetry in hydropolitical dynamics, whereby Israel has continued to control a disproportionate share of the scarce water supply while limiting access to water for Palestinians. As such, Israel is increasingly described as hydrohegemonic<sup>6</sup> in the academic literature.<sup>7</sup> Israel and Palestine share transboundary surface water and groundwater resources. Common surface freshwater resources include the Jordan River and its tributary, the Yarmuk River. Currently, Israel, which is upstream from the Palestinian Territories, uses the majority of water from the upper Jordan through its National Water Carrier, reducing its flows to 1/10 of historic levels.<sup>8</sup> Article 40 of the Oslo Agreements denies Palestinian access to the Jordan River.<sup>9</sup>

Shared groundwater resources include two major aquifer systems: the Mountain Aquifer and the Coastal Aquifer. The Coastal Aquifer is in the Gaza strip and along the Israeli Coast, while the Mountain Aquifer is in the West Bank and Israel. The Mountain Aquifer is divided into three sub-aquifer systems: the Western Aquifer (the most productive in the system), the North-Eastern Aquifer, and the Eastern Aquifer. Much of the region's potable water is extracted from groundwater, of which approximately 90% is derived from the Mountain Aquifer.<sup>10</sup> This aquifer underlies both Israel and the Palestinian West Bank and serves as the only water source for the majority of Palestinians in the region, while also serving as a key water source for Israeli areas. While the majority of the aquifer's recharge zone (the area where water is able to enter the aquifer) is located in the Palestinian West Bank, Israel claims roughly 80% of the Mountain Aquifer's output, leaving the remaining 20% for Palestinian usage.<sup>11</sup>

There are several reasons for this extreme disparity in groundwater usage, which evolved following the 1995 Oslo II Agreement. For instance, Israel's population is nearly twice that of Palestine's, and Israel also has higher water consumption rates per capita. Other reasons for the disparity include the quantitative limits the Oslo Accords placed on the amount of water that both Israel and Palestine can withdraw from these aquifers (see table I for groundwater allocation).

**Table 1: Ground Water Allocation under Article 40 of Oslo II Interim Agreement**

	Israel Allocation	Palestine Allocation	Sustainable Recharge Rate
Western Aquifer Basin	340 MCM/y	22 MCM/y	362 MCM/y
North Eastern Aquifer Basin	103 MCM/y	42 MCM/y	145 MCM/y
Eastern Aquifer Basin	40 MCM/y	54 MCM/y	Contested
Coastal Aquifer Basin (Not addressed in Oslo)	429 MCM/y	135 MCM/y	485 MCM/y

Source: Zeitoun, "Power and Water in the Middle East"

Many Palestinians argue that these limits are unfair and keep Palestine's per capita water usage artificially low.<sup>12</sup> The UN Watercourses Convention cites three basic obligations (or restricted sovereignty principles) when sharing water resources: 1) equitable and reasonable utilization; 2) prevention of causing significant harm; 3) provision of timely advance notice by a state planning new measures.<sup>13</sup> The current quantitative limits set by Oslo arguably do not meet these three basic obligations. The Oslo Treaty negotiations transpired between two parties with extreme power asymmetries, which allowed Israel to disproportionately determine the water outcomes.<sup>14</sup> Any future institutional framework for regional cooperation over these resources will have to find ways to distribute the common water resources in a more equitable manner.<sup>15</sup>

The interconnectedness of Israeli and Palestinian water resources necessitates a transboundary water cooperation approach. The West Bank is located upstream of Israel, which is negatively affected by inadequate wastewater management in the West Bank. Israel argues that Palestinians are not upholding their commitments to the Oslo Accords, in which they agreed that wastewater management practices needed to be implemented to avoid contamination of shared water resources. Palestinians argue that they are unable to properly manage their wastewater due to Israeli limitations imposed on Palestinian planning projects. Untreated wastewater has deleterious effects on public health, the economy and the environment. Therefore, the output of untreated Palestinian wastewater into West Bank wadis, the Dead Sea, and the Jordan River calls for an increased interest in its treatment.

Cooperation around wastewater requires agreement on such issues as water rights, management regime structures, water quality standards, and the allocation of wastewater treatment costs.<sup>16</sup> It is clear that due to the transboundary nature of water resources, there must be joint cooperation and coordination of water resources development and management in the region, regardless of the format of the cooperation.<sup>17</sup>

The Israeli-Palestinian Joint Water Commission (JWC), a body established by the Oslo Accords in 1995 and the

committee responsible for approving all water projects in the West Bank, is one example of a transboundary cooperation effort around water management. However, Palestinians extensively criticize it for reinforcing Israel's hydrohegemony rather than establishing equality in water cooperation.<sup>18 19</sup> Contrary to its intended outcome, the JWC has further subjugated the Palestinian population of the West Bank, as evidenced by the continued lack of equitable access to freshwater resources.

In an attempt to increase freshwater supplies, Israel utilizes desalination and wastewater recycling, both of which are energy-intensive activities. Israel treats an estimated 90 percent of its wastewater, allowing the reuse of 85 percent of that water.<sup>20</sup> In comparison, the Palestinian West Bank treats 10% of its wastewater, of which very little is reused.<sup>21</sup> Due to political, financial, and technological inequities that exist between Israel and Palestine, Palestinians are unable to replicate similar wastewater treatments.

Several obstacles have impeded the advancement of water cooperation. One such obstacle is Israeli unwillingness to relinquish control over the region's water supply. Another impediment to transboundary water cooperation is periodic conflict between Israel and Palestine resulting in tension between the governing parties. Even in times when violent conflict is not occurring, politicians have failed to recognize the mutual benefit and importance of wastewater treatment, thereby limiting the capacity for productive government involvement in water cooperation efforts. In the absence of productive government involvement, third party organizations such as the Arava Institute for Environmental Studies (AIES), House of Water and Environment (HWE) and the Palestinian Wastewater Engineering Group (PWEG), have emerged to address the issues related to water supply and transboundary cooperation. The current report examines and assesses the environmental peacebuilding merits of their cooperative efforts.

## I.2. The Cooperative Decentralized Wastewater Projects

In summer 2014, the American University (AU) Practicum Team evaluated five decentralized wastewater projects that are the result of two different cooperative efforts. One of the systems surveyed resulted from a cooperative initiative between AIES and PWEG. The four additional projects are the result of a cooperative initiative between AIES and HWE.



Photo Credit: Natalie Wisely

Both sets of pilot projects focus on populations that are located in more rural areas that lack the infrastructure necessary to treat wastewater, with a particular focus on graywater (all household wastewater not from toilets) treatment and reuse for household irrigation purposes. These areas exhibit little to no existing sewage infrastructure. The average household size is approximately 7 to 8 people, and the systems were installed between October 2013 and February 2014.

Through decentralized, low-cost sanitation systems, the projects seek to promote 1) environmental protection of freshwater, 2) preservation of freshwater, 3) treat-

ment of wastewater and subsequent increase of water supply, 4) improvement in agricultural production through irrigation, and 5) transboundary water cooperation. Both sanitation systems treat and allow for the reuse of household graywater. The blackwater (wastewater from toilets) is stored in septic tanks<sup>22</sup> and is neither treated nor reused, as treating blackwater requires more advanced treatment systems. Households will continue to employ professional services to pump their septic tanks when they need emptying.

Rather than storing graywater in septic tanks, its reuse saves costs on septic tank pumping. The domestic graywater treatment systems also protect groundwater by reducing the risk of septic tank overflows or leaking by separating black and gray wastewater, as well as treating household graywater for agricultural purposes. The installation of the systems takes advantage of the cooperative effort between Israelis and Palestinians to encourage transboundary communication and improve mutual understanding on shared issues.<sup>23</sup>

While the projects are currently in their 'pilot' phase, the organizations hope that their success will lead to larger-scale implementation of the systems. In addition to the four AIES/HWE systems visited, their initiative encompasses five other projects located in Israel and Jordan.<sup>24</sup> AIES/HWE wish to focus on current system maintenance and sustainability in order to display the benefits of their pilot systems.

The graywater treatment systems preserve and protect freshwater supply and provide non-potable water for irrigation, which in turn improves crop yields and income for the families who have installed the treatment systems. However, there are critical pitfalls to the small-scale application of wastewater treatment. Installation at the individual household level does not produce wide-scale benefits in environmental protection or water availability. Further, the localized installation is impractical for more highly populated urban communities that require a centralized solution to wastewater treatment.

## I.3. Environmental Peacebuilding Theory

Environmental peacebuilding is a growing field based in the overlap between the environment, conflict, and peace, and presents a unique opportunity to explore the building of alternatives to violent conflict. While the environment and natural resources have been considered a cause and a contributing factor to conflict<sup>25</sup>, environmental peacebuilding theory offers a new way to envision the role of the environment as an entry point for the resolution or transformation of conflicts.<sup>26</sup> It also has unique advantages in terms of peacebuilding as

it ignores political borders, requires long-term perspectives, requires flexibility and adaptability to unexpected change, lends itself to people-to-people interaction, and gives priority to future benefits over short-term interests.<sup>27</sup>

Water is a unique natural resource that may hold a greater peacebuilding potential than many others, as it often requires mutual and cross-border management and planning. As it is vital to human life, human security, and human dignity (as well as ecological needs), water offers a unique opportunity through the utilization of the environment in building peace and reconnecting communities separated by conflict.<sup>28</sup> To support that theory, transboundary waterways have historically proven to be a major source of cooperation and collaboration, rather than a point of contention. In fact, between 1945 and 1999, the instances of cooperation between riparian states outnumbered conflicts by more than two to one.<sup>29</sup> Additionally, of the conflict-related events that did occur during this time, less than 1% of events escalated into violent conflict.<sup>30</sup> Cooperation over water has historically helped to encourage greater trust and cooperation and has helped to prevent conflicts between riparians.<sup>31</sup> In Israel and Palestine, challenges over shared water resources present a rare opportunity for cooperative dialogue in a protracted political conflict.<sup>32</sup> Water is thus a uniquely important aspect of environmental peacebuilding as it can either catalyze the peace process or inhibit it.<sup>33</sup>

Varying from grassroots initiatives to state-level mechanisms, peacebuilding may be considered any number of activities which contribute to the stabilization of societies at varying stages of conflict.<sup>34</sup> Peacebuilding can range from simple cooperation over natural resources to transformational work, which engages social systems and norms in a way that alters conflict contexts and builds a sense of eco-regional identity. According to Carius, environmental cooperation may lead to wider cooperation through such mechanisms as 1) the internalization of shared norms; 2) the creation of a regional identity and regional interests; 3) the operationalization of information routines, and 4) the reduction of the use of violence.<sup>35</sup> Furthermore, as Wolf et al. state, “water fuels greater interdependence.”<sup>36</sup> When greater degrees of interdependence occur, there may be an opportunity to use shared concerns regarding water and wastewater to open avenues for mutual environmental cooperation and management, the sharing of benefits, as well as the internalization of common norms.<sup>37</sup>

An inhibiting factor to peacebuilding is the dehumanization of the other in social and civil conflict. This often occurs in ways that continually reconstruct negative

assumptions and internalization of conflict narratives.<sup>38</sup> Fear and mistrust between groups emerge as a normalized pattern of relationships, leading to further isolation. However, the environment may be able to play a critical role in bringing conflictual parties together. In the Israeli-Palestinian context, an enduring history of conflict has entrenched fears of the other, and embedded a sense of mistrust; yet, environmental concerns over the state of water resources and wastewater management offer a catalyst for the pursuit of peace. In this way, environmental peacebuilding engages the discourse of conflict transformation, as it is one method by which peace may be catalyzed.<sup>39</sup>

### THE OTHER

‘The other’ is a term that is often used to refer to a person or group, which is somehow different from the subject group. Specifically in this context, if a Palestinian(s) is the subject then ‘the other’ would refer to Israelis and vice versa. It may seem a simple term; however, it comes with implications for the narratives of the group. It signifies exclusion and insurmountable difference, which must be addressed in peacebuilding efforts. When this term is used, it creates a black curtain of sorts, which inhibits the subject group from perceiving ‘the others’ humanness. For significant peacebuilding to occur, both Israelis and Palestinians must move beyond this juxtaposing term and challenge this conflict narrative to a point at which each group recognizes the suffering and humanness of each other. Further, acknowledging the diversity of ‘the other’ will enable both groups to see a complex society of individuals suffering from a conflict as opposed to two opposing groups fighting each other.

Environmental peacebuilding, however, is not without its limits. Often, environmental cooperation has been unable to translate into broader forms of political cooperation, as may be the case in Israel and Palestine.<sup>40</sup> Wolf et al. note that in the last fifty years, of the 37 violent disputes they identified over water, 30 were between Israel and one of its neighboring states, representing 81 percent of violent water-related disputes globally.<sup>41</sup> Environmental peacebuilding projects will play a limited role in peacebuilding if the results do not reach the broader agendas of national governments and international/regional institutions. Thus, local cooperation over environmental issues alone cannot significantly impact broader cooperation without higher-level political support and interaction.<sup>42</sup>

## I.4. Methodology

This study examines the peacebuilding significance of these cooperative decentralized wastewater initiatives within the context of the Israeli/Palestinian conflict. Peacebuilding significance is assessed based on the following criteria:

- 1) The initiatives' ability to yield benefits.
- 2) The initiatives' ability to foster relationship building between Israelis and Palestinians.
- 3) The initiatives' ability to alter or provide alternatives to the manifestation of power asymmetries.
- 4) The initiatives' ability to expand the inclusion of multiple demographics.
- 5) The initiatives' ability to increase engagement in transformative experiences with the other

The study was carried out in two stages: 1) preliminary desk research over the course of one month in Washington, D.C. and 2) field research conducted over a ten-day period in the region, during which a rapid-appraisal technique was employed. Rapid-appraisal included interviews, site visits, data collection and informal discussions with various research participants. Site visits included household pilot sites, wastewater treatment plants, and governmental and NGO offices. Research participants included AIES, HWE and PWEA staff, project beneficiaries, Israeli and Palestinian governmental officials, NGOs and community members.

The cooperative wastewater projects are situated in the highly complex climate of the Israeli-Palestinian conflict, and as such, the assessment conducted required a multidimensional approach. The following chapters explore the findings and conclusions of the research through six different lenses. The first sets the stage by situating wastewater management in the context of the Israeli-Palestinian conflict and emphasizes the importance of wastewater management scale within this context. The second evaluates the impact of power dynamics on the projects. Thirdly, a mapping of the systems of interaction demonstrates opportunities for greater collaboration and progress. Following this, the narratives shared by those interviewed are evaluated for their significance. Finally, the projects' inclusion of gender is assessed. At the conclusion of each chapter, recommendations for the partner organizations, AIES, HWE and PWEA, are given that are specific to the evaluation completed. A summary of the most salient recommendations is also included in the conclusion of the report.

<sup>4</sup> Hoff Holger, Christopher Bonzi, Brian Joyce, and Katja Tielbörger, "A Water Resources Planning Tool for the Jordan River," *Water* 3 (2011): 718-36.

<sup>5</sup> Ibid.

<sup>6</sup> According to Zeitoun, Hegemony is leadership buttressed by authority. It is a mix of force/coercion and consent, and a combination of hard and soft power. This is different from domination, which is only hard power.

<sup>7</sup> Zeitoun, Mark, and Jeroen Warner, "Hydrohegemony – a Framework for Analysis of Trans-boundary Water Conflicts," *Water Policy* 8, no. 5 (2006).

<sup>8</sup> Holger, Hoff et al, "A Water Resources Planning Tool for the Jordan River."

<sup>9</sup> Nurit Kliot and Deborah Shmueli, "Real and Ideal Institutional Frameworks for Managing the Common Arab-Israeli Water Resources," *Water International* 23, no. 4 (1998).

<sup>10</sup> "A4. Amnesty International, "Troubled Waters—Palestinians Denied Fair Access to Water," *Journal of Palestine Studies* 39, no. 2 (2010): 197-200.

<sup>11</sup> Ibid.

<sup>12</sup> Kliot and Shmueli, "Real and Ideal Institutional Frameworks for Managing the Common Arab-Israeli Water Resources."

<sup>13</sup> Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian Israeli Conflict* (New York: I.B. Tauris, 2008).

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> Adam Schalimtzek and Itay Fischhendler, "Dividing the Cost Burden of Environmental Services: The Israeli-Palestinian Wastewater Regime," *Environmental Politics* 18, no. 4 (2009).

<sup>17</sup> Kliot and Shmueli, "Real and Ideal Institutional Frameworks for Managing the Common Arab-Israeli Water Resources."; David Brooks and Julie Trotter, "Confronting Water in an Israeli-Palestinian Peace Agreement," *Journal of Hydrology*, no. 382 (2010). ; Eric Abitbol and Stuart Schoenfeld, "Adaptive Visions of Water in the Middle East: Lessons from a Regional Water Planning Initiative," *York Centre for International and Security Studies (YCIS)* (2009).

<sup>18</sup> Amnesty International, "Troubled Waters."

<sup>19</sup> Ibid.

<sup>20</sup> "Water, Cooperation, and Peace," Practicum Report. Washington, D.C.: American University School of International Service, 2013.

<sup>21</sup> Ibid.

<sup>22</sup> Note: the PWEA/AIES project installs a new sanitary septic tank as part of the project. The AIES/HWE projects only install the greywater treatment system.

<sup>23</sup> "Water, Cooperation, and Peace," Practicum Report. Washington, D.C.: American University School of International Service, 2013.

<sup>24</sup> The Arava Institute for Environmental Studies, "Decentralized Greywater Treatment and Reuse for Rural Communities," accessed July 3, 2014, <http://arava.org/arava-research-centers/center-for-transboundary-water-management/decentralized-wastewater-treatment-and-reuse-for-rural-communities/>.

<sup>25</sup> Fisher, Joshua. "Managing Environmental Conflict." In *The Handbook of Conflict Resolution*, edited by Deutch, Coleman and Marcus, 2014.

<sup>26</sup> Carius, Alexander. "Special Report- Environmental Peacebuilding: Conditions for Success." *Environmental Change and Security Program Report* 12 (2006): 59-75.

<sup>27</sup> Dabelko, Geoffery. "From Threat to Opportunity: Exploiting Environmental Pathways to Peace." In *Environment, Peace, and the Dialogue among Civilizations and Cultures*. Tehran, Islamic Republic of Iran, 2006.

<sup>28</sup> Annika Kramer, "Regional Water Cooperation and Peacebuilding in the Middle East," (Brussels: Initiative for Peacebuilding, 2008).

<sup>29</sup> Aaron T. Wolf, Annika Kramer, Alexander Carius, and Geoffrey D. Dabelko, "Water Can Be a Pathway to Peace, Not War," (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2006).

<sup>30</sup> Ibid.

<sup>31</sup> Aaron T. Wolf, "International Water Conflict Resolution: Lessons from Comparative Analysis," *International Journal of Water Resources Development*, 13 no. 3 (2010).

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<sup>32</sup> Alexander Carius, "Special Report- Environmental Peacebuilding: Conditions for Success."

<sup>33</sup> Isaac, Jad. "The Essentials of Sustainable Water Resource Management in Israel and Palestine." *Arab Studies Quarterly* 22, no. 2 (2000): 13-31.

<sup>34</sup> GTZ, "The Water Security Nexus: Challenges and Opportunities for Development Cooperation," (Eschborn: German Federal Ministry for Economic Cooperation and Development, 2010), accessed July 3, 2014, <http://ccsl.iccip.net/gtz2010-0546en-water-security-nexus.pdf>.

<sup>35</sup> Alexander Carius, "Special Report- Environmental Peacebuilding: Conditions for Success."

<sup>36</sup> Wolf et al, "Water Can Be a Pathway to Peace, Not War."

<sup>37</sup> Annika Kramer, "Regional Water Cooperation and Peacebuilding in the Middle East," (Brussels: Initiative for Peacebuilding, 2008).

<sup>38</sup> Friends of the Earth Middle East, "Environmental Peacebuilding Theory and Practice: A Case Study of the Good Water Neighbours Projects and In Depth Analysis of the Wadi Fukin / Tzur Hadassah Communities" (Amman, Bethlehem, and Tel Aviv: EcoPeace / Friends of the Earth Middle East, 2008), 7.

<sup>39</sup> Lederach, John Paul. *Building Peace: Sustainable Reconciliation in Divided Societies*. Washington: United States Institute for Peace, 1997.

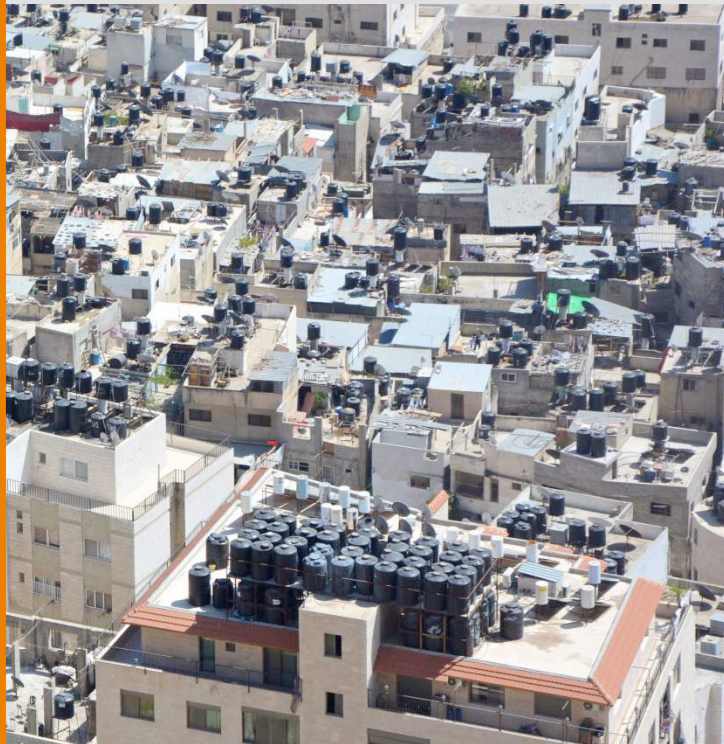
<sup>40</sup> Brooks, David, and Julie Trottier. "Confronting Water in an Israeli-Palestinian Peace Agreement." *Journal of Hydrology*, no. 382 (2010): 103-14.

<sup>41</sup> Wolf et al, "Water Can Be a Pathway to Peace, Not War."

<sup>42</sup> Alexander Carius, "Special Report- Environmental Peacebuilding: Conditions for Success."



# WASTEWATER MANAGEMENT IN THE CONTEXT OF THE ISRAELI- PALESTINIAN CONFLICT



## 2. WASTEWATER MANAGEMENT IN THE CONTEXT OF THE ISRAELI-PALESTINIAN CONFLICT

### 2.1. Introduction

This section explores wastewater management in the West Bank by situating it within the context of the Israeli-Palestinian conflict. This is accomplished by examining a range of wastewater management scales, discussing the local preferences for wastewater management, and evaluating the merits of smaller-scale, distributed wastewater management systems in the West Bank. The section concludes by assessing the peacebuilding significance of the cooperative decentralized wastewater projects through the lens of wastewater management practices.

### 2.2. Different Scales of Wastewater Management in the West Bank

Lack of wastewater treatment plants, sewerage systems, and wastewater reuse have led to the uncontrolled discharge of wastewater into the transboundary environment, resulting in environmental degradation, human health risks, heightened political tensions, and economic loss.<sup>43</sup> Wastewater management must be improved in order to reduce pollution and increase water supply in the West Bank. A range of wastewater management scales may be appropriate, depending on local conditions such as topography, finances, population needs, and political considerations.

#### 2.2a Four Wastewater Management Scales

The broader Israeli-Palestinian conflict imposes varying limitations on wastewater depending on the scale (or size) of the wastewater system. Thus, it is important to understand the specifics of project scale in order to understand the ways in which individuals manage and work with, against, or around the political conflict. In the West Bank, there are four scales of wastewater treatment:



- 1) **Large-Scale Centralized Wastewater Plants** treat thousands of cubic meters of wastewater per day in one wastewater treatment plant (WWTP). Large-scale centralized wastewater (CWW) plants typically treat the wastewater of one or several large population centers. In the West Bank, the West Nablus, Ramallah, and Al-Bireh WWTPs treat over 12,000 m<sup>3</sup> of wastewater per day.<sup>44 45</sup>
- 2) **Small-Scale Centralized Wastewater Plants** are small to medium-scale systems that use centralized technologies to treat the wastewater of villages or small towns rather than larger population centers. In the West Bank, the Ramoun-Taybeh WWTP, which has a capacity of 450-500 m<sup>3</sup> of wastewater per day, is an example of small-scale CWW.
- 3) **Community-Scale Decentralized Systems** employ decentralized technologies that can treat the wastewater of a large group of households. For example, one larger-scale decentralized wastewater (DWW) project in the West Bank town of Bidya treats the waste of 42 households (11.2 m<sup>3</sup>).<sup>46,47</sup>
- 4) **Household Decentralized Systems** are small-scale decentralized wastewater systems. The household DWW systems visited during field research were able to treat between 0.5 and 4 m<sup>3</sup> of wastewater per day.

These four scales display that rather than a duality of wastewater management options between centralized and decentralized, there is a spectrum of wastewater scale options. This range of wastewater scales allows planners to select the technology that is most appropriate to the local economic, environmental, and political situation. Currently, AIES has focused its wastewater treatment involvement on household DWW systems, whereas PWEГ works both with household DWW systems and small-scale CWW systems. The cooperative initiatives between AIES & PWEГ and AIES & HWE are household-DWW systems. In the West Bank, this broader range of wastewater management scale options allows actors to more easily move within and adapt solutions to the constraints imposed by the current political conflict, such as permitting restrictions, fragmentation of territory, and movement restrictions. More specific discussion of the obstacles to wastewater management in the West Bank will be pursued in the next chapter of this report.

*In the West Bank, this broader range of wastewater management scale options allows actors to more easily move within and adapt solutions to the constraints imposed by the current political conflict, such as permitting restrictions, fragmentation of territory, and movement restrictions.*

### 2.2b Rethinking Large-Scale Centralized Wastewater Management

Since the turn of the 20<sup>th</sup> century, the traditional response to wastewater management has been to build large-scale centralized WWTPs. This method of wastewater management is not always feasible in the West Bank, and currently accounts for a minority of wastewater treatment. Instead, many forms of smaller-scale wastewater treatment systems are prevalent. According to a sustainability assessment conducted by Al-Sa'ed and Mubarak, only 20% of the West Bank receives centralized wastewater services, and less than 2% of households in small communities are connected to sewerage networks.<sup>48 49</sup> Distributed wastewater treatment, through small-scale CWW, community-scale DWW, or household DWW, fits well with the West Bank's population distribution because 60% of the West Bank is rural, and this sort of low-density population distribution makes CWW infeasible as it is too costly.<sup>50</sup> The smaller-scale options have lower implementation costs, and operation and maintenance is inexpensive and relatively simple.<sup>51</sup>

This foray into using smaller scales of wastewater management is not unique to the West Bank. Many planners all over the world, including the United States, are rethinking the efficacy of CWW treatment and are exploring more distributed options when looking to expand wastewater treatment services.<sup>52</sup> This move to more distributed wastewater treatment options represents a strategic shift towards decentralization when CWW proves infeasible or impractical. Many local governments are developing decentralized septic systems because CWW is extremely costly to build and maintain (e.g. imagine maintaining the 10,500 km of public sewers in Los Angeles). Indeed, in Atlanta, 90% of residents use decentralized septic systems<sup>53</sup> and in Ruhr district, Germany there is a combination of 60 CWW plants and 4,100 smaller-scale plants.<sup>54</sup> CWW has become a default system with an almost ideological following due to historical influences rooted in wastewater planning in the early 19<sup>th</sup> century that are not always relevant to modern societal needs.<sup>55</sup>

This global debate over appropriate wastewater treatment scale displays the potential benefits of employing smaller-scale wastewater management systems in the West Bank. Currently, many view DWW as a stopgap option before obtaining CWW. While there is a clear need for CWW plants in the West Bank, in many cases smaller-scale wastewater management may be the most appropriate option and should not be treated as a mere stopgap solution.

### 2.2c Wastewater Management Systems Visited in the West Bank

The AU Practicum Team visited one large-scale CWW plant (West Nablus WWTP), one small-scale CWW plant (Ramoun-Taybeh WWTP), and five household decentralized systems, illustrating the wide range of wastewater management scales present in the West Bank.

**The West Nablus Wastewater Treatment Plant** is an example of a typical large-scale CWW plant and has a capacity of 12,000 m<sup>3</sup> of water per day, which is released into Wadi Zomar (Alexander Stream) without any reuse. The project was implemented by the German KfW Development Bank, and cost €30 million. The project was approved in 1997, but was greatly delayed and was not completed until 2012 (15 years later) . As is further illustrated in the educational box in this section, the West Nablus WWTP illustrates some of the primary drawbacks to large-scale CWW, namely long and complicated permitting periods and also overall management challenges.

**The Al Taybeh and Ramoun Wastewater Treatment Plant** is an example of a small-scale CWW plant that currently services 40-50% of the homes in the two municipalities, with a goal of servicing 80% of homes over the next 20 years. The €3 million plant was constructed by PWEГ in partnership with the Italian aid agency, Cesvi, and the Palestinian Union for Agricultural Work Committees (UAWC), as one of the main outputs of a PWEГ Food Security project that was funded by the European Union. The plant has a 450-500 m<sup>3</sup> daily capacity, which is about one-twentieth the capacity of Nablus West WWTP. The plant is compact, low-tech, and low-energy. As a smaller plant, it was less constrained by the broader obstacles of the Israeli-Palestinian political conflict and faced fewer conflict-based obstacles to construction. More information about this plant is located in the educational box in this section.

## Mini Case Study: The Benefits of Smaller Scale Wastewater Treatment

The AU Research Team visited two larger-scale wastewater treatment plants. The West Nablus WWTP is a traditional large-scale centralized plant, and encountered many obstacles and delays during construction. The Al Taybeh and Ramoun WWTP is an example of mini-centralization, and encountered far less obstacles and delays during construction. These two systems highlight the benefits of smaller-scale wastewater treatment options given the current political, economic, and conflict-induced obstacles to building wastewater treatment plants.

### The West Nablus Wastewater Treatment Plant

The West Nablus WWTP has a capacity of 12,000 m<sup>3</sup> of water per day, which is released into Wadi Zomar (Alexander Stream) without any reuse. The project was implemented by the German KfW Development Bank, and cost €30 million. The project was approved in 1997, but was greatly delayed and was not completed until 2012 (15 years later). This delay was due to various challenges, especially the escalated conflict that resulted from the second intifada, which began in September 2000, and also a very slow permitting process due to jurisdictional fragmentation, which is caused by the division of the West Bank Territory into areas A, B, and C. Jurisdictional fragmentation limits the ability to build WWTPs such as West Nablus because supplies and workers must obtain permits to cross between the three different areas. In the case of Nablus West, one of the roads near the plant was Area C, and to transport materials across this road a permit was required. This permitting process is notoriously slow, and adds complications and delays to the planning and construction phase.

An additional challenge with the West Nablus WWTP is that water recycling was not initially part of the project design. In order to add water recycling to the WWTP, additional permits and approvals have to be obtained, which may take years, if approved at all. Additionally, neither KfW nor the Palestinians working on the plant have a plan for how specifically to use the recycled wastewater. These deficiencies in planning likely results from a lack of experience in large-scale wastewater reuse schemes. In the meantime, the 12,000 m<sup>3</sup> of treated effluent is being discharged into Wadi Zomar, where the treated water mingles with untreated wastewater and then travels to Israel, where it is treated by the Israelis for a charge of 3 NIS (\$0.75) per m<sup>3</sup>. In essence, the Palestinians are paying twice to treat this water, representing economic loss. A key member of one Palestinian NGO used this example to highlight the importance of holistic wastewater management planning, where wastewater reuse is built into the design of all wastewater management schemes. The West Nablus example illustrates the principle drawback to larger-scale WWTPs in the West Bank: long and complicated construction periods.

**Nablus West Treatment Plant**



### Al Taybeh & Ramoun Wastewater Treatment Plant

The municipalities of Ramoun and Taybeh have a joint centralized WWTP that currently services 40-50% of the homes in the two municipalities, with a goal of servicing 80% of homes over the next 20 years. The €3 million plant was constructed by PWEG in partnership with the Italian aid agency, Cesvi, and the Palestinian Union for Agricultural Work Committees (UAWC), as one of the main outputs of a PWEG Food Security project that was funded by the European Union. The plant has a 450-500 m<sup>3</sup> daily capacity, which is about one-twentieth the capacity of Nablus West WWTP. The plant is compact, low-tech, and low-energy.

In contrast to the larger West Nablus plant, the project period lasted for three years, and the project integrated wastewater reuse with plant construction. The wastewater is used for agricultural purposes in the summer and industrial purposes in the winter. Due to the jurisdictional fragmentation of the West Bank and additional permitting processes with the Civil Administration in Area C, the plant was constructed in Area B. It would have been better from a public health standpoint to cite the plant further away from the municipalities; however building in Area B provides the Palestinians with more autonomy and fewer permitting limitations and delays. This illustrates how smaller scale projects can potentially have greater autonomy, as they can be constructed in the small and densely populated Areas A and B, evading permitting with the Civil Administration. Mini-centralization, when locally feasible, is a very effective form of wastewater management as it is able to serve more households than larger-scale DWW or household DWW, but is still small enough in scale to avoid many constraints imposed by the political climate of the region.

**Al Taybeh and Ramoun Treatment Plant**



Photo Credits: Natalie Wisely

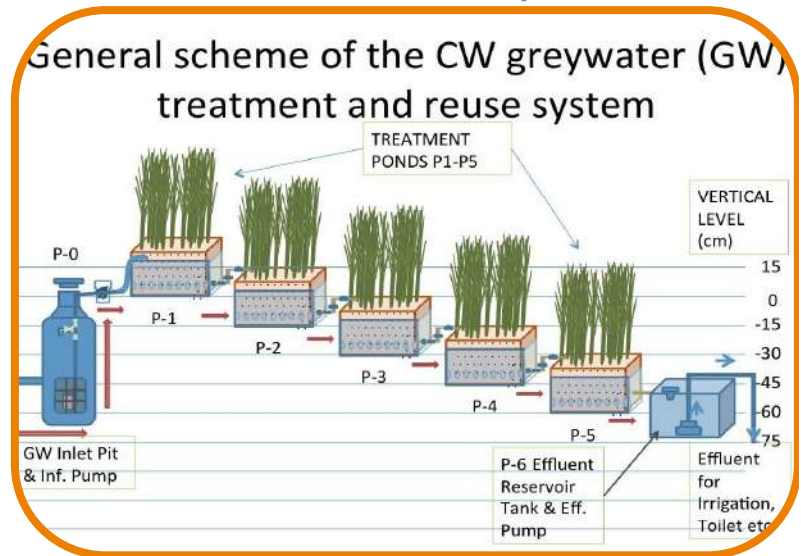
**The Five Household DWW systems** are part of a cooperative project between Israeli and Palestinian NGOs. There are two types of cooperative DWW systems: four systems are part of a partnership between AIES and HWE and one system is part of a partnership between AIES and PWEG. The AIES-HWE projects cost between \$3,000-\$4,000 each with a capacity to treat between 0.5 m<sup>3</sup> and 4 m<sup>3</sup> of water per day. The technology is a constructed wetland system with aerobic treatment (bacteria exposed to oxygen), and consists of a settling tank, a number of constructed wetland tanks, and a storage tank for the recycled water.

The AIES-PWEG system is slightly more technically advanced, and is a comprehensive treatment system for blackwater and graywater. It is a combination of an anaerobic (no oxygen) up-flow filter and an aerobic filter, and is buried below ground to eliminate any risk of smell. The blackwater system has a modified septic tank in a 100% sealed concrete system that must be emptied every 30 years. The cost of each system is between \$5,000-\$6,000, and has a capacity of 1 m<sup>3</sup>.<sup>56</sup> Both DWW system types are gravity fed (minimal energy usage), scalable, and modular. All materials are locally sourced and recyclable.

### 2.3. A Vision for Wastewater Management in the West Bank

Each Palestinian interviewed indicated that his or her ideal vision of wastewater management in the West Bank would be a CWW management system (large or small-scale CWW), which is consistent with other fieldwork conducted on this subject.<sup>57</sup> However, the obstacles imposed by the political conflict, along with other factors, pose challenges to implementing comprehensive CWW systems in the West Bank. These obstacles, which will be discussed in detail in the next chapter, often require planners to choose between what is best and what is feasible.<sup>58</sup> In order to avoid political constraints, there has been a default amongst NGOs, the Palestinian Water Authority (PWA), municipalities, and international organizations to focus on smaller-scale wastewater management systems and locating them in the smaller areas of the West Bank in which Palestinians have either full or partial control.

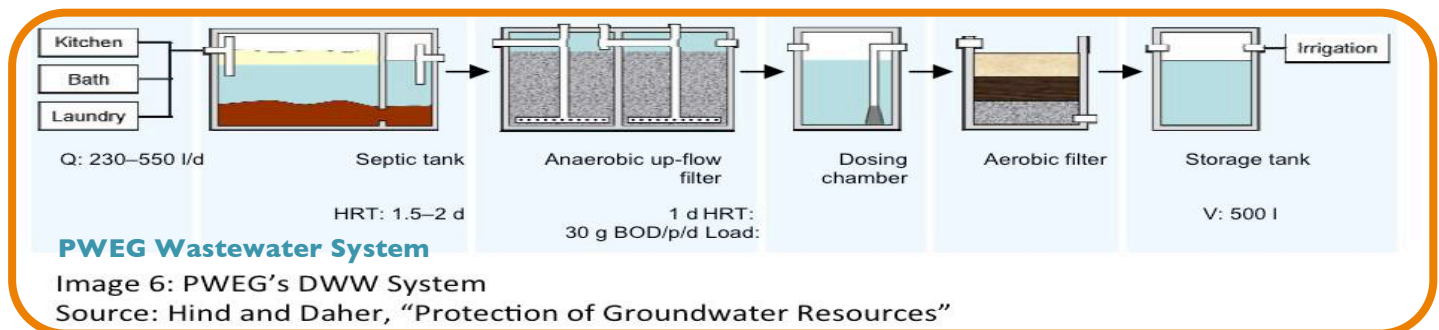
### AIES Wastewater System



Source: Arava Institute for Environmental Studies. "Decentralized Greywater Treatment and Reuse for Rural Communities." <http://arava.org/arava-research-centers/center-for-transboundary-water-management/decentralized-wastewater-treatment-and-reuse-for-rural-communities/>

While these systems are viewed as an intermediary option, they are technically, politically, and economically feasible.<sup>59</sup> <sup>60</sup> These move towards smaller-scale wastewater management systems has created a new option for wastewater management in the West Bank: municipally managed hybrid wastewater treatment systems.

A common theme in each municipality visited is that the municipalities are prepared to take action with or without the help or support of the PWA, and are often frustrated with the work and/or inaction of their Palestinian colleagues. A member of Ramoun's municipal council expressed, "In Ramoun, we're making a state of our own. We cannot wait for the government, we must help ourselves".<sup>61</sup> In Battir, there is a belief that the municipality is the primary authority and is responsible for service delivery, as there is no true Palestinian State: the Palestinian territories do not have consistent services throughout the West Bank such as police, fire departments, or even trash collection, and thus there is low expectation that wastewater treatment will be provided on a national level.<sup>62</sup>



# Cooperative Household-level Decentralized Wastewater Treatment Sites

## Site #1: AIES & HWE

Site #1 is located in a rural area of the West Bank that does not have CWW treatment and likely will not in the future as it is not densely populated. This system services one household of approximately 7 members and was installed in January 2014. The system is functioning, albeit it has a smell. The homeowner of site #1 was pleased with his DWW system, but cited concerns over the smell of the system. Aerobic systems will tend to have some smell, but the smell could be exacerbated by the use of chemicals in soaps that might be killing the bacteria, limiting ability to treat the wastewater. The homeowner is receiving direct economic benefits from the project by saving 30% on his monthly water costs.<sup>1</sup> The homeowner is receiving environmental and financial benefits (less septic system pumping, more water availability, improved health, agricultural benefits); however the peacebuilding significance remains limited. The homeowner does not regularly interface with the Israelis involved in the project and does not identify this project to his neighbors as a joint Israeli-Palestinian environmental peacebuilding project. Rather, it is viewed as a DWW project.

## Site #2: AIES & HWE

Site #2 is located in a mountainous rural area of the West Bank. While the homeowner indicated that he and his neighbors would prefer CWW, it is cost prohibitive due to energy intensity, and would cost \$60-\$65 million to service only 39,000 people. The local government has neither the capacity nor the tax base to construct a CWW plant, and is not receiving support from higher government authorities. Thus, DWW is an appropriate option for the town.<sup>1</sup> This system services one household of approximately 7 members and was installed in October 2013. The system is currently not functioning as the homeowner was displeased with his DWW system and has disconnected it due to the smell and neighbor complaints. On several occasions over the past nine months, the homeowner had intermittently connected and disconnected the system. The homeowner will likely not reconnect his system unless the smell can be eliminated. The homeowner is receiving environmental and financial benefits; however the peacebuilding significance remains limited. The homeowner does not regularly interface with the Israelis involved in the project and does not identify this project to his neighbors as a joint Israeli-Palestinian environmental peacebuilding project. Rather, it is viewed as a DWW project.

## Site #3: AIES & HWE

Site #3 is located in a town near a major population center, and is the only town in the area that is not connected to the WWTP. This is due to the hilly topography requiring pumping, which is cost prohibitive. This system services one household of approximately 8 members and was installed in January 2014. This system works well but has a smell. The homeowner in this town also works for the municipal centralized WWTP that services the rest of the area. He is very pleased with his DWW system and hopes others in his town will get one as well, although he does site the smell as a concern. He uses the wastewater to irrigate his diverse vegetable garden and orchard. The homeowner would prefer for his town to be connected to the WWTP, however as that does not seem feasible he has accepted DWW. He has an interesting vision for wastewater management in general: local graywater DWW with reuse and centralized blackwater treatment. The three main benefits he obtains from the DWW system is water reuse for irrigation, health benefits, and more water to share with neighbors.<sup>1</sup> The homeowner is receiving environmental and financial benefits; however the peacebuilding significance remains limited. The homeowner does not regularly interface with the Israelis involved in the project and does not identify this project to his neighbors as a joint Israeli-Palestinian environmental peacebuilding project. Rather, it is viewed as a DWW project.

## Site #4: AIES & HWE

In town where site #4 is located, 99% of the homes have water services, and 97% have centralized wastewater services. However, the section of the town where the home is located is very hilly, meaning that having a centralized connection is cost prohibitive due to pumping requirements. This system services one household of approximately 6 members and was installed in February 2014. This system works well but has a smell. The homeowner adopted a DWW system because he wanted to reuse the wastewater for irrigation purposes, and has a hilly and expansive garden. The homeowner cites the smell as the primary drawback to the DWW system.<sup>1</sup> The homeowner is receiving environmental and financial benefits; however the peacebuilding significance remains limited. The homeowner does not regularly interface with the Israelis involved in the project and does not identify this project to his neighbors as a joint Israeli-Palestinian environmental peacebuilding project. Rather, it is viewed as a wastewater project.

## Site #5: AIES & PWE

This system is part of a small town with no CWW treatment. This system services one household of approximately 7 members. The system works well, however the homeowner would like it to have more capacity than just 1m<sup>3</sup> as it can be overwhelmed during large house parties. The homeowner is an influential member of his community and a former head of a local agricultural council. He had learned of the problems of wastewater management at a workshop and wanted to set an example for his community by installing the system. Initially many of his neighbors did not accept the system, but upon seeing his success, 30-35 other households have requested that PWE build such a system. The homeowner uses the wastewater to irrigate his vegetable garden, which includes grape vines and a large cucumber greenhouse. His son was able to replicate this wastewater system and built one of his own.<sup>1</sup> The homeowner is receiving environmental and financial benefits; however the peacebuilding significance remains limited. The homeowner does not regularly interface with the Israelis involved in the project and does not identify this project to his neighbors as a joint Israeli-Palestinian environmental peacebuilding project. Rather, it is viewed as a DWW project.

*In order to avoid political constraints, there has been a default amongst NGOs, the Palestinian Water Authority (PWA), municipalities, and international organizations to focus on smaller-scale wastewater management systems.*

Residents of Battir believe that the PA is prohibited from providing such services because it would award the Palestinian government additional sovereignty, which is unacceptable to Israel.<sup>63</sup> The general disenchantment with the ability of the PWA to effectively manage wastewater in the West Bank has thus made smaller-scale municipal wastewater systems promising alternatives that are feasible in the short-term. This means that the work of local NGOs, such as AIES, PWEG, and HWE are extremely important as they work to build municipal capacity and assist in providing wastewater services.

Each system scale is not mutually exclusive, and several different treatment options can be employed to serve the variable needs of communities. For example, a community might be best served with a small-scale CWW system, but some homes may be located downhill of the plant and thus cannot be connected due to high pumping costs. Those homes could thus be serviced with community-scale or household DWW instead. Wastewater planners should thus consider how multiple scales of wastewater treatment could work together to provide comprehensive services to towns and municipalities. The next section provides a more in-depth discussion of the decentralized wastewater projects managed by donors, NGOs, and municipalities as alternatives or complements to large-scale CWW management.

*“In Ramoun, we’re making a state of our own. We cannot wait for the government, we must help ourselves”*

## 2.4. In Support of Distributed Wastewater Treatment Systems

There are many benefits unique to distributed wastewater systems, which include household and community-scale DWW and small-scale CWW. Community-scale DWW and Household DWW systems provide many household-scale benefits, such as reducing the inflow of water into cesspits and septic tanks, reducing the frequency and cost of cesspit/septic tank pumping, reducing the likelihood of cesspool seepage or overflow (thus reducing public health risks

and environmental damage), reducing freshwater use, and providing more sustainable water supplies.<sup>64 65</sup> There are additional potential economic benefits for households if they consume or sell produce grown with recycled wastewater.<sup>66</sup>



**Ancient Water Systems in Battir**

Photo Credit: Natalie Wisely

In addition to these two DWW systems, small-scale CWW can be categorized as a distributed wastewater treatment system. All three system scales are a lower-cost and easier to manage alternative to expensive large-scale CWW plants, allowing for wastewater treatment in less urbanized areas of the West Bank.<sup>67</sup> These smaller systems are also more flexible, adaptable, and can be more locally appropriate than a large and uniform CWW system. These systems also have more abstract benefits for the residents of the West Bank, namely their ability to circumvent the broader political conflict, and potential to “build Palestine”. However there are also drawbacks to distributed wastewater management systems, which include challenges to PWA legitimacy and their highly localized impacts.

### 2.4a Distributed Wastewater Treatment as a Means to Circumvent the Political Conflict

A major benefit of distributed wastewater treatment systems is that their smaller sizes often allow them to circumvent the limitations placed on large-scale CWW by the political conflict. Typically, larger-scale projects must be built in parts of the West Bank under Israeli control. By contrast, distributed systems are both easier to fund and build because they can be constructed in areas in which Palestinians have autonomous control of the territory. Distributed wastewater projects offer ways in which actors can work right now to ‘build

Palestine's infrastructure and improve the environment, health, and economy of a local area. NGOs, such as our project partners, focus their cooperative initiatives on small-scale projects because they are within their control and can be implemented effectively, efficiently, and with relative ease.<sup>68</sup> Focusing on smaller scale projects is thus an appropriate strategy from feasibility, sustainability, and political reasons and this model should be continued.



Photo Credit: Matt Smither

#### 2.4b Efforts to 'build Palestine' and Issues of Legitimacy

There is a strong desire on the part of Palestinians at all levels (national government, municipal government, NGO, local citizen) to 'build Palestine' by investing in infrastructure projects such as wastewater treatment. Distributed wastewater treatment options enable those invested in the future of Palestine to take concerted action without bureaucratic and political delays. There is an urgent need to 'build Palestine' from an economic, human health, and environmental standpoint. Freshwater demand is growing rapidly, and already outpaces water and wastewater system capacity today.<sup>69</sup>

Yet, there is also a desire to 'build Palestine' so it can be "ready" for full statehood, and also to 'build Palestine' in order to provide the PA with more authority and thus more bargaining power with Israel.<sup>70</sup> Interview subjects at both the PWA and local municipalities expressed that part of their legitimacy and authority stems from their ability to provide services to citizens.<sup>71</sup> Service delivery

is a typical responsibility of a sovereign government, and increasing the capacity of the PWA to provide these services helps Palestinians to gain a sense of "statehood", even if it is merely symbolic.<sup>72</sup> It can thus be argued that increasing wastewater infrastructure, regardless of scale, builds Palestine, contributing to increased legitimacy. This, according to Zeitoun, is the key to enhanced bargaining power.<sup>73</sup> 'Building Palestine' by improving its wastewater infrastructure counteracts the asymmetries of power and capacity that persist between Israel and Palestine by increasing Palestinian sovereignty (control) over its internal water resources, which can assist in changing the strategic context of relations and negotiations between Israel and Palestine.<sup>74</sup>

However, decentralized systems of management may also challenge the PWA's model of centralized authority.<sup>75</sup> The PWA consciously focuses on large-scale CWW, leaving distributed wastewater management projects to NGOs, the donor community, and Palestinian municipalities.<sup>76</sup> The PWA acknowledges that the quality of water services contributes to their legitimacy, but also expresses frustration as to how to manage a resource that is out of their control.<sup>77</sup> Because the PWA is often restricted by the conflict, it

has no choice but to rely upon NGOs and donors to implement smaller-scale wastewater projects, even if it this may run the risk of de-legitimizing the PWA. One NGO representative thus expressed the importance of having direct partnerships with the municipalities in which these decentralized projects are being built. He argues for this approach because he does not want his organization to substitute for the municipality and thus take away a certain amount of capacity or legitimacy.<sup>78</sup>

*Service delivery is a typical responsibility of a sovereign government, and increasing the capacity of the PWA to provide these services helps Palestinians to gain a sense of "statehood", even if it is merely symbolic.*

#### 2.4c Drawbacks to Decentralized Wastewater Treatment in the West Bank

In addition to legitimacy concerns, there are other drawbacks to working at a smaller-scale level. First, small-scale projects have mainly localized impacts, with limited ability to influence the environment, economy,



public health, and cooperation as a whole, or to dramatically increase access to wastewater services.<sup>79</sup> By virtue of its small size, household-DWW has the least amount of broad impact on the environmental, health, or political climate of the West Bank, but is the focus of the AIES-PWEG and AIES-HWE cooperative projects.

Current efforts to focus on distributed technologies, especially household-DWW projects located in Palestinian-controlled areas of the West Bank, make it more difficult to employ the type of cooperative, trans- and cross-boundary, and coordinated water resources management that is required to govern the use of shared water resources in the region.<sup>80</sup> Peacebuilding theorist John Paul Lederach argues that in order to build peace, projects must take risks. These cooperative household-DWW projects may not involve enough risk-taking to truly contribute to conflict transformation.<sup>81</sup> It is also unclear if by working under the radar, these projects are working to challenge Israeli hydrohegemony, or are unwittingly reinforcing it by attempting to work around the broader political conflict rather than to address it head-on.

*These cooperative household-DWW projects may not involve enough risk-taking to truly contribute to conflict transformation*

However, there is certainly an important role that household-DWW and other distributed technologies can play within the diversity of wastewater management scales and treatment options. As evidenced by the phenomenon of community-scale DWW, household wastewater projects also have the potential to be scaled up and reach a wider audience in terms of health, environment, economics, and cooperation. If environmental cooperation between Israelis and Palestinians happens at a larger scale rather than staying primarily at the local level, there may be higher potential for broader cooperation over the environment to lead towards broader political cooperation, thus increasing the chances for conflict transformation. Thus, while household-DWW projects are important as pilot projects displaying the efficacy of technology and project management abilities, project partners should enhance their focus on scaling up their efforts to community-scale DWW and small-scale CWW.

## 2.5. Findings

There are five principal findings from this section's analysis of the environmental peacebuilding potential of the cooperative decentralized wastewater projects,

which is evaluated using the lens of wastewater management and scale.

*2.5a The broad preference for large-scale CWW in the West Bank is often inconsistent with local appropriateness and broader global trends*

In order to best manage wastewater in the West Bank, multiple scale options of wastewater treatment should be considered for each local situation. There is a preference for large-scale centralized wastewater treatment in the West Bank. Globally, however, many planners are beginning to question the effectiveness of centralized treatment given its high capital costs and complicated maintenance. Indeed, smaller-scale wastewater treatment technologies may be the best option for many parts of the West Bank, the political conflict notwithstanding, and should not merely be viewed as a stopgap measure.

*2.5b Project Partners Provide Wastewater Treatment where the PWA Cannot*

Various obstacles limit the construction of large-scale CWW systems and the PWA's ability to effectively manage wastewater in the West Bank. These obstacles make the localized work of NGOs such as the project partners extremely important as they can fill the gaps in management that the PWA and larger, centralized planning will not be able to fill.

*2.5c A Primary Project Benefit is 'Building Palestine'*

In addition to environmental, health, and economic benefits, 'building Palestine', or creating the perception of 'building Palestine', is an extremely important benefit of wastewater infrastructure projects at any scale. 'Building Palestine' through improved infrastructure increases the legitimacy of the PA by affirming its ability to provide services to its citizens, a core responsibility of a legitimate government. In addition, 'building Palestine' counteracts the asymmetries of power and capacity that can limit the PA's ability to effectively negotiate with Israel. Most of the primary benefits derived from the cooperative wastewater projects, such as 'building Palestine' or broadly improving environmental and public health, are uni-national benefits for Palestine, rather than shared benefits between both Israel and Palestine.

*2.5d Environmental Peacebuilding as a Secondary Project Benefit*

The cooperative household-level DWW systems present opportunities for environmental peacebuilding by increasing interaction and understanding amongst Israelis and Palestinians, primarily at the technical level.

While significant, peacebuilding benefits are secondary benefits of the projects. The primary project benefits are the uni-national advantages of increased environmental protection, improved health, economic savings, and increased national sovereignty and bargaining power.

### 2.5e Smaller Scale Projects have Smaller Spheres of Influence

The household-level DWW systems managed by the project partners may be limited in their effectiveness to provide the aforementioned primary and secondary benefits as the projects are highly localized, household-level projects. Focusing on smaller scale projects is appropriate from feasibility, sustainability, and political standpoints, but also limits increasing community and regional benefits by their highly localized nature.

## 2.6. Recommendations

These observations have led to three recommendations to the project partners, AIES and PWEA.

1. *Distributed wastewater treatment should be elevated to a preferred wastewater management option.* The broader global rethinking of the efficacy of large-scale CWW reaffirms the distributed treatment models that the project partners focus their efforts on. Project partners should include an educational component in their cooperative initiatives that informs communities of the benefits of decentralized wastewater treatment systems and to emphasize that these are not merely stopgap measures but are, in some cases, the most appropriate management response.

2. *Project partners should continue to effectively involve local and national authorities in wastewater treatment projects.* These cooperative wastewater projects are an excellent opportunity to build government capacity in wastewater treatment, thus 'building Palestine'.

3. *All three decentralized wastewater management systems should be considered for cooperative project initiatives.* Projects that are scaled up to community-scale DWW or small-scale CWW would enable larger portions of a population to obtain wastewater services, increasing the impacts of project benefits. 'Building Palestine' and improving both environmental and public health could potentially provide an alternative context to frame the relations between Israelis and Palestinians.

An evaluation of the environmental peacebuilding potential of the cooperative decentralized wastewater systems requires a multifaceted analysis. It is not possible to evaluate these projects without a firm understanding of the context of wastewater manage-

ment in the West Bank, which is centered on the question of which scale of wastewater management system to use. Our partners currently focus their cooperative projects on household-level decentralized systems, a scale choice with significant benefits and also drawbacks. Further sections in this report will continue to evaluate the peacebuilding potential of these initiatives from various other lenses. One such important lens is assessing the balance of power and asymmetries between Israel and Palestine. Power, more so than any other issue discussed in this report, is a direct influencer on the feasibility of wastewater management scale, and is a strong influencer towards decentralized wastewater treatment systems.

<sup>43</sup> Y. Mogheir, T. Abu Hujair, Z. Zomlot, A. Ahmed, and D. Fatta. "Treated Wastewater Reuse in Palestine," prepared for *International Conference on Water Value and Rights* (Ramallah-Al-Bireh, Palestine, 2005).

<sup>44</sup> "The New Mandate for Palestine's Water," *Global Water Intelligence* 14, no. 11 (2013), accessed July 3, 2014

<http://www.globalwaterintel.com/archive/14/11/general/new-mandate-palestines-water.html>; Civil Administration. "West Nablus Sewage Treatment Facility." <http://www.cogat.idf.il/901-9903-en/Cogat.aspx>

<sup>45</sup> There are even bigger large-scale CWW plants, such as the Blue Plains Advanced Wastewater Treatment Plant in Washington, D.C., which treats over 1.25 MCM of wastewater per day

<sup>46</sup> An example of one such project is a Septic Tank – Horizontal Flow Constructed Wetlands project in Bidya, which is being implemented by PARC (Palestinian Agricultural Relief Committee) and funded by Austrian donors. This project has a capacity of 11.2 cubic meters per day and treats 42 different households' waste. Another system using horizontal flow constructed wetlands was designed and implemented by PHG in Hajja, and it has a capacity of 40 cubic meters per day and is reusing that wastewater for irrigation.

<sup>47</sup> Ghadeer A. Arafeh, "Process Monitoring and Performance Evaluation of Existing Wastewater Treatment Plants in Palestinian Rural Areas/West Bank," (MSc Thesis, Birzeit University, 2012).

<sup>48</sup> AIES, Interview by AU Practicum Team, June 9, 2014.

<sup>49</sup> Rashed Al-Sa'ed and Sana' Mubarak, "Sustainability Assessment of Onsite Sanitation Facilities in Ramallah-Albireh District with Emphasis on Technical, Socio-Cultural and Financial Aspects," *Management of Environmental Quality* 17, no. 2 (2006).

<sup>50</sup> Monther Hind and Rehab Daher, "Protection of Groundwater Resources by Grey Wastewater Management and Reuse: When Conventional Wastewater Management Is Not Affordable," (Ramallah: Palestinian Wastewater Engineers Group, 2006).

<sup>51</sup> Ibid.

<sup>52</sup> Eun Jung Lee et al., "Assessing the Scale of Resource Recovery for Centralized and Satellite Wastewater Treatment," *Environmental Science & Technology*, no. 47 (2013).

<sup>53</sup> Colin Crawford, "Wastewater Resources: Rethinking Centralized Wastewater Treatment Systems, Land Use Planning, and Water Conservation," *The Urban Lawyer*, no. 42/43 (2010/2011).

<sup>54</sup> H. Orth, "Centralised Versus Decentralised Wastewater Systems?" *Water Science & Technology* 56, no. 5 (2007).

<sup>55</sup> Ibid.

<sup>56</sup> Participant C, Interview by AU Practicum Team, West Bank, June 2014

<sup>57</sup> Al-Sa'ed and Mubarak, "Sustainability Assessment of Onsite Sanitation Facilities in Ramallah-Albireh District with Emphasis on Technical, Socio-Cultural and Financial Aspects." *Management of Environmental Quality: An International Journal* 17, no. 2 (2006): 140-156.

<sup>58</sup> An example is the aforementioned controversy over the settlement inclusion, which has delayed the production of the Hebron WWTP. The most technically and environmentally efficient form of wastewater management would be to have one wastewater treatment system. However, due to the conflict and the controversy surrounding settlements, the area may end up with two separate wastewater management systems. This would be immensely inefficient and a waste of capital but is politically feasible to accomplish.

<sup>59</sup> AIES, Interview by AU Practicum Team, June 2014.

<sup>60</sup> Participant S, Interview by AU Practicum Team, Israel, June 2014

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<sup>61</sup> Member of Ramoun Municipality, Interview by AU Practicum Team, West Bank, June 2014

<sup>62</sup> Members of Battir Municipality, Interview by AU Practicum Team, West Bank, June 2014

<sup>63</sup> Ibid.

<sup>64</sup> Hind and Daher, "Protection of Groundwater Resources by Grey Wastewater Management and Reuse: When Conventional Wastewater Management Is Not Affordable."

<sup>65</sup> Othman A. Al-Mashaqbeh, Ayoup M. Ghrair, and Sharon B. Megdal, "Grey Water Reuse for Agricultural Purposes in the Jordan Valley: Household Survey Results in Deir Alla," *Water* 4(2012).

<sup>66</sup> Ibid.

<sup>67</sup> Hind and Daher, "Protection of Groundwater Resources by Grey Wastewater Management and Reuse: When Conventional Wastewater Management Is Not Affordable."

<sup>68</sup> Participant D, Interview by AU Practicum Team, West Bank, June 2014; Participant E; Participant C.

<sup>69</sup> Participant G, Interview by AU Practicum Team, West Bank, June 2014

<sup>70</sup> Friends of the Earth Middle East - Palestine, Interview by AU Practicum Team, West Bank, June 16, 2014; Palestinian Water Authority, Interview by AU Practicum Team, West Bank, June 15, 2014; PWEA, Interview by AU Practicum Team, West Bank, June 11, 2014.

<sup>71</sup> Palestinian Water Authority, Interview by AU Practicum Team, West Bank, June 2014.

<sup>72</sup> Erica Weinthal, "The Promises and Pitfalls of Environmental Peacemaking in the Aral Sea Basin," in *Environmental Peacemaking*, ed. Ken Conca and Geoffery Dabelko (Washington, D.C.: Woodrow Wilson Center Press, 2002).

<sup>73</sup> Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Conflict* (New York: I.B. Tauris, 2008).

<sup>74</sup> Weinthal, "The Promises and Pitfalls of Environmental Peacemaking in the Aral Sea Basin."

<sup>75</sup> Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Conflict*.

<sup>76</sup> Participant B, Interview by AU Practicum Team, West Bank, June 2014

<sup>77</sup> Indeed, the Minister of Water often recounts how he is the 'Minister of Nothing', as Palestinian water is not truly controlled by Palestinians, but rather is being held hostage by the broader political conflict.

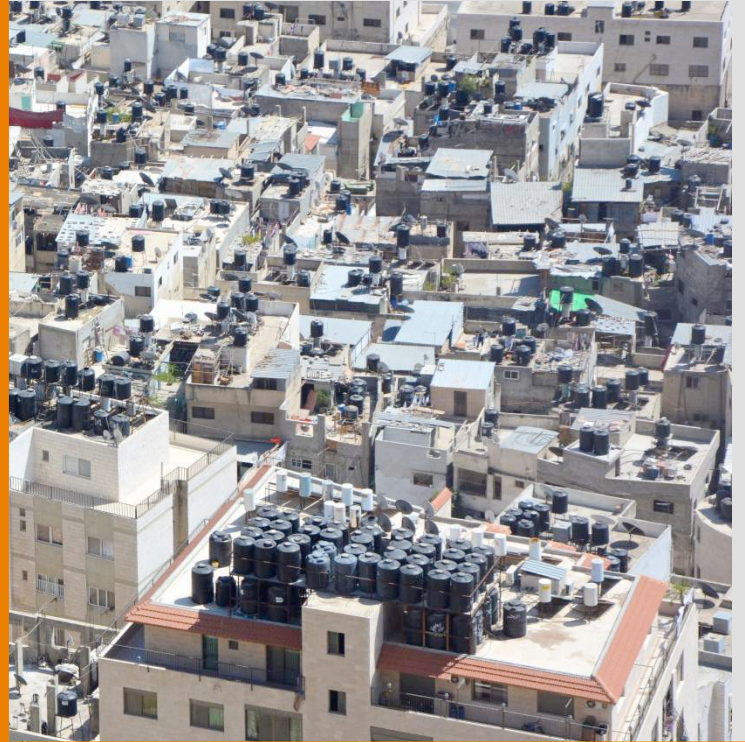
<sup>78</sup> Participant C, Interview by AU Practicum Team, West Bank, June 2014

<sup>79</sup> Brooks, D. and J. Trottier (2010). "Confronting water in an Israeli-Palestinian peace agreement." *Journal of Hydrology* (382): 103-114.

<sup>80</sup> See Abitbol & Schoenfeld, Brooks & Trottier, Kliot & Shmueli, among many others

<sup>81</sup> John Paul Lederach, *The Moral Imagination: The Art and Soul of Building Peace* (Oxford: Oxford University Press, 2004).

# COOPERATIVE INITIATIVES AND RELATIONS OF POWER



### 3. COOPERATIVE INITIATIVES AND RELATIONS OF POWER

#### 3.1. Introduction

Transboundary water cooperation often serves to highlight the role of power in shaping understandings, expectations and perceptions of resource management that exist across conflictual borders. PWEG, HWE, and AIES's participation in household-level cooperative decentralized wastewater systems occurs against the backdrop of inequitable power structures and asymmetrical conflict, making the assessment of power structures essential in understanding their projects' peacebuilding significance. This section assesses the environmental peacebuilding significance of transboundary wastewater cooperation through its influence on current asymmetrical power structures.

#### 3.2. Theories of Power

Understandings, expectations, and perceptions of transboundary water cooperation are largely shaped by Israel's history as the hydrohegemon, whereby the state of Israel has exhibited near absolute power within the region's water sector. For Palestinian research participants, this narrative recounts Israeli domination over Palestine. In contrast, the Israeli narrative illustrated is shaped by histories of oppression and persecution. Within this narrative, shared historical memories induce fear, which serves to justify actions in which survival is dependent upon self-determination, rather than cooperation or collaboration with others.

##### 3.2a Power Asymmetry

Power, and its importance to the water sector, is heightened as a result of the power asymmetries that exist between Israel and Palestine. In many ways, the power relations at play within the water sector are a microcosm of the broader, ongoing power struggles that exist between the two. Israel maintains its hydrohegemony in the region through various power strategies and tactics, such as through the exertion of ideational power (power over ideas) and bargaining power (the ability to set the political agenda).<sup>82</sup>

##### 3.2b Power and Cooperative Relationships

Participants interviewed in this rapid appraisal expressed that future willingness for cooperation with 'the other' were hindered by past experiences in which power asymmetries were exploited in initiatives presented as cooperative.<sup>83</sup> For example, because of the broader political situation, restrictions on movement pose limitations on some cooperative projects (part of "The Matrix of Control", as discussed below). Often,

Palestinians are unable to travel as freely as Israelis and thus, are often limited in their ability to contribute to cooperative projects depending upon location. In one interview with Palestinian water officials several individuals were unable to attend because the town they resided in was on an Israeli lock-down, prohibiting any movement in or out of the area.<sup>84</sup><sup>85</sup> One of the participants interviewed on this day, had not traveled back to his home in several days, knowing that upon entering the town, he would be unable to leave again, and therefore also unable to work.

Negative experiences such as these permeate water cooperation, making it difficult or nearly impossible to disassociate prior interactions in which "domination is dressed up as cooperation," from cooperative projects.<sup>86</sup> Both Palestinians and Israelis described experiences of "cooperation" with the other as challenging, often citing their experience with institutional bodies such as the JWC as examples to emphasize their frustration.<sup>87</sup> In these conversations, power inequities were cited as obstacles to genuine cooperation. Moreover, Palestinians expressed that institutional bodies such as the JWC actually provided benefits to Israel, the already advantaged hydro-hegemonic power. In their descriptions of the JWC, Palestinian interviewees often depicted a bureaucratic body that used its power to manipulate Palestinian politics. Permit approval for water-related infrastructure often depended upon what Palestinian interviewees viewed as political stipulations, most notably the incorporation of Israeli settlements into Palestinian wastewater management systems.

Further, diverging political ideologies or aspirations similarly affect partner goals and expectations. A Friends of the Earth Middle East (FoEME) representative described her experience in a cooperative water project during which she was taken to an Israeli settlement in the West Bank. Unaware that the project would include a trip to an Israeli settlement, this representative described feeling blindsided, stating, "I would have never gone."<sup>88</sup> Moreover, during this trip a member of the community made discriminatory remarks calling "all Palestinians terrorists"<sup>89</sup>. While settlements and settlers are part of the system, political ideology is a roadblock for addressing the issue of wastewater and demonstrates one way in which environmental protection does not serve as a positive enough benefit to sustain cooperative projects. Similarly, increased water availability is not sufficient in incentivizing cooperation when the perception is that injustice and political violations of rights are at the root of lack of water access.

### 3.3. Power: A Primary Obstacle to Wastewater Management

Power is at the root of many obstacles that inhibit the ability to implement best practices of wastewater management.<sup>90</sup> Both Israeli and Palestinian individuals expressed that water and the environment are being 'held hostage' by the current conflict, a conflict centered on relations of power.<sup>91</sup> These obstacles include:

- "The Matrix of Control": Jurisdictional fragmentation, permitting, and mobility restrictions
- Asymmetries of power
- Asymmetries of capacity
- Controversy over settlement connections

#### 3.3a The Matrix of Control: Jurisdictional Fragmentation, Permitting, and Mobility Restrictions

Jeff Halper describes the "Matrix of Control" as a complex regime of Israeli control over Palestinian territories and parts of Jerusalem that includes an interlocking series of mechanisms that do not require physical occupation but still allow Israel to control nearly every part of Palestinian life.<sup>92</sup> These mechanisms are primarily seen through jurisdictional fragmentation via highways, bypass roads, and dividing the West Bank into Areas A, B, and C, and have weaved dense webs of bureaucracy and legal frameworks.

The fragmentation of the West Bank was part of the Oslo Accords, which during its implementation was viewed as an interim agreement to last only a few years. However, two decades later, these areas have created political and administrative hurdles to building wastewater infrastructure in the West Bank, especially for large-scale CWW. Area A, which incorporates the major Palestinian population centers, makes up about 10% of the West Bank, and is the only area where Palestinians have autonomous control. Area B makes up about 30% of the West Bank, and is administered under Israeli authority for security matters and Palestinian authority for civil matters. Area C makes up 60% of the West Bank, and is under direct Israeli military control through the Civil Administration. Much of Area C is agriculturally and resource rich, containing Israeli settlements, key resources, roads, and fertile soil.<sup>93</sup> These areas are not contiguous, and are fragmented across the West Bank. This makes planning and development highly complex, as it is very difficult for Palestinians to obtain permitting approval in Area C.

#### Map of West Bank Fragmentation



Source: ProCon.org "Map- The West Bank (Administrative Divisions as of 2000)." ProCon.org. Last modified July 2, 2008. <http://israelipalestinian.procon.org/view.backgroud-resource.php?resourceID=1170>

*The World Bank estimates that the lack of access Palestinians have to Area C has caused total losses of about \$3.4 billion*

The World Bank estimates that the lack of access Palestinians have to Area C has caused total losses of about \$3.4 billion.<sup>94</sup> Indeed, as of 2011, the Civil Administration had planned only 1% of Area C for Palestinian Development.<sup>95</sup> The Civil Administration often denies permits or places barriers to large-scale CWW because of security concerns. For example, the West Nablus WWTP took 15 years to complete due to permitting and mobility restrictions caused by jurisdictional fragmentation, amongst other factors that caused delays, such as the Second Intifada. These bureaucratic and legal mechanisms have created a system that limits, among other things, physical movement, work, building, and infrastructure.<sup>96</sup>

This Matrix of Control ensures that the Palestinian territories remain “truncated, weak, and dependent... [with] severely limited sovereignty”<sup>97</sup> and has placed limits on Palestinians’ ability to effectively manage or invest in wastewater infrastructure. The resulting jurisdictional fragmentation is the largest barrier limiting comprehensive wastewater planning in the West Bank, and as such, it is no surprise that many wastewater planners opt for smaller-scale wastewater treatment methods. This Matrix of Control is enabled by the asymmetries of power and capacity that persist between Palestinians and Israelis in the region.

### 3.3b Asymmetries of Power and Capacity

Mark Zeitoun highlights the power asymmetries that persist between Israelis and Palestinians, resulting in a hydrohegemonic relationship.<sup>98</sup> Zeitoun argues that power and control of resources are squarely centered in the hands of the Israelis, and Israel’s economic strength, combined with its hegemonic advantage, allows Israel to maintain control over Palestinian territories. Control over transboundary water flows is largely in Israeli hands, and has been since 1967. The broader conflict continues to enable power asymmetries and hydrohegemony, which is a main reason why Palestinians have limited control over their own water resources management.<sup>99</sup>



**The Highly Polluted Wadi Nar in the Kidron Valley**

Photo credit: Natalia Oyola-Sepulveda

There are also large asymmetries of capacity when comparing the PWA to the Israeli Water Authority (IWA). These asymmetries of capacity underline the asymmetries of power and the Matrix of Control that persist in the conflict, however these asymmetries in capacity are not entirely attributable to the political conflict. Other factors influencing asymmetries of capacity include donor dependency, poor separation of powers within the Palestinian governance, uneven technical competence, enormous infrastructural challenges and deficiencies, and internal divisions between local providers and the PWA.

Israel has some of the most advanced wastewater treatment systems in the world, where nearly 70% of Israel’s municipal wastewater is treated to secondary or even tertiary levels and reclaimed for large-scale agriculture.<sup>100</sup> By contrast, Palestinian capacity is far behind. Only 20% of Palestinians in the West Bank have wastewater services, and a negligible amount of wastewater is currently being recycled. Many wastewater treatment facilities are over-used, and with efficiency levels at only 10-30%.<sup>101 102</sup> Improper treatment of wastewater is a major source of pollution to springs and aquifers, and also facilitates the spread of diseases such as Hepatitis A.<sup>103</sup>

Furthermore, the PWA is handicapped, and it cannot take any actions without the approval of at least the Joint Water Committee (JWC). Frustration with their own lack of capacity is a common sentiment shared among the individuals the AU Practicum Team interviewed at the PWA. One PWA employee expressed that under occupation it is nearly impossible to manage and develop Palestinian water resources; instead, it is mostly crisis management and mitigation. Indeed, some of the individuals interviewed indicated that the PA in general is unable to be an autonomous, legitimate government, as it is obliged to obtain permission from the Israeli government and is highly dependent on international funding to build new projects.<sup>104 105</sup> Given these institutional asymmetries of capacity, actors on the ground such as PWE, HWE, and AIES, who have technical expertise and the capacity to build successful smaller-scale projects, are highly valuable players in the wastewater sector.

### 3.3c Settlement Connections

Incorporating Israeli settlements into Palestinian wastewater management systems is highly controversial. In some cases, in order for Palestinians to obtain permitting approval to build large-scale CWW plants, the Israeli members of the JWC or the Civil Administration, two organizations in which Israel wields extensive asymmetric power, stipulate that nearby Israeli settlements must also be connected to the systems.

Palestinians refuse to incorporate settlements into their planning because the settlements are illegal under international law, and connecting them to such services as wastewater treatment would legitimize their existence. Thus, permits are not approved.

An example of this is the municipality of Hebron, which desperately needs centralized wastewater treatment. The town of Hebron has 250,000 residents, and the surrounding settlers include another 10,000 people. The \$35 million WWTP is located in Area C and has been built and is ready to use, but is not operational because the Israeli Civil Administration stipulated that Israeli settlements be connected to the WWTP. The WWTP in Hebron is sitting idle as untreated effluent flows into the surrounding environment, causing extreme stench, an increasing mosquito population, groundwater pollution, and other environmental hazards.<sup>106 107</sup> The controversy over the settlements is the primary reason why this plant remains inactive.

### 3.4. Demonstrating Benefits & ‘Building Palestine’

Demonstrating the mutual benefits of cooperative wastewater management can lessen the negative impact and limitations of power asymmetries.<sup>108</sup> Currently, AIES PWE, and HWE’s joint wastewater initiatives attempt to illustrate expanded water availability and environmental sustainability as a shared benefit achieved through the treatment of wastewater. In this context, environmental sustainability is a shared benefit that incentivizes both sides to cooperate. However, this also demonstrates a weakness or missed opportunity on the part of the partners.

While expanded water availability and environmental sustainability may be effective in bringing parties to the table, they cease to be a sufficient reason for those parties to stay engaged. It becomes difficult to identify projects that are equally beneficial to both parties as unequal access to water creates diverging interests for those involved. The asymmetries and differing priorities for the parties result in deviating expectations and perceptions for cooperation.

As relational narratives are reintroduced, parties struggle to find motivation to continue in cooperation. One participant illustrated the negative impact of power asymmetry on cooperative projects when he stated, “You are my neighbor, but you have water, and I don’t.”<sup>109</sup> The demonstrated benefits do not address the inequities at the root of the issue. For the Palestinians, as long as the inequities are not addressed, injustice will continue.

As was discussed in the previous section, these asymmetries are partially addressed through the uni-national benefit of ‘building Palestine’. Through the empowerment of Palestinians, these initiatives have the potential to provide alternatives to the current power structures that exist. Over time, if these cooperative initiatives are broadened, they may be able to empower the West Bank politically, economically and technologically, thus, leveling the playing field through the building of Palestine, a core benefit of the cooperative wastewater projects.

*While expanded water availability and environmental sustainability may be effective in bringing parties to the table, they cease to be a sufficient reason for those parties to stay engaged.*

## 3.5. Findings

### 3.5a Demonstrating Benefits

The Matrix of Control, asymmetries in power, and asymmetries in capacity are incredibly apparent in the diverging Israeli and Palestinian participant narratives. For instance, inequities are unavoidable, even in the water sector for Palestinians. Permits for travel in order to participate in cooperative projects are often denied, making cooperation difficult and also serving to remind Palestinians of existing inequities. On the other hand, for Israelis, inequities that challenge cooperative efforts are less apparent. For example, Israeli interviewees expressed that the process of permitting and experiences with the Civil Administration was the same for both Palestinians and Israelis.<sup>110</sup>

At the technical level, many interviewees demonstrated an unwillingness to create issue-linkages between political and technical spheres. For instance, several participants interviewed explicitly underscored the point that they do not work in politics, but rather within the technical sector. The narratives heard illustrate a desire to work within a technological space that avoids political issues and allows for increased cooperation and productivity with the goals of environmental protection and expanded water availability. This failure to create issue-linkages between the two sectors appears to derive from the perception, based upon prior experiences, that linking water initiatives to political inequities limits the abilities to achieve these goals. While this may be the case in the short-term, unwillingness to link water issues to the inequities from which they stem limits the potential of these initiatives in the long-term. One of the most obvious resulting limits is the initiatives’ inability to develop and demon-



strate satisfactory mutual benefits that would effectively incentivize broader transformation. Joint initiatives should explore opportunities for linkages between the hegemonic narrative and joint cooperation in order to effect more extensive peacebuilding. The ability to link joint water cooperation with stability for Palestine and security for Israel represents one under explored way in which initiatives could further influence power asymmetries.

### 3.5b 'Building Palestine'

#### *Bargaining power*

Bargaining power is an essential aspect in the development of a counter-hegemonic strategy.<sup>111</sup> Bargaining power gives one party the ability to wield influence over the other. The responsibility to provide services such as water and electricity to the population falls upon the governing body. The Palestinian Authority's inability to fulfill this role serves to delegitimize it as a governing body, thus, decreasing its power. Although the government does not sponsor the wastewater projects assessed, the fact that it is not the one providing these basic services further fuels the dissatisfaction with the Palestinian government. Moreover, it encourages Israeli criticism of the Palestinian government, further diminishing its legitimacy as a governing body. In part due to this delegitimization of the PA, PWEG goes to great lengths to ensure that its projects are aligned with PA and PWA goals, that there is communication between them and the government authorities, and that their projects work to build government capacity by involving them in their projects. The potential for long-term transformation of bargaining power is highly dependent upon project ability to broaden in scale and to be taken up in conjunction with centralized wastewater management systems. Through the implementation of these initiatives, a collective solution to the issue of water shortage further empowers Palestinian territories in that it removes dependence upon the hegemon, simultaneously weakening the grip of Israel over Palestine.

#### *Material Power*

The economic benefits, technological achievements, and international financial support stemming from these initiatives also serve to increase the material power of Palestine. At the household-level, these initiatives allow Palestinians to further take part in the agricultural sector. The ultimate goal for many of the Palestinian beneficiaries is to sell crops that they previously were unable to grow or to grow modestly. Further, the ability to grow crops within Palestine is also transformative of the purchasing power of Palestinians. As a result of these projects, Palestinians have the opportunity to

purchase produce in Palestine from Palestinians further stimulating the Palestinian economy and decreasing economic dependence on Israel.

Organizations engaged in joint initiatives, which often receive international funding on the condition of joint partnership, also appear to have the potential to transform economic dependence. In a system where Palestinians typically work as employees and Israelis as employers, these initiatives appear to transform this order in some respects. For example, the acting director of HWE expressed that securing funding from international donors is often contingent upon Israeli partnership and creates a situation in which the Palestinian organization is hiring or sub-contracting an Israeli organization.<sup>112</sup> This creates economic incentive while also transforming the typical relational order that exists in the Israeli-Palestinian economic sector.

#### *Technical Power*

The joint management of water raises awareness of Palestinian technological capabilities, further leveling the playing field. While Israelis clearly hold greater technological power, Palestinian technical abilities are recognized, and in some cases studied by Israelis who seek to replicate Palestinian achievements. Israelis at the government level recognize Palestinian technological ingenuity, even though it is not necessarily perceived as positive or linked to the political sphere.<sup>113</sup> However, Palestinians receive little credit for such advances, and despite the usefulness of Palestinian technologies, they do not lead to political power. However, AIES, PWEG, and HWE adequately and effectively recognize that at the technical level, Palestinians and Israelis learn from one another through joint work. The significance of this is diminished by the failure to make linkages between the benefits derived from joint work within the technical sector to the political sector.

#### *Ideational Power*

The ability to influence ideas, knowledge, and discourse is difficult to assess within a brief time period, as is the case within this appraisal. However, an interpretation can be made as to whether both sides are taking advantage of opportunities for narrative transformation, which can lead to the transformation of ideational power. Opportunities for discursive peacebuilding, i.e. the transformation of conflict through discourse, do not appear to be adequately developed through these initiatives.

The failure to develop counter-hegemonic discourse in these cooperative wastewater projects appears to originate, again, from an unwillingness to associate technical aspects of water shortage with the political causes of these collective issues. For instance, at the

Israeli political level, though recognition of Palestinian technological ingenuity exists, it is not perceived in a positive light or as having value. On the other hand, within the technical sector and within these projects, there is recognition of Palestinian technical ingenuity as well as recognition of the benefits that arise from joint work with Palestinians. This presents an opportunity in which projects have the opportunity to link joint water cooperation to the political sector in a way that could be transformative of the hegemonic narrative. Because joint cooperation is perceived as beneficial within the technical sector, projects have the opportunity to further expand on this in the political sector, perhaps linking joint cooperation with shared benefits such as stability for Palestine and security for Israel. Because the political sphere is so deeply engrained in the existing relational discourse, this represents a missed opportunity for discursive transformation.

experiencing to Israelis who would perhaps have otherwise formed understandings of Palestinians based upon the aforementioned hegemonic narrative.

### 3.6. Recommendations

Alternatives to the current relational order are being explored primarily through the building of Palestine. As the bargaining power and material power of Palestine is increased, the playing field is leveled somewhat. However, as discussed, the overall impact of these capacity-building measures is largely dependent upon the initiative's ability to broaden its scale. The initiatives might broaden their scale by considering the following recommendations:

*1. Initiatives should work towards linking the technical issues regarding water with their political causes in order to be more effective at transforming current Israeli-Palestinian power relations. One way to create this linkage is by holding internal dialogues that can give expression to the political causes of environmental issues. Differences in narrative and understanding of the political roots of water in the Israeli-Palestinian conflict often create diverging expectations and aspirations for project participants. In order to diminish the impact that these differences can have on the success of the cooperative projects, each organization should hold internal dialogues that address the impacts of the political sphere on their projects. These dialogues should be held regularly, perhaps 3 or 4 times per year. As one participant stated, "politics are strangling us and they are stronger than the local and small organizations doing this work."<sup>16</sup> Without addressing the overarching power inequities that serve as roadblocks, the initiatives are not sustainable.*



**Palestinian Engineer at the Nablus West Treatment Facility**

Photo credit: Matt Smither

***"...politics are strangling us and they are stronger than the local and small organizations doing this work."***

In speaking with participants, it became evident that Israeli justificatory narrative for water practices in the West Bank included ideas about Palestinian irresponsibility.<sup>14</sup> On the other hand, in a discussion with a Palestinian engineer, a contrasting image of Palestinian experience was expressed as follows, "They tie our hands, then blame us that we pollute.... give us a chance."<sup>15</sup> Through cooperative projects, Palestinians are able to voice who they are and what they are

The ability to create these linkages is greatly hampered by existing narratives and perceptions of the other. Within the broader context of these narratives, cooperation with the other on a political level is extremely difficult. While these linkages are essential to the sustainability of these initiatives, the prospect of these linkages materializing is grim. On both sides, the stigma around political relationships with the other continues to serve as an obstacle to issue-linkage. Until perceptions of the other have shifted in the context of this conflict, it is unlikely that initiatives will be successful in linking the technical issues with their corresponding political causes to improve project sustainability.

2. *Diversify participant interaction.* Diversifying the interaction aids in challenging the current relational order of Israeli hydrohegemony. By including Jordanian participants, for example, Palestinians are given the opportunity to hold a more powerful position. In one discussion with FoEME, it was expressed that in projects that included Jordanians, Israelis and Palestinians, Palestinians often held great power. In this situation, power stemmed from the unique ability that many Palestinians have to speak both Hebrew and Arabic, allowing them to serve as an in-between for Arabic-speaking Jordanians and Hebrew-speaking Israelis who would otherwise have difficulty communicating. Not only will diversifying participant interaction enhance Palestinian power, but by it may also enhance Jordanian power, thus decentralizing power from the Israelis and distributing it more equitably between the Israelis, Jordanians, and Palestinians. Further, instances in which Palestinians have the opportunity to take on powerful and positive roles provide an opportunity for transformation of ideational power. By creating new, positive experiences of cooperation with the other, the hegemonic narrative of cooperation that has served as a roadblock in the path to peace can be transformed.

3. *Allow a platform for the expression of Palestinian experiences.* These initiatives allow space for Palestinians to vocalize their experiences, challenging the narrative that has been created hegemonically. The ability to vocalize experiences not only challenges the hegemonic narrative, but also narrows the ideational power gap that exists between Israelis and Palestinians. Such a platform could be envisaged as providing an opportunity for project participants that acts as a town hall meeting. This meeting could happen several times a year in various communities. The outcomes of these meetings could be given, if participants felt comfortable, in a memo form to both Palestinian and Israeli project partners, and could include action steps to improve participant experience.

Power plays a key role in shaping both understandings and functional realities of wastewater management in the West Bank. The cooperative decentralized wastewater systems occur within the context of inequitable power structures and asymmetrical conflict, and work to counteract the uneven power landscape through the building of Palestine. The best way to enhance the projects' abilities to 'build Palestine' is by broadening their scale physically, as was argued in the previous section, as well as politically and intellectually. Through political and technical discussions, internal dialogues, diversifying and leveling participant interactions, and allowing for platforms of expression, the cooperative wastewater projects can work to further counteract the power asymmetries that persist between Israel and Palestine.

<sup>82</sup> Zeitoun, Mark, and Ana Elisa Cascao. "Power, Hegemony and Critical Hydropolitics," in *Transboundary Water Management: Principles and Practice*, ed. Earle, Jägerskog and Öjendal (Washington, D.C.: Earthscan LLC, 2010), 27-194.

<sup>83</sup> Ibid.

<sup>84</sup> Vickery, Matthew, and Sharen Khalel. "The Siege on Hebron." *Middle East Monitor*. June 22, 2014. Accessed July 29, 2014. <https://www.middleeastmonitor.com/articles/middle-east/12284-the-siege-on-hebron>.

<sup>85</sup> Palestinian Water Authority (PWA), Interview by AU Practicum Team, June 2014, West Bank.

<sup>86</sup> Selby, Jan. "Dressing up Domination as 'cooperation': The Case of Israeli-Palestinian Water Relations." *Review of International Studies* 29, no. 01 (2003).

<sup>87</sup> Israeli Water Authority, Interview by AU Practicum Team, June 2014, Israel.

<sup>88</sup> Participant F, interview by AU Practicum Team, West Bank, June 2014.

<sup>89</sup> Ibid.

<sup>90</sup> According to Abitbol & Schoenfeld, an adaptive water vision and its water development framework should be cross- and trans-boundary, apply diverse technologies, draw upon regional and international expertise, be partially shaped by regional cooperation and international development agencies, build upon existing structures of regional cooperation, engage civil society groups, and involve local communities. Additionally, according to Brooks & Trottier, wastewater management should meet four objectives (economic efficiency, social and political equity, ecological sustainability, practical implementability) and five principles (definition of water rights, equality in rights and responsibilities, priority to demand management, acceptance of historic local forms of management, and continuous monitoring of water quality and quantity and mediation of conflicting uses).

<sup>91</sup> Participant J, AU Practicum Practicum Team, West Bank, June 2014.

<sup>92</sup> Jeff Halper, "The 94 Percent Solution: A Matrix of Control," *Middle East Report*, no. 216 (2000).

<sup>93</sup> The World Bank, "Area C of the West Bank and the Future of the Palestinian Economy," accessed July 3, 2014, <http://www.worldbank.org/en/events/2014/01/12/area-c-of-the-west-bank-and-the-future-of-the-palestinian-economy>

<sup>94</sup> Ibid.

<sup>95</sup> United Nations Office for the Coordination of Humanitarian Affairs (OCHA), "Humanitarian Factsheet on Area C of the West Bank," accessed July 3, 2014, [http://www.ochaopt.org/documents/ocha\\_opt\\_Area\\_C\\_Fact\\_Sheet\\_July\\_2011.pdf](http://www.ochaopt.org/documents/ocha_opt_Area_C_Fact_Sheet_July_2011.pdf).

<sup>96</sup> Halper, "The 94 Percent Solution: A Matrix of Control."

<sup>97</sup> Ibid, 18-19.

<sup>98</sup> Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Conflict* (New York: I.B. Tauris, 2008).

<sup>99</sup> Ibid.

<sup>100</sup> Brooks and Trottier, "Confronting Water in an Israeli-Palestinian Peace Agreement."

<sup>101</sup> Kliot and Shmueli, "Real and Ideal Institutional Frameworks for Managing the Common Arab-Israeli Water Resources."

<sup>102</sup> Hafez Q. Shaheen, "Wastewater Reuse as Means to Optimize the Use of Water Resources in the West Bank," *Water International* 28, no. 2 (2003).

<sup>103</sup> Hind and Daher, "Protection of Groundwater Resources by Grey Wastewater Management and Reuse: When Conventional Wastewater Management Is Not Affordable."

<sup>104</sup> Participant J, AU Practicum Team, West Bank, June 2014.

<sup>105</sup> Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Conflict*.

<sup>106</sup> Participant C, AU Practicum Team, West Bank, June 2014.

<sup>107</sup> Friends of the Earth Middle East, "A 45 Million Dollar Investment in Hebron Wastewater Treatment Plant," accessed July 3, 2014,

<http://foeme.wordpress.com/2011/05/28/a-45-million-investment-in-hebron-waste-water-treatment-plant/>.

<sup>108</sup> Zeitoun, Mark, Tony Allan, Nasser Al Aulqi, Amer Jabarin, and Hammou Laamrani. "Water Demand Management in Yemen and Jordan: Addressing Power and Interests." *The Geographical Journal* 178, no. 1 (2012).

<sup>109</sup> Participant J, interview by AU Practicum Team, West Bank, June 2014.

<sup>110</sup> Israeli Water Authority, Interview by AU Practicum Team, June 2014, Israel.

<sup>111</sup> Ibid.

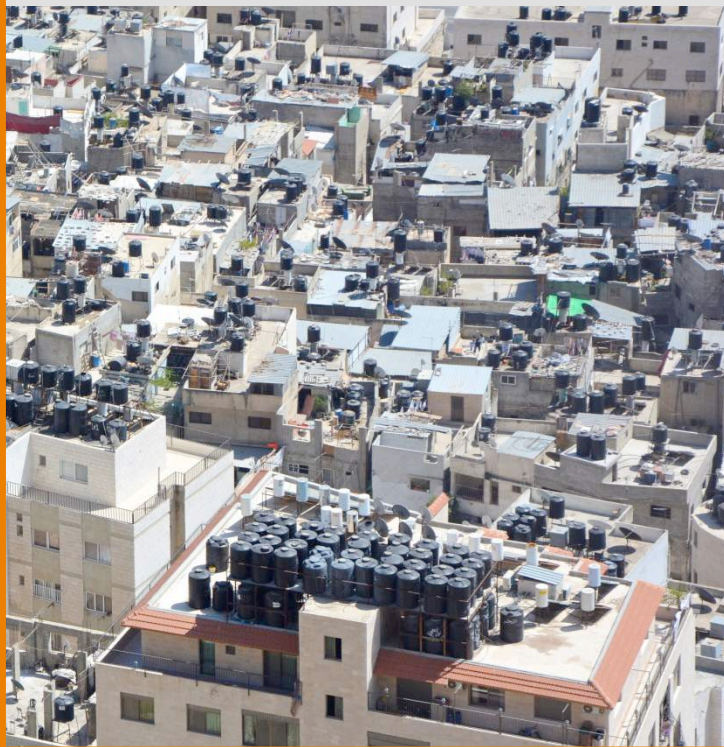
<sup>112</sup> Participant D, Interviewed by AU Practicum Team, West Bank, June 2014.

<sup>113</sup> Israeli Water Authority, Interview by AU Practicum Team, June 2014, Israel.

<sup>114</sup> Eric Abitbol. "Hydropolitical Peacebuilding," (PhD Diss., University of Bradford, 2012).

<sup>115</sup> Participant C, interview by AU Practicum Team, West Bank, June 2014.

# NETWORKS, SYSTEMS AND PEACEBUILDING



## 4. NETWORKS, SYSTEMS AND PEACEBUILDING

### 4.1. Introduction

Transboundary wastewater cooperation builds networks across conflictual borders, providing a unique way to evaluate peacebuilding significance. HWE, PWE, and AIES's work in constructing cooperative decentralized wastewater systems is part of an expansive landscape of ties linking Palestinians and Israelis. This section is intended to reveal parts of this landscape, and uncover the environmental peacebuilding significance of these transboundary ties through the lens of social network theory. One analysis focuses within the decentralized wastewater projects, while the other analysis examines the larger system that encompasses a much more complex pattern of relationships.

Social network analysis is the examination and mapping of the connections between points within a system.<sup>117</sup> For the purposes of this report, the points are termed 'nodes' and are mainly institutions or organizations that participate within the systems. Meanwhile, the relationships between nodes are termed 'flows', and they describe the ways in which nodes interact with one another to form a complex system.<sup>118</sup> Network analyses seek to determine the types of relationships between nodes in a system. In defining these relationships, important considerations must be given to types of flows and how those translate into meaning for the system.

Social network theory may provide multiple benefits to peacebuilding within the system, writ large. The actors within the system are able to better function and strategically plan when they have a clear understanding of their role within the system. Additionally, several theories of peacebuilding cite the expansion and connectivity of networks as a key target area for building positive peace within complex conflict situations, including the works of Kenneth Boulding and John Paul Lederach.

### 4.2. Methodology

The process of social network analysis and mapping engages the researcher in a reflective exercise. The graphic representation of the research subject then presents a means to examine the nuance and holistic nature of systems. Robert Ricigliano, expert on systems thinking and peacebuilding notes that, "[i]t is important not to over-emphasize the importance of the map itself...the physical map is less important than the process and quality of analysis that precedes it."<sup>119</sup> In developing such a system, it is possible to then use

these maps to examine key points that may not be visible without a graphic representation.

Ricigliano argues that system maps should be built through a method of both horizontal and vertical integration. Horizontal integration refers to the inclusion of members who cross disciplines. During the fieldwork, engineers, politicians, villagers, farmers, government officials, non-profit directors, lawyers, and historians all aided in the construction of the map. Meanwhile, vertical integration implies the need to include members from multiple layers of society and from the international community.<sup>120</sup> This fieldwork took into account perspectives from mostly the middle layer of society, those actors close to the bottom level, but one degree removed. However, it should be noted that Palestinian government officials and employees in both Israeli and Palestinian water authorities were involved in the fieldwork as well. These people have a large degree of freedom within the system as they are not struggling for daily needs, but are limited in that they do not directly affect the top layer. Perspectives from the international community and the top tier of society were difficult to capture. This is an important consideration as the maps below are presented with a bias to the middle and bottom layers of society.

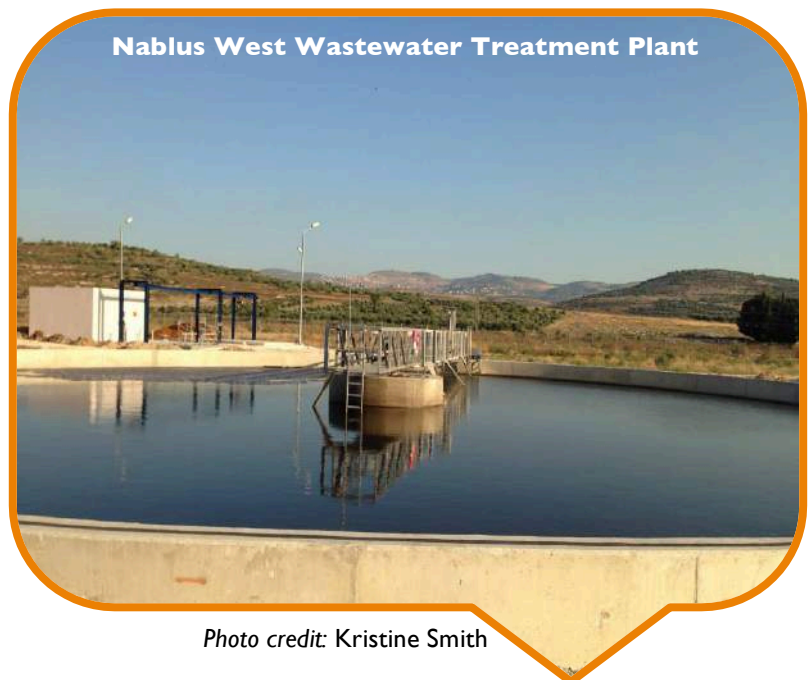


Photo credit: Kristine Smith

### 4.3. Mapping and Social Network Analysis

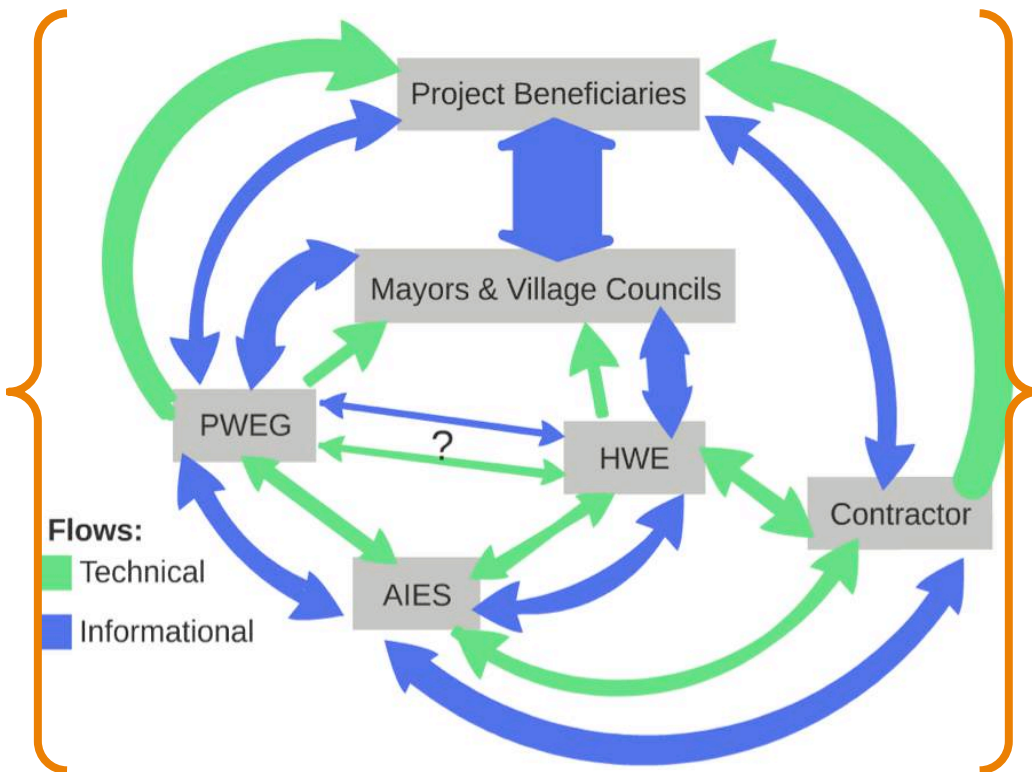
The maps below represent two key areas of transboundary cooperation. The first map identifies the main project, cooperative decentralized wastewater projects between AIES, PWE, and HWE with a focus on the

types of flows between the nodes. The second map elaborates on the interactions of key actors within the larger system, in which the project partners situate themselves. The two are interrelated as the first map is nested within the second.

#### 4.3a Decentralized Wastewater Treatment Project Map

The map below clarifies the major nodes and the two types of relationships within the project. Informational relationships are those relationships in which two of the parties communicated outside of the technical sphere, which, for example, includes knowledge transfers, site updates, and site selection. Technical relationships are demonstrated through the exchange of wastewater management knowledge and expertise as it related to the projects. Arrows note the direction of the flows, while the strength of the relationship is indicated by the width of the arrows. The question mark indicates an unclear but expected relationship. In this case, there is evidently a flow between PWEG and HWE, but the strength of it is unknown.

**Decentralized Wastewater Systems Map**



#### 4.3b Analysis

One of the strongest relationships found is between the project beneficiaries and the mayors and village councils. It is evident that this is primarily an informational flow, but one on which the system relies heavily in order to function properly. This type of informational flow was established through the homeowner communicating

primarily with the local systems of governance, site selection, and personal connections between the beneficiaries and the local governance mechanisms. For the joint projects between AIES and HWE, it was the local governance systems that selected and met with the beneficiaries initially.<sup>121</sup> This intense relationship is an important element within the project system as it reinforces the legitimacy of the local municipality and builds capacity. The two previous sections discuss scale and power and identified reinforcing legitimacy and building capacity as benefitting the cooperative wastewater projects. AIES, PWEG, and HWE all actively work with the municipal governance system so that systems are seen in a way that supports local empowerment rather than degrading local governance and institutions, an important facet of 'building Palestine'.<sup>122</sup>

Unsurprisingly, this map also fleshes out the highly connected loop of AIES, PWEG, HWE, and the municipality governments. This is partially an outcome of the aforementioned legitimacy issue. This also represents the exact type of network that allows transboundary environmental cooperation to occur. AIES and PWEG or HWE seek the invitation of local levels of governance

to work within their communities.<sup>123</sup> Often frustrated by connections to higher levels of government, municipalities turn to NGOs in an attempt to alleviate the burden on their citizens. Several municipalities referred to these types of frustrations in dealing with the PWA or PA. These municipalities are now focusing their energy on building a cooperative network with NGOs who have more flexibility to operate and organize and are working to create municipally managed wastewater treatment systems through a variety of scale options.<sup>124</sup> Another reason for this strikingly strong relationship is, as an AIES representative noted, cooperation across the border "requires constant engagement" with partners.<sup>125</sup> This is very much a sentiment that all of the NGO

partners and local leaders expressed both verbally and through observation of their interactions. The four-way connection detailed here between the nodes makes for a strong, resilient network.

Additionally, there were some signs of distorted flow patterns, especially regarding the connection of AIES to the project beneficiaries. Beneficiaries tend to be insulated from Israeli involvement and also the coopera-

tive and transboundary elements of the project. One homeowner even said that no one discussed with him that it was a cooperative project involving Israelis. He continued to say that it was a technical and environmental project, not a cooperative one in his eyes.<sup>126</sup> As discussed in the previous section, there is a missed opportunity for peacebuilding, even if through the simple recognition that the project is transboundary and including Israelis for the immediate project beneficiaries. By strengthening the connection of AIES to Palestinian project beneficiaries, both narratives and perceptions of the 'other' can begin to be transformed. With a strong connection to the beneficiaries, AIES can challenge the notion that Israelis are ubiquitously opposed to Palestine, a direct challenge to the dominant narrative.

Importantly, the role of USAID's Office of Conflict Management and Mitigation (CMM) as the donor organization was intentionally left out of this project map. While the role that CMM plays is vital to the implementation of the projects, the financial flows within the project system cannot be validated through field research. The role of USAID as the donor organization for the HWE and AIES project was difficult to ascertain while in the field. CMM is funding the project based on a three-year pilot period that is to include both a pilot project for the treatment of wastewater and a person-to-person capacity building series.<sup>127 128</sup>

Overall, even with lack of data and some points of contention, the project map shows a tightly connected group of nodes, which transfers information and technical expertise with few barriers.

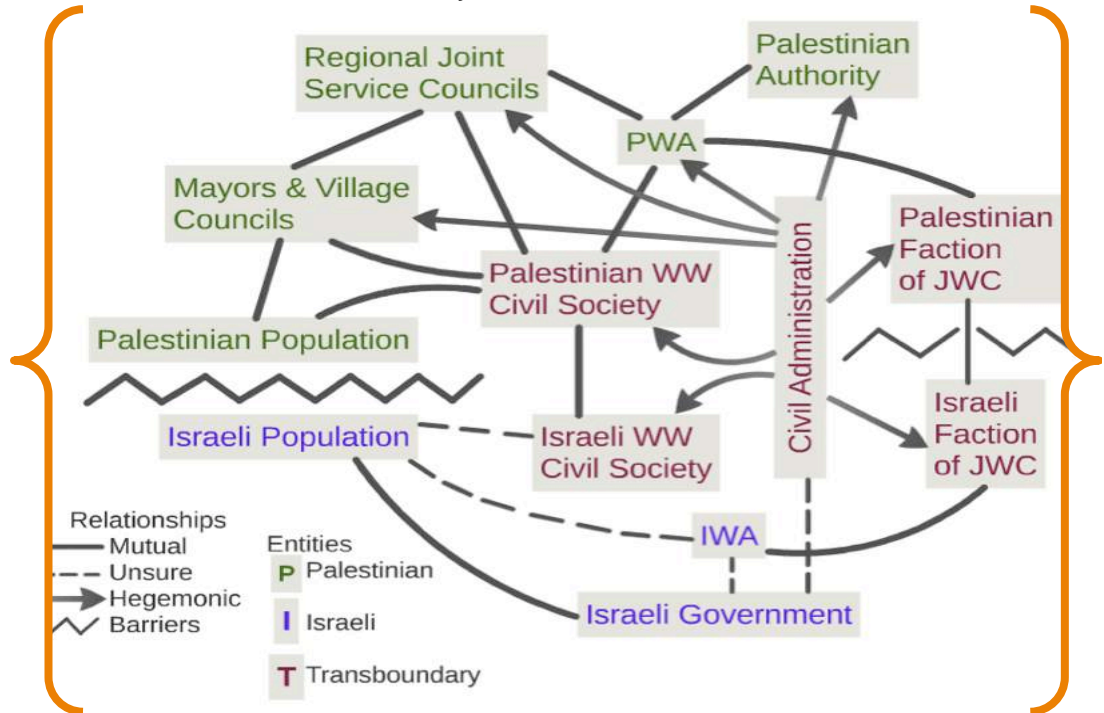
*With a strong connection to the beneficiaries, AIES can challenge the notion that Israelis are ubiquitously opposed to Palestine, a direct challenge to the dominant narrative.*

#### 4.3c Larger Systems Map

The following map focuses on a larger system in which the cooperative decentralized wastewater projects are embedded. The map focuses on the types of relationships or flows between the nodes: mutual (or equita-

equitable), unclear (though expected), and hegemonic, as well as the barriers, which exist within the system. While the project scale map is essentially void of hegemonic relationships, the macro-level map is defined by these relationships. Barriers are present in both a physical and administrative system of control and isolation which the general Palestinian population face, and the barrier to cooperative functioning of the Israeli and Palestinian factions of the JWC.<sup>129</sup>

#### Larger Systems Map



#### 4.3d Analysis

The most striking feature of the mapping exercise was the power and control that the Israeli Civil Administration has over much of the larger system. The types of flows going from any node to the Civil Administration node are always hegemonic. As previously discussed in this report, the Civil Administration is a powerful entity within the West Bank as they exert authority over Area C. Additionally, the Civil Administration controls the air above and the ground (or water) below the West Banks areas in Areas A, B, and C.<sup>130</sup> The Civil Administration often rejects projects on security grounds, but also remains unresponsive to requests. At the municipal level, one Joint Services Council (JSC) member told of a nearly \$3 million project which had the approval of the JWC but had been pending for over two years and still had not received any word from the Civil Administration.<sup>131</sup>

It is not just local governance that has difficulty in dealing with the powerful Civil Administration as some of the loudest criticisms of the institution came from



within the PWA. These individuals depend on a functioning relationship with the Civil Administration that is nearly non-existent. One Palestinian water official in frustration proclaimed, in reference to trying to work with the Civil Administration, “[w]e only do crisis management. We cannot do real water management and development under an occupation.” As was previously discussed, the power of the Civil Administration contributes to jurisdictional fragmentation and asymmetries of power, major limiting factors of wastewater management planning in the West Bank.

*“[w]e only do crisis management. We cannot do real water management and development under an occupation.”*

Another key component of the system is the failure of the JWC. As previously discussed, the JWC has not been a functioning body since 2010. Initially designed to be a cooperative body that would work to provide approval for water-related development in the West Bank, the JWC has been accused of reinforcing the power of Israelis over Palestinians. One Palestinian stated that the, “JWC is absolutely not a cooperation platform. It is a domination.”<sup>132</sup> Following a statement released in 2010 by the Palestinian chairman of the JWC on the moratorium of approval for projects involving settlements, only the technical bodies have continued to function.<sup>133</sup> The Israelis within the Israeli Water Authority (IWA) are highly critical of this and accuse the Palestinians of politicizing the council.<sup>134</sup> Palestinian officials respond to such criticism with statements that reflect the sentiment of one interviewee: “The Palestinian water problem is not a technical problem, we don’t need technicians...the problem with the Palestinian water situation is political...water is politics.”<sup>135</sup> Clearly the accusatory tone and highly politicized environment have created an environment in which cooperation and transboundary engagement have been stymied.

One highlight of transboundary cooperation was the role that civil society in both Israel and Palestine may be able to play in both the development of wastewater treatment systems and transboundary cooperation writ large. NGOs have a larger degree of freedom within the system than either governmental bodies of Palestine or Israel, allowing them to gain traction in many transboundary efforts. Additionally, the international donor community has encouraged this type of transboundary cooperative project as NGOs often engage in this style of project in order to access donor funds that reward Israeli-Palestinian cooperation.<sup>136</sup> In fact, there was much dialogue about expanding the robust network of Palestinian and Israeli NGOs and civil society organizations.<sup>137</sup> Because of their flexibility, many NGOs and

civil society groups are being utilized by local level governance institutions to “force the hand” of the PWA and PA in assisting local Palestinian municipalities.<sup>138</sup> While this denotes a degree of fractured relationships between the levels of Palestinian government on the local and national scale, these relationships seemed to stem more from divergent priorities than a hegemonic power relationship.<sup>139</sup>

Finally, it is worth noting that since the projects were centered in the West Bank, there was little opportunity for understanding the Israeli population and their connectedness to the system. The one insight was that unlike the PWA and Palestinian population, the IWA does not engage or work with Israeli municipalities directly. Due to corruption, the IWA is completely removed from involvement with Israeli communities on the project level.<sup>140</sup>

*“The Palestinian water problem is not a technical problem, we don’t need technicians...the problem with the Palestinian water situation is political... water is politics.”*

#### 4.4. Findings

##### 4.4a General Findings

As defined by the analysis of the two maps above, there are many unique findings that come out of the research inquiry. Among the most important are (1) the issues of local governance legitimacy within the project system; (2) the concept of constant engagement; and (3) the ability of asymmetric power to define relationships. These three separate issues are the most salient of all of the factors found within the system. By constructing a map of the decentralized wastewater project and a larger system map, these three central issues can be visually identified. While each map and its subsequent analysis speak to varying issues, it is these three issues that this research finds as the most salient of factors found within the two systems. After conducting the mapping exercises and the analyses, there were also additional findings in the utility of personal connections in building networks and the consideration of barriers of isolation and protection.

##### 4.4b Personal Connections Build Professional Development and Social Networks

One of the most reoccurring motifs was the strength of personal connections between many of the individual members of Palestinian-based and Israeli-based organizations, evident that this network has developed both from and into personal relationships.<sup>141</sup> These personal

connections then led to the collaboration on a professional level. Furthermore, these personal connections enabled expansions of the network. Several times while in the field, a research participant would note that they came into contact with AIES or another institution through a personal invitation to an international conference.<sup>142</sup> It is through these personal connections that the barriers of conflict can be chipped away. However, personal connections take time and diligence to build; they depend on the understanding and mutual likeability of individuals. These types of connections can be facilitated by technical and transboundary work, but not built through professional contact alone. This is a key leverage point within the system: use personal connections to continually expand and reinforce professional social networks. By expanding and reinforcing the networks, it may be possible to build a platform to effect larger systematic change.<sup>143</sup> These personal relationships give added strength to the network, increasing its resiliency, a particularly valuable component in a conflict context.

*One of the most reoccurring motifs was the strength of personal connections between many of the individual members of Palestinian-based and Israeli-based organizations, evident that this network has developed both from and into personal relationships.*

#### 4.4c Barriers of Isolation and Protection

Both the project map and the larger system map illustrate significant institutionalized barriers, which inhibit the true cooperative aspects of these projects from being realized. The partners use these barriers of isolation and protection for exactly those purposes: to isolate beneficiaries from the knowledge of Israeli-Palestinian cooperative work and for the purpose of protecting the beneficiaries (and the projects) from harm by the wider community. It is clear that beneficiaries and the general population, specifically Palestinians, are several degrees removed from the transboundary work being done. On the project-level, barriers of protection are erected that conceal certain aspects of the transboundary nature of the projects. In one case, the project sign that is posted at all sites read all the names of the implementing agencies – Palestinian, Israeli, and international donor – in English. However, in Arabic the Israeli partner was left off of the sign.<sup>144</sup> Additionally, as previously mentioned, there was a lack of communication between the municipal governance structures and the homeowner about the nature of the project including Israelis.<sup>145</sup> These types of barriers are not uncommon given the nature of the conflict in the region and, in many ways, actually allow HWE, PWEG,

and AIES to complete their work in this conflict environment. However, an equally important consideration must be made in that creating this barrier also inhibits the ability of the projects to have any meaningful peacebuilding outcomes. By minimizing the transboundary, cooperative elements of the project, HWE, PWEG, and AIES take away from the power that their cooperation could have in changing perceptions about the nature of Palestinians, Israelis, and their ability to work together.

#### Sign Exhibiting Barriers of Isolation and Protection



Photo Credit: Kristine Smith

*It is clear that beneficiaries and the general population, specifically Palestinians, are several degrees removed from the transboundary work*

#### 4.5. Recommendations

Through a consideration of the findings contained above, HWE, PWEG, and AIES should actively work on the following key points. Each speaks to the importance of maximizing peacebuilding outcomes for the cooperative, wastewater treatment projects.

1. *Continue to uphold the legitimacy of local governance institutions.* Development projects often undermine local institutions, so it is positive to see the lengths at which HWE, PWEG, and AIES go to empower local communities and governance systems. However, this must be constantly reinforced and upheld.

2. *Maximize NGO freedom to expand transboundary networks.* Given that NGOs have additional amounts of freedom within a highly polarized system, use that freedom to empower, engage, and expand professional, transboundary networks. By linking Palestinian and Israeli professionals, a greater peace constituency may be built. Utilizing personal connections may be the

single most important key in expanding the network of professionals.

Building, maintaining, and strengthening of networks across and through the lines of conflict represent a possible peacebuilding model, linking Israelis and Palestinians. By constructing cooperative relationships around wastewater, Israeli and Palestinian professionals have the potential to develop alternate relationships, which do not reflect the conflict contexts or the region. These networks are highly reinforced by personal relationships and a small, yet highly interconnected, group of transboundary organizations. The analysis here shows that there are many barriers to peacebuilding and collaboration, but it has also revealed systems by which Palestinians and Israelis can coordinate and continue to develop meaningful, lasting, and impactful relationships.

These relationships may be able to alter the larger conflict by recasting both Israeli and Palestinian views of the other. Through the network systems analysis and mapping presented here, AIES and PWEG as well as other project partners will be better able to situate themselves contextually within the landscape of hegemony and power. Additionally, this section also notes the ways in which their programming can leverage key points within the system to maximize peacebuilding.

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<sup>135</sup> Participant J, Interview by AU Practicum Team, West Bank, June 2014.

<sup>136</sup> Participant E, Interview by AU Practicum Team, Jerusalem, June 2014.

<sup>137</sup> Participant L, Interview by AU Practicum Team, West Bank, June 2014.

<sup>138</sup> Participant M, Interview by AU Practicum Team, West Bank, June 2014.

<sup>139</sup> Participant D, Interview by AU Practicum Team, West Bank, June 2014.

<sup>140</sup> Participant G, Interview by AU Practicum Team, Israel, June 2014.

<sup>141</sup> Site Visit 3, AU Practicum Team, West Bank, June 2014.

<sup>142</sup> Participant D, Interviewed by AU Practicum Team, West Bank, June 2014. Participant N, Interviewed by AU Practicum Team, West Bank, June 2014.

<sup>143</sup> Participant D, Interview by AU Practicum Team, West Bank, June 2014.

<sup>144</sup> Participant M, Interview by AU Practicum Team, West Bank, June 2014.

<sup>145</sup> Participant N, Interview by AU Practicum Team, West Bank, June 2014.

<sup>146</sup> Site Visit 3, AU Practicum Team, West Bank, June 2014.

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<sup>117</sup> Save the Children, *NGO Network Analysis Handbook: how to measure and map linkages between NGOs*, by Dershem, Larry Tamar Dagargulia, Lilly Saganelidze, and Stephanie Roels, (Tbilisi: Save the Children, 2011).

<sup>118</sup> Ibid.

<sup>119</sup> Ricigliano, *Making Peace Last* (Boulder: Paradigm Publishers, 2012), 108.

<sup>120</sup> Ibid, 67.

<sup>121</sup> Participant E, Interview by AU Practicum Team, Jerusalem, June 2014.

<sup>122</sup> Participant C, Interview by AU Practicum Team, West Bank, June 2014.

<sup>123</sup> Participant P, Interview by AU Practicum Team, West Bank, June 2014.

<sup>124</sup> Participant M, Interview by AU Practicum Team, West Bank, June 2014.

<sup>125</sup> Participant E, Interview by AU Practicum Team, Jerusalem, June 2014.

<sup>126</sup> Site Visit 3, AU Practicum Team, West Bank, June 2014.

<sup>127</sup> Participant H, Interview by AU Practicum Team, Jerusalem, June 2014.

<sup>128</sup> Participant E, Interview by AU Practicum Team, Jerusalem, June 2014.

<sup>129</sup> Jeff Halper, "The 94 Percent Solution: A Matrix of Control."

<sup>130</sup> Participant P, Interview by AU Practicum Team, West Bank, June 2014.

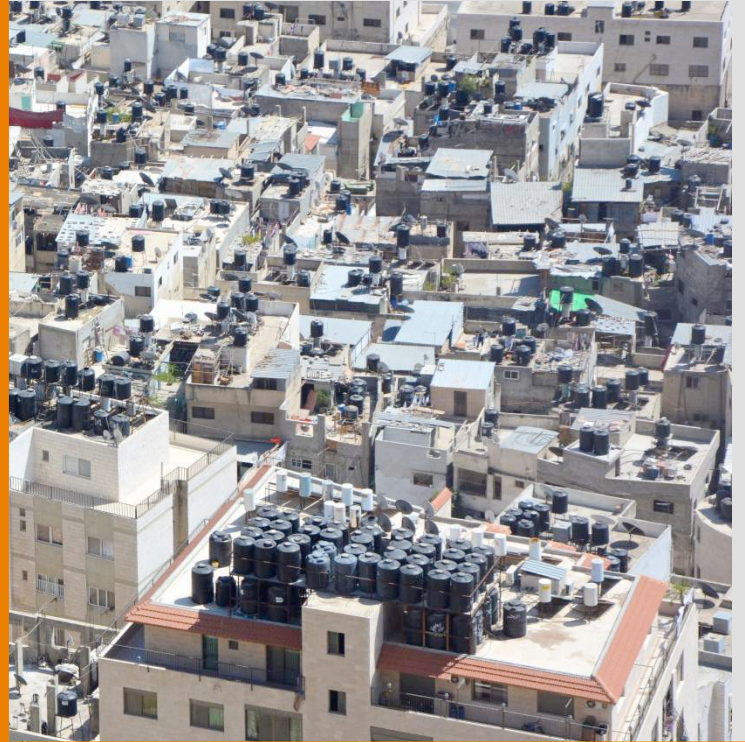
<sup>131</sup> Participant M, Interview by AU Practicum Team, West Bank, June 2014.

<sup>132</sup> Participant J, Interview by AU Practicum Team, West Bank, June 2014.

<sup>133</sup> Ibid.

<sup>134</sup> Participant G, Interview by AU Practicum Team, Israel, June 2014.

# NARRATIVES OF PARTICIPATION



## 5. NARRATIVES OF PARTICIPATION

### 5.1. Introduction

In order to assess the power of narratives in transformative peacebuilding, it is paramount to analyze how people discuss and describe their participation in joint projects, like those conducted by AIES, PWEG, and HWE. This section thus examines the environmental peacebuilding significance of transboundary wastewater cooperation through the narratives that relate to these cooperative wastewater management projects<sup>146</sup>. Evaluation through a narrative lens is key to the multifaceted assessment of the cooperative wastewater projects as looking at narratives is an insightful method to assess factors such as relationship building and understanding, which among others are key to building peace.

### 5.2. The Significance of Narratives

Narratives unveil fears, doubts, reservations, and hesitations to participate in cooperative initiatives. They unveil views about the other and perceptions of costs versus benefits. Othering leads to exclusion that can be dangerous as the other is portrayed as less human.<sup>147</sup> In addition, narratives disclose how participants from different backgrounds understand the world and the conflict around them.<sup>148</sup> These are of value to an organization or individual that is expanding and/or improving participant experience with wastewater management projects because they reveal matters that need to be addressed and offer ways to connect individuals on a personal level in order to find common ground. Cooperation also offers an opportunity to create more inclusive narratives that are less “conflict saturated”.<sup>149</sup>

Narratives are not epiphenomenal; they are deeply rooted in history, both real and perceived.<sup>150</sup> Therefore, context is vital to the full comprehension of narratives as “many conflict narratives may be reducible to underlying structural relations.”<sup>151</sup> Furthermore, ‘intertextuality’, or the relationships between the stories of two parties in conflict, is also essential and must be proactively sought by the listener.<sup>152</sup>

The Israeli-Palestinian debate over water rights is a quintessential example that context and intertextuality are important to understand. Zeitoun discusses the idea of structural relations and argues that the Israeli narrative focuses on Palestinian water needs as opposed to Palestinian water rights.<sup>153</sup> Palestinians argue that they have a human right to water, whereas Israelis argue that Palestinian water rights have been satisfied in that the PWA has authority over the Eastern Mountain

Aquifer. The Palestinians reject this framing as a temporary, not final, resolution of the water rights issue. Water is constituted as a strategic resource that is vital to Israeli national security, and as a result, removes water from Palestinian possession.

It is important to recognize all of these factors, in addition to the context of the Israeli-Palestinian conflict, in order to understand the narratives of the many participants. Locating points of convergence and common ground in narratives, such as a mutual lack of freshwater, reveals a possibility for dialogue between Israelis and Palestinians, and eventual, broader cooperation.

*The line between normalization and resisting the occupation is constantly negotiated and people find themselves at many different points along this spectrum*

### 5.3. Narratives in the Field

Several categories of participants were interviewed during the rapid appraisal. The interview process revealed some important similarities in respondent narratives: power asymmetries, issues of normalization, examples of cooperation (or lack thereof), struggles, injustice, hope, fatigue, frustration, and many other elements characteristic of the Israeli-Palestinian conflict. Both Israelis and Palestinians share a historical narrative unique to each group that provides foundation and context. Though there are several nuances and varied experiences in each individual narrative, the greater narrative within which each participant’s account is situated must be acknowledged for greater insight.

The Israeli historical narrative is characterized by fear, references to the Holocaust, and victimhood. This narrative uses security to explain many of the Israeli government and military’s actions. The Jewish homeland, a product of the need to protect themselves from persecution and extermination, must be defended. Even the younger generation, who did not experience the Holocaust, perceives various threats as a result of this shared historical narrative. The notion is clearly emphasized that if the Jews cannot protect and defend themselves, then no one else will. A constant emphasis on security justifies many measures taken by Israeli officials.

The Palestinian historical narrative uses rhetoric of injustice, powerlessness, and victimhood. References are often made to international laws and standards, and

### ‘NORMALIZATION’

Though this term is used frequently in Palestinian conversations about cooperative projects and critical to understanding the narratives of each side, it is not clearly defined. A general definition of normalization (in Arabic, *tatbi'a*) is “the process of building open and reciprocal relations with Israel in all fields, including the political, economic, social, cultural, educational, legal, and security fields.”<sup>1</sup> But even this definition does not take into account the differing ways most Israelis and Palestinians understand this term.

For Palestinians, normalization is negative concept that expresses the legitimization of the occupation of the Palestinian territories. As a result, organizations working with Palestinians pursue different mechanisms (which will be explored later in this chapter) to avoid, limit, or address the stigma attached to this word. The anti-normalization movement takes this a step further, by rejecting normal relations with Israel and Israelis at any level. This is based on the conviction that if meetings, peace talks, or negotiations do not expressly aim to resist the occupation, then they are legitimizing it. This zero-sum position causes a great deal of pressure for those Palestinians who do see reason to cooperate as a mechanism for nonviolently resisting the occupation.

For Israelis that do not work with Palestinian civil society, the term ‘normalization’ is not understood and certainly not part of the dialogue around cooperative projects. Israelis in this category that were interviewed understood normalization as a positive term tied to the acknowledgment of the State of Israel.

This divergent understanding of a term that is so integrated into the Palestinian narrative is cause for concern. If the two sides are not using the same language to discuss the conflict, it will be more difficult for them to find a common agreement based on mutual understanding of the other’s perspective and needs.

the illegal nature of settlements. Words such as occupation, apartheid, and domination evoke strong emotion in the Palestinian narrative. Palestinians also self-identify as victims of injustice, whose land was taken. Disadvantaged and provided with limited basic services, many Palestinians are torn between fighting the occupation and cooperating with Israelis to improve life, even at the risk of normalization. The line between normalization and resisting the occupation is constantly negotiated and people find themselves at many different points along this spectrum. Though some try to take a hard position in this debate such as the anti-normalization movement, most find themselves somewhere in between and continually shifting position depending on the circumstances.

The following section analyzes the narratives that were shared by the participants involved in the rapid appraisal. The participants are divided into three levels: household, technical, and political. At each of these levels, the Israeli and Palestinian narrative will be shared separately, as contrasting opinions were often expressed.

#### 5.3a Household Narratives

The household level includes homeowners, family members, and neighbors of the households in which the cooperative decentralized wastewater treatment projects are installed. There were no opportunities to speak with Israeli households, undoubtedly creating a level of bias.

##### *Palestinian Household Narrative*

Our encounters at the Palestinian household level quickly exposed a lack of cooperation between Israeli NGOs and Palestinian project beneficiaries in the household-DWW projects. In talking with the homeowners, most of them conveyed that their main point of contact for the project is a Palestinian counterpart (PWEG or HWE), and that there is little interaction with the Israeli counterpart (AIES). They are aware that the Palestinian organization has an Israeli partner, but by framing their participation as working with other Palestinians, and those Palestinians happen to have an Israeli partner, a buffer is created for the household participant.<sup>154</sup> It is not clear if this buffer is to protect the homeowners from the stigma of normalization, a show of their reluctance to work with Israelis, or a lack of transparency on the part of the project implementers.

A lack of discussion regarding these projects in the communities was also apparent and highlights two obstacles to cooperation: general awareness of the project benefits and community awareness of Israeli

involvement. One Palestinian participant explained that his neighbors generally know about the treatment project but that he did not “sacrifice an animal and have a grand celebration to announce the project to his community.”<sup>155</sup> This anecdotal comment suggests that while his neighbors may be aware of the existence of the project, there is not active discussion regarding the opportunity for cooperation with Israeli involvement or the benefits of the project. Another Palestinian participant said his community sees this project as beneficial, acknowledges PWEG as the implementer, and is less concerned with the involvement or partnership of AIES. The community is also aware that members of the Israeli institute frequently visit the household to monitor the project, but this does not seem to cause concern.<sup>156</sup> Therefore, this particular community focuses on the benefits of the project, namely increased supply of water for agricultural reuse, and overlooks Israeli involvement, as a secondary aspect of the project. Many of the projects are frequently visited by the international community, who have a vested interest in the project, or are conducting research in the region. As a result, in some of these communities, there is increased community interest in the project. This kind of added attention can benefit the partners, as others in the community may also seek to replicate the system in their household.

There is space to enhance cooperation by actively discussing the Israeli involvement as opposed to simply overlooking their involvement in order to receive benefits. Collectively, there does not appear to be much Israeli-Palestinian cooperation at the household level. The presence of the buffer prevents any kind of transformation of the narratives at the household level and reduces the ability of the household projects to offer peacebuilding benefits by enhancing mutual understanding and interaction between Israelis and Palestinians.

### 5.3b Technical Sector Narratives

The technical sector includes professionals as well as organizations working in the water/wastewater sector. AIES, PWEG, HWE, and FoEME are examples of such organizations that were interviewed. Amongst AIES, PWEG, and HWE, there was a consistent separation of the technical and political sectors by the interviewees on both the Palestinian and Israeli sides. Uniquely, this was not the case at FoEME, who are overt and intentional about environmental peacebuilding and the political aspirations of their work.

#### *Palestinian Technical Sector Narrative*

The narratives of Palestinian professionals in the technical sector varied greatly from those at the household level, and analysis indicates that at the technical level, cooperation is occurring. Many described obstacles and risks associated with cooperation with Israelis; however, they iterated their willingness to do so in the interest of the benefits that would result, namely environmental protection and improving the quality of life of Palestinians. One Palestinian participant claimed that 20 years ago cooperation was a problem but not currently, as they know that the environment and water have no borders. People in this field, he argued, recognize the need for cooperation to find a solution to various environmental challenges. However, this participant was very careful to maintain the conversation within the technical sphere.<sup>157</sup>

*The HWE participants believe the cooperation present in the scientific community is a model for the politicians.*

In a meeting with HWE, the interviewees claimed that they maintain a relationship with Israeli NGOs out of a common need to find a solution to water shortages by sharing techniques and information. When asked the ways in which they productively talk with their Israeli partners, they stated that they focus on the scientific aspects and “leave the politics to the politicians.” The HWE participants believe the cooperation present in the scientific community is a model for the politicians.<sup>158</sup> Many convey that environmental matters need to be dealt with urgently, as avoiding these issues will lead to increased environmental degradation and risks to public health, neither of which can wait for an improved political situation. As a Palestinian participant exclaimed, “We cannot wait for Abu Mazen [Mahmoud Abbas] and Netanyahu to shake hands!”<sup>159</sup>



Photo credit: Natalie Wisely

In speaking with FoEME staff in al-Auja, their narrative seemed to expose a transformation in their community. The Palestinian interviewees described that two years prior their organization was seen as normalizing and asking for money from Israel, viewed as ‘the enemy’ in their community. The employees claimed that they begged people to volunteer at the organization so community members could learn about the benefits and goals of the organization. Over time, the community’s mindset transformed as it began to recognize the positive work being done. The FoEME staff members thus explained that demonstrating benefits helps overcome the accusation of normalization. After all, a Palestinian participant added, “even Mahmoud Abbas has to cooperate with the Israelis to get anything done.”<sup>160</sup> Interestingly, when asked about the willingness to cooperate even after experiencing so many obstacles and injustices, the FoEME staff argued that Palestinians should know that “not all Israelis are enemies. Many of them want peace, too”.<sup>161</sup>

A senior Palestinian representative of FoEME elaborated on the necessity of cooperation by acknowledging that under the current circumstances unilateral action is not sustainable. He argued that there must be a concerted effort to cooperate, especially on environmental factors, even if Israelis and Palestinians do not like each other. Many people are willing to cooperate, he added, but only in secret, which is not enough.<sup>162</sup> In order to truly transform narratives and enhance cooperation, cooperation must be done publicly. The fact that there is more willingness to cooperate in secret than openly leads to the conclusion that there is still great stigma attached to cooperation and/or an unwillingness to cooperate with the other.

Unwillingness to cooperate seems to stem from one of several possible risks referenced in the narratives of the Palestinian participants. Normalization, fear, and stigma are among the reasons for non-cooperation. Competing narratives of normalization and narratives of resisting the occupation emerged as primary obstacles to cooperation. Israelis use fear as a reason for non-cooperation. This perspective was illustrated in one interview, when a Palestinian participant argued that, “the Arabs are less afraid of the Jews than Jews of Arabs. The Arabs know Israelis due to a lot of interaction, but for Jews East Jerusalem is unknown.”<sup>163</sup> Stigma is certainly a cause for hesitation. Many Palestinians fear being labeled as a normalizer as a result of cooperating with the other. A senior Palestinian representative of FoEME was quick to retort against claims of normalization by denying the accusation. He instead stated that, “we are saving our environment for future generations. I am not doing a charity for Israel or Jordan, but for my

children.”<sup>164</sup> There are certainly other factors contributing to non-cooperation, but these were regularly verbalized.

As previously discussed, for many involved in wastewater cooperation, the greatest hindrance is the issue of the settlements. Very clearly and consistently, a line was drawn between the Israelis in general and the settlers. One Palestinian participant stated that, “Israelis are my neighbors, but settlers are illegal”.<sup>165</sup> Much like with wastewater infrastructure planning, cooperation stops altogether at the mention of cooperating with settlements. For the Palestinians, this is not a point of negotiation and there is no room for further discussion. On the aforementioned spectrum of normalization and cooperation, settlements are the highest point of normalization. Living beside Israelis is not as contentious of an issue at this point, but settlers are viewed as actors of aggression and blatant intruders on Palestinian land.

#### *Israeli Technical Sector Narrative*

The Israeli professionals in the technical sector also cooperate with Palestinians. However, there is a noticeable hesitation to explicitly talk about peace or refer to their efforts as peacebuilding. They consistently focus on the technical rhetoric and leave peacebuilding under the political category. However, an Israeli participant mentioned that there is much more cooperation occurring than is talked about, similar to the narrative of Palestinians in the technical sector. Despite this fact, many participants indicated they tried to avoid political discussion because as soon as it infiltrates the discussion, complexity increases exponentially and productivity is lost.

Israelis in the technical sector also advocate that waiting for a political agreement is not an option. It is imperative, according to the participants, to work on finding solutions now and to let the politicians worry about the politics. Another Israeli participant did illustrate a challenge to this idea, saying that the solutions implemented can only be in the “intermediary as there can be nothing long-term without a peace agreement.”<sup>166</sup> Meeting the immediate needs of people is high on the priority list, but long-term sustainability is presented as contingent upon a political agreement.

One Israeli participant suggested that participation in cooperative efforts is driven by benefits. The participant claimed that people are “involved because they see a benefit, and shared economic benefit drives participation, but they also build relationships, which causes a ripple effect.”<sup>167</sup> Many of the participants in the technical sector, both Israeli and Palestinian, also identified that benefits are a driving force for cooperation. A partici-



pant from the Israeli FoEME office expressed this well: even if a participant only cooperates to increase their benefits, they still cooperate and, therefore, are likely to have positive interactions, which can change their narrative about cooperation. Cooperation is also a commitment that must constantly be a conscious effort. This same participant alluded to this in saying that “we all get pulled back into our narratives when tragedy strikes.”<sup>168</sup>

Israelis have the luxury, as the hegemon, to recede into their own society and not interact with Palestinians when the political situation deteriorates. Palestinians on the other hand must continue to interact regardless of what they may actually want. In this way, Palestinians often cooperate out of necessity, but Israelis cooperate only when they want to. Israel enjoys a strong economy, domestic autonomy, and asymmetric power. On the contrary, the Palestinian territories operate under occupation and a weak economy. The Palestinians cannot avoid Israelis due to the economic reliance and the reality of an occupation, making cooperation more a necessity than purely an effort towards peace.

### 5.3c Political Sector Narratives

The political sector includes members of the political community such as Palestinian mayors, the Palestinian Water Authority (PWA), the Israeli Water Authority (IWA), and the Israeli Authority for the Protection of Nature and National Parks. These individuals and organizations represent low and intermediary levels of government, but their narratives exhibit distinct differences from both the technical and household level.

#### *Palestinian Political Sector Narrative*

The Palestinian politicians, primarily mayors, acknowledged the urgency of finding solutions to environmental issues and stressed that waiting for a peace agreement is not an option. One Palestinian mayor emphasized the importance of continued cooperation at the professional level to push decision makers at the political level.<sup>169</sup> However, another Palestinian mayor argued that cooperation depends on the political situation: when the political situation turns stale or becomes difficult, cooperation as a whole decreases.<sup>170</sup>

The PWA heavily focuses its narrative on their obstacles in cooperating with the Israelis. Settlements were again presented as an immediate deadlock. They found it perplexing that Israelis unilaterally created the settlements but then came to the Palestinians to ask permission to lay water pipelines. In this same conversation, they discussed the shortcomings of the JWC. The JWC was described as a tool for domination: Israel has the ultimate veto power and justifies its decisions in

security terms with no further explanation. The PWA submits that due to the power asymmetry, a third party is necessary for negotiation, which is a common dispute settlement mechanism.<sup>171</sup>

Similar to Mark Zeitoun’s argument, the PWA stresses that a primary issue is the fact that Israel deals with water as a good whereas Palestinians view water as a right. Furthermore, providing water services contributes to the legitimacy of the state, so if Israel continues to provide water services and prevent the Palestinian government from providing this service, they are handicapping the Palestinians in the building of their state. The Palestinian Minister of Water also illustrated this point in introducing himself as the “Minister of Nothing”, as Palestinians are not allowed any control of water because Israel views water as a strategic resource. These narratives explain why the primary benefit of ‘building Palestine’ through improved wastewater management systems is extremely important to counter-acting power asymmetries.

#### *Israeli Political Sector Narrative*

The narrative of the Israeli political sector is wrought with arguments that imply Palestinian inability to manage wastewater without Israeli oversight. Some Israeli government officials stated, “as long as water was in municipalities, the resource was mismanaged and needed to be corrected.”<sup>172</sup> The officials also spoke of the need to convince Palestinians to treat their wastewater. On several occasions, Israeli officials expressed frustration over Palestinians’ lack of interest in treating wastewater, instead allowing the untreated effluent to flow downstream into Israel.

Israeli government representatives referred to Article 40 of the Oslo Accords, the section discussing water and sewage. They claimed that they are bound by this agreement until another one is made, but that the “Palestinians do not like to follow this agreement.”<sup>173</sup> Their claim was presented as Israelis simply trying to follow the rules, but negotiating with a party that does not (Palestinians). This part of the narrative reveals an inconsistent application of international law. The Israelis defend the legitimacy of the Oslo Accords; yet disregard the international community’s decision regarding the illegal nature of the settlements. Hegemony and power asymmetry likely allows for this inconsistency.

*In order to create an atmosphere conducive to cooperation, there should be room for mutual input and compromise as opposed to one party simply teaching the other.*

On a technical level, relationships with Palestinians were presented to be in good standing. An Israeli participant acknowledged that planning together is rather easy and straightforward, but implementation is where problems and political obstacles arise. When pressed further on this issue, the “Israeli communities in the West Bank” (settlements) were discussed. They recognize that Palestinians reject the settlements, but argue that the people living in the “Israeli communities in the West Bank” are citizens of Israel, so Israel has an obligation to provide services to them. As for cooperation, the same Israeli participant added that they frequently offer technical knowledge and trainings to the Palestinians. One representative said, “we prefer to help them develop themselves.”<sup>174</sup> However this is not cooperation; teaching is not cooperating. This demonstrates an attitude of superiority that is more characteristic of domination than cooperation. In order to create an atmosphere conducive to cooperation, there should be room for mutual input and compromise as opposed to one party simply teaching the other.

For those at the technical level working on cooperative projects to develop household-level wastewater management, there was little acknowledgement of a stigma in the narrative. Instead, there is a clear distinction between politics and technical work. Peacebuilding is done through politicians at the political level. This is disconnected from the technical work being done to develop wastewater management. This tendency is observed regardless of what lens the cooperative wastewater projects are viewed through. One organizational leader frequently reiterated that he is not a peacebuilder at a peacebuilding organization. The focus is simply on water.<sup>175</sup> Though it went unacknowledged, this tactic begs the question of whether or not it is a protection mechanism. Refusing to engage in political discussions disassociates the organizations from the fluctuations of the peace process. In doing so, they remain separated from the larger political discussion in which conversations about normalization play a larger role. Furthermore, homeowners seeking to implement decentralized wastewater treatment projects readily accepted the non-political narrative of the project and focused instead on primary project benefits.



**Cabbage grown with recycled graywater**

Photo credit: Kristine Smith

## 5.4. Findings

These narratives revealed six mechanisms by which individuals and organizations sought to counter or avoid stigmas that would have prohibited them from continued cooperation. These mechanisms were not always expressed as explicit tools used intentionally to avoid these pressures, but they can be understood as serving that purpose.

### 5.4a Separate the Political and the Technical

#### 5.4b Focus on Environmental Need

Focusing on the dire environmental need proved to be another mechanism by which organizations can avoid the normalization stigma. Benefits to the environment are consistently referenced in Palestinian narratives, which could be a means to overshadow Israeli involvement. Since the treatment of wastewater in Palestine is so limited, communities are desperate for a solution. Multiple organizations stressed that when they emphasized that their cooperative work was to meet this dire need, it was widely accepted.

#### 5.4c Little Acknowledgement of Cooperation

As was previously stated, narratives at the household level did not explicitly acknowledge cooperation. When asked directly how they felt about the cooperative projects between Israelis and Palestinian households, all household members signaled guarded indifference. After further discussion with the lead organizations, it became clear that the Palestinian homeowners interface mostly with the Palestinian organization that just happens to have an Israeli partner. This buffer against frequent direct interaction between the Israeli organization and Palestinian homeowners reduces the likelihood of the normalization stigma being placed on that individual, but it also removes significant opportunities for peacebuilding at the individual level. Instead, all opportunities for relationship development, which could turn into peacebuilding, are limited to the organizational or technical level

#### 5.4d Refuse to Work with Settlements

As was previously stated in section three, refusing to work with settlements was the last line of defense for all organizations engaged in transboundary cooperative projects. Not one organization encountered conducts wastewater management in coordination with or within settlements. This unshaking position is based on the idea that settlements are internationally recognized as illegal and any cooperative work with a settlement would be legitimizing the occupation. Organizations and municipal governments hold this conviction so tightly that they refuse the development of centralized wastewater treatment plants if there is a requirement that the plant also treat settlement waste, even if it means a plant will sit idle, as in Hebron.

#### 5.4e Take Pride in Good Work

Instead of backing down or hiding from the normalization stigma, some organizations have chosen to pursue projects that address environmental need, and do so through transboundary cooperation. When this is misunderstood as normalization, rather than change their focus or the project, they seek to educate the community about the benefits of the project. The most direct answer to a question regarding normalization came during a meeting with a senior leader of FoEME. He stated, “If what we are doing is normalization than we are proud of that. We are living together. We are addressing water needs. We are nonviolently resisting the occupation. We are developing the region.”<sup>176</sup> In his work, this leader has found that the more people understand this work as ‘building Palestine’, the more FoEME’s work is supported.<sup>177</sup>

#### 5.4f Cooperation as Necessity versus Cooperation for Relationship-Building

Unlike the organizations that intentionally engage in the work of transboundary wastewater management, many Israelis do not interact with Palestinians or visit Palestinian neighborhoods. Avoiding interaction is a protection mechanism from the real and/or perceived threat of physical harm. It also occurs due to a lack of necessity, as Israelis do not need to interact with Palestinians in their daily life. It is apparent from many exchanges that Palestinians are constantly interacting with Israelis whether they choose to or not. Applying for permits, crossing checkpoints, employment, and many other aspects of daily life require interaction with Israelis. This is not the case, however, for Israelis. Many Israelis must make a conscious effort to interact with Palestinians. When tensions increase, Israelis can recede into their secluded spaces and turn their heads. This asymmetry is important for understanding how each side conceives of cooperation. Palestinians see cooperation as a means to

an end, providing benefits and possibly easing their situation. Israelis, on the other hand, view cooperation as conscious peacebuilding or relationship building. These different ways of approaching cooperation reveal important nuances in expectations.

### 5.5. Recommendations

In order for cooperative wastewater management projects to reach their full potential, AIES, PWEG, and HWE should explore opportunities to increase dialogue about political and social issues instead of merely focusing on the technical aspects. Extra sensitivity in dialogue may be required at the organization-to-household level because of the context and stigmas involved. However, at the organizational level, there is great opportunity both internally and between partners to discuss key issues occurring in Israel and Palestine outside of water management.

*Ultimately, the partners are encouraged to view these projects as a catalyst rather than an end goal.*

1. Partner organizations should hold bi-annual or annual 2-day meetings. Partner organizations are recommended to have all staff from all three organizations (AIES, PWEG, and HWE) meet for two days, once or twice a year to discuss the projects and impact of political dynamics on the work. The purpose of this meeting is to discuss key technical issues, develop relationships across ethnic and political lines, and create room for discussion of the impact of political dynamics on the work. If possible given travel restrictions, meetings should be conducted in person.

Meetings could include:

- Discuss what environmental benefit the project(s) has had (technical)
- Discuss overall the success of each project (technical)
- Brainstorm opportunities for improvement of each project (technical)
- Discuss opportunities for greater integration and teamwork between the organizations (social)
- Discuss the impact of current political and cultural dynamics on the ability of each organization to engage in the project (political)
- Team Building Activities (social)

By encouraging dialogue at this level, relationship development is occurring. Over time, this has the potential to transform individuals, the organization, society, and ultimately the context. But this will not be accomplished overnight nor if the goal of these projects is not expanded to include environmental peacebuilding

as a primary project benefit. AIES, PWEG, HWWE, FoEME and other organizations working in this arena must have a common vision for what they can achieve through their transboundary projects.

Ultimately, the partners are encouraged to view these projects as a catalyst rather than an end goal. There is great potential, particularly at the organizational level, because relationships are already being built. As the building of transboundary relationships increase, greater understanding of the other increases. This can reshape the narratives to better understand and acknowledge the challenges and insights of the other side.

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<sup>146</sup> DISCLAIMER: The authors fully recognize that the narratives shared by interviewees may be a limited perspective and not their full reflections on the situation. The author's identity as students and as Americans, as well as a range of other factors, may have limited the interviewee from expressing their full range of opinions at any time. As a result, the interviewers have done careful analysis, recognizing the limitations, but also wanting to share honestly what was expressed in the conversations. This analysis attempts to understand the cultural implications behind given statements and acknowledge nonverbal signals given in an interview setting, without over interpreting the interviewees' statements.

<sup>147</sup> Etienne Balibar, "Difference, Otherness, Exclusion," *Parallax* 11, no. 1 (2005).

<sup>148</sup> Nathan C. Funk and Abdul Aziz Said, "Islam and the West: Narratives of Conflict and Conflict Transformation," *International Journal of Peace Studies* 9 no. 1 (Spring/Summer 2004): 3.

<sup>149</sup> Ibid.

<sup>150</sup> Donald Brenneis, "Telling Troubles: Narrative, Conflict, and Experience," *Anthropological Linguistics* 30, No. 3/4, no. Fall - Winter, 1988 (1988): 288.

<sup>151</sup> Ibid.

<sup>152</sup> Ibid., 281.

<sup>153</sup> Mark Zeitoun, *Power and Water in the Middle East: The Hidden Politics of the Palestinian-Israeli Water Conflict* (New York, NY: I.B. Tauris, 2012), 75.

<sup>154</sup> Participant O, interview by AU Practicum Team, West Bank, June 2014.

<sup>155</sup> Ibid.

<sup>156</sup> Participant N, interview by AU Practicum Team, West Bank, June 2014.

<sup>157</sup> Participant L, interview by AU Practicum Team, West Bank, June 2014.

<sup>158</sup> House of Water and Environment (HWE), interview by AU Practicum Team, June 2014, West Bank.

<sup>159</sup> Participant B, interview by AU Practicum Team, West Bank, June 2014.

<sup>160</sup> Participant Q, interview by AU Practicum Team, West Bank, June 2014.

<sup>161</sup> FoEME, interviewed by AU Practicum Team, West Bank, June 2014.

<sup>162</sup> Participant F, interview by AU Practicum Team, West Bank, June 2014.

<sup>163</sup> Participant K, interview by AU Practicum Team, Israel, June 2014.

<sup>164</sup> Participant B, interview by AU Practicum Team, West Bank, June 2014.

<sup>165</sup> Participant Q, interview by AU Practicum Team, West Bank, June 2014.

<sup>166</sup> Participant E, interview by AU Practicum Team, Israel, June 2014.

<sup>167</sup> Participant A, interview by AU Practicum Team, Israel, June 2014.

<sup>168</sup> Ibid.

<sup>169</sup> Participant P, interview by AU Practicum Team, West Bank, June 2014.

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<sup>170</sup> Participant M, interview by AU Practicum Team, West Bank, June 2014.

<sup>171</sup> Participant J, interview by AU Practicum Team, West Bank, June 2014.

<sup>172</sup> Israeli Water Authority, interview by AU Practicum Team, Israel, June 2014.

<sup>173</sup> Ibid.

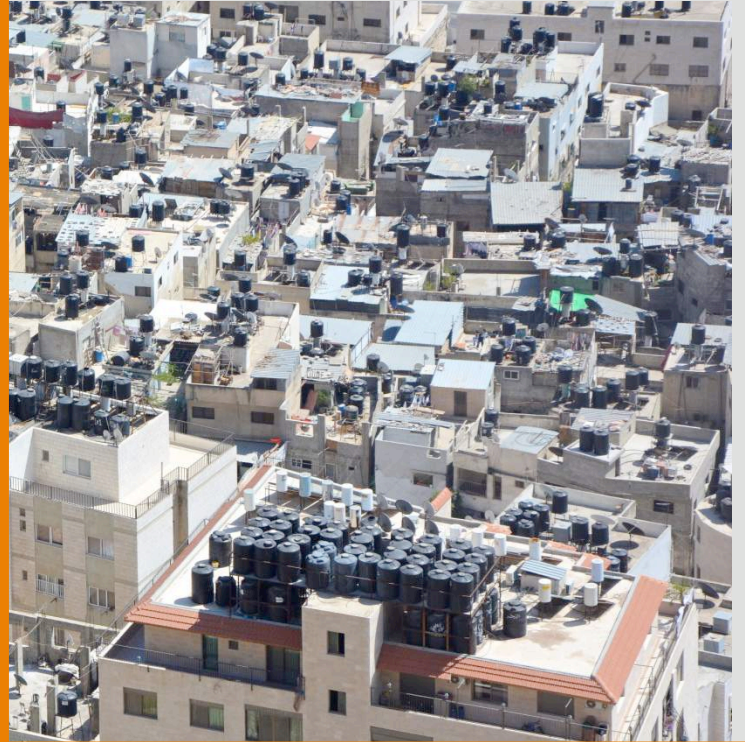
<sup>174</sup> Ibid.

<sup>175</sup> Participant E, interview by AU Practicum Team, West Bank, June 2014.

<sup>176</sup> Participant F, interview by AU Practicum Team, West Bank, June 2014.

<sup>177</sup> Ibid.

# GENDER: ANOTHER FEATURE OF POWER RELATIONS AND IDENTITY



## 6. GENDER: ANOTHER FEATURE OF POWER RELATIONS AND IDENTITY

### 6.1. Introduction

This section assesses the environmental peacebuilding significance of the cooperative decentralized wastewater systems based on the project partners' ability to incorporate gender strategies into their initiatives. This gender-based assessment of the cooperative wastewater projects builds upon the work of the 2013 AU Practicum Team who visited the region. Given gender's presence throughout all levels of society, its relevancy to the study of peacebuilding projects within conflict zones is indispensable. If wastewater initiatives, like those of AIES, HWE and PWE, are to respond appropriately to the water needs of their projects' beneficiaries, and also work to build peace and understanding between Israelis and Palestinians, understanding the interrelationship between gender and conflict is key. Firstly, conflict settings in particular create hostile conditions in which norms and capacities to produce, provide and protect are disrupted. Inevitably, gender roles are susceptible and conflict causes men and women to face various forms of insecurity that challenge their ability to fulfill traditional roles within society. Secondly, "Men and women use water differently according to their gender-specific roles. Women tend to have greater water needs due to their domestic responsibilities like washing family clothes, bathing children, and preparing meals".<sup>178</sup>

#### GENDER

**Gender** is a product of social, cultural, and economic elements, as well as other systems of power between and among men and women. These elements and power relations determine what is and is not feminine and masculine within a given society. Theoretically and in practice, gender is framed as a fluid concept, constrained by time and space, but also dynamic and receptive to situational demands.<sup>1</sup> The experiences of men and women are not consistent across geographical areas or time periods, and each takes on different roles depending on his or her given situation.

Gender relations and water are basic aspects of daily life that conflict tends to adversely affect. Learning to recognize how these three concepts interact is essential for leveraging the success of wastewater management

projects (in satisfying the needs of their beneficiaries,) and ultimately, for engendering transformative peacebuilding. In particular, utilizing gender in peacebuilding carves a more inclusive space that "takes into account variations in experience, need and interest among people" and works to address power asymmetries that otherwise obstruct a community's path toward reduced water pollution and an increased water supply.<sup>179</sup>

*Gender relations and water are basic aspects of daily life that conflict tends to adversely affect. Learning to recognize how these three concepts interact is essential for leveraging the success of wastewater management projects (in satisfying the needs of their beneficiaries,) and ultimately, for engendering transformative peacebuilding.*

### 6.2. Palestinian Society At-Large

Gender roles in the West Bank are based on a traditional, patriarchal division of labor in which men dominate the public sphere and women are largely relegated to the domestic sphere.<sup>180</sup> Palestinian women bear an unbalanced burden in the 'care economy', which includes child rearing, and caring for the sick and elderly.<sup>181</sup> In 2011, only 16.7% of women participated in the labor force<sup>182</sup> within clerical positions, certain sectors of the service industry, and agriculture, while 70% of men were employed primarily as plant and machine operators, craftsmen, services and sales associates, legislators, and managers.<sup>183</sup>

Due to gender's variable nature, gendered perceptions and behavior are full of contradictions. For instance, increasing economic pressures are leading male family members to be more accepting of female family members' employment outside the home; at the same time, older women still expect younger women to perform a full workload of household chores.<sup>184</sup> Conversely, because some employers believe that women do not need to provide financially for their families, employers prefer hiring males even when there are more qualified women applying for the jobs.<sup>185</sup> Clearly, women are facing conflicting demands to fulfill the dual role of income contributor and housewife.

Despite the prevalence of customary values and norms, the persistence of new generations and financial needs are influencing the gender division of labor. Taking note of these changing roles is important because the households involved in the wastewater management

projects rest within this gendered, political and social framework. However, societal roles are more susceptible to changing circumstances, while identities and relations are not as easily altered. The physical restrictions of the conflict, such as is explained in section three with the “Matrix of Control”, further impact and add an additional layer of complexity to gender relations in Palestinian society.

### 6.3. Gender Analysis

Gender studies and mainstreaming are now widely recognized in international and national arenas as integral components of effective and sustainable peacebuilding efforts. Unfortunately, gender analyses are often reduced to number counting and thus insufficiently gather dynamic, qualitative data. Another unintended consequence of gender mainstreaming is the substitution of the term ‘gender’ for ‘women’. As a result, gender studies often fail to include male identities and issues. Focusing on only one side of the gender equation overlooks this relational quality and provides an incomplete understanding of gender dynamics in the context of conflict and peacebuilding efforts. Provided that peacebuilding requires a holistic approach, this report adopts International Alert’s gender-relational approach to gender analysis. “Gender is a relational concept, meaning that gender identities are created in relationship with each other, in the context of the whole society.”<sup>186</sup>

The gender-relational approach entails moving away from equating gender with women and girls, and examining how gender intersects with other identity markers, such as age, socio-economic status, sexual orientation, disability, ethnic or religious background, marital status, and urban versus rural setting.<sup>187</sup> The category of “women’s issues” inaccurately lumps an individual under her gender and does not consider the other criteria that defines her situation. For instance, a married, rural, middle class, Muslim, Palestinian woman in the occupied Palestinian territories faces different constraints and possibilities than a young, unmarried, urban, upper-middle class, atheist woman living in Tel-Aviv. The roles, relations, identities, and attitudes of an individual woman or man are conditioned by both structural and individual factors.

A gender-relational approach aims to reveal the gender roles and relations that “influence a society’s propensity for violent conflict, the extent to which those roles and relations are themselves shaped by violent conflict, and the opportunities they present for transformative change.”<sup>188</sup> Thus, such an approach is suitable for examining the violent context in which AIES, HWE and PWEG operate, i.e. the Israeli-Palestinian conflict.

Furthermore, a gender-relational framework specifically “allows a better examination of the power and privilege granted to certain men and women but denied to others...As gender dynamics are always about power, it is thus essential to avoid seeing work in this field as merely ‘technical’ but rather to acknowledge its political nature.”<sup>189</sup>

### 6.4. Findings

#### 6.4a. Perceptions of Gender at the Organizational Level

The findings from this assessment confirmed the assumption that the practice of interchanging the term gender for women is prevalent. When asked questions concerning gender strategies and analyses, all of the technicians, government and project personnel gave a response that featured only women. Even though AIES must conduct a gender analysis for its projects with USAID and despite the fact that the 2013 AU Practicum Team delivered it as a recommendation, AIES staff confirmed that the Institute does not have a gender strategy at the organizational level.<sup>190</sup> Additionally, none of the other organizations interviewed have a gender strategy in place at the structural or project level. However, a female representative from one of the multinational NGOs interviewed discussed the possibility of doing gender training for its entire staff,<sup>191</sup> and ensured that 40 percent of its project participants are female. Nonetheless a male, Palestinian staff member from the same NGO reported it is not easy to reach a gender balance or engage Palestinian women because of cultural norms and traditions.<sup>192</sup>

*“Research shows that in cases where women and men are equally consulted in terms of location and placement of water and sanitation infrastructure, the installations are more frequented, better maintained and technically appropriate.”*

Of the technicians, household members, and government and project staff interviewed, men by far outweigh the number of women involved in wastewater management interventions, particularly in the professional sphere. Besides female engineers, few women are employed in the wide range of infrastructure professions and businesses, yet many young women are continuously pursuing degrees in the field.<sup>193</sup> At one Palestinian NGO, the Acting-Director, a woman, acknowledged that her position of authority makes men unwilling to work with her.<sup>194</sup> A female employee at the same organization said that academically, women outnumber men in civil engineering programs. Yet, “while women play a prominent role in water manage-

ment in the domestic sphere, they are considerably under-represented in the public sphere.”<sup>195</sup>



**Irrigation using water from DWW system**

Photo Credit: Natalie Wisely

#### 6.4b. Gender Realities at the Household Level

The observations made and interviews conducted reveal where and how gender issues are considered, and confirm that power asymmetries in gender relations persist. Ultimately, the one-sided viewpoint of ‘gender equals women’ limits what cooperative wastewater projects can achieve. “Research shows that in cases where women and men are equally consulted in terms of location and placement of water and sanitation infrastructure, the installations are more frequented, better maintained and technically appropriate.”<sup>196</sup> However, there appears to be irregular information sharing among men and women by the project staff; not all beneficiaries are actively engaged nor their opinions sought out; and gender is not part of the selection criteria for households.

In at least one household, both male and female beneficiaries knew how the graywater system functioned, while in another the female beneficiary scarcely dealt with the project at all. Additionally, due to a rushed deadline to install the projects, the beneficiaries were not properly trained on what household products were suitable and how to maintain the graywater systems. As a result, improper upkeep and malodors caused two households to periodically disconnect the graywater system, one of which permanently halted its

connection. During one site visit, instead of telling both male and female beneficiaries concurrently, project staff instructed the male beneficiary on how to use the eco-friendly products provided to alleviate the malodors, and was told to relay the information to the female beneficiary.<sup>197</sup> At the same household, male and female beneficiaries had disparate viewpoints on how well the system was working.

Moreover, project staff did not always seek out the female beneficiary’s insight on the wastewater project. This may have been due to a language barrier, or cultural norms and traditions that prevent cross-gender interaction. For instance, the female AIES staff present at the site visits spoke none or limited Arabic; the only fluent Arabic speaker from the AIES project staff was male, which may prevent him from entering female-only spaces. This is problematic for gathering information and understanding what was not working with wastewater systems. Given their roles in the community, learning how both genders perceive and use the graywater system would contribute to a more comprehensive evaluation of the project. Furthermore, research shows that “women and men may have different information and perspectives about the causes and consequences of water-related problems”.<sup>198</sup>

### 6.5. Recommendations

Gender in wastewater projects, and in peacebuilding generally, is still very much approached as a one-gender issue. Identifying gender as involving both women and men will contribute to the sustainability and effectiveness of AIES, HWE and PWEG’s projects. Additionally, carrying out a gender strategy will help these organizations interpret the context of power, violence and conflict in which they and their target population dwell. Inescapably, the Israeli-Palestinian conflict suffers from a deeply entrenched power asymmetry, which transcends the national sphere and is reproduced at the domestic level. However, because gender is not yet wholly acknowledged as a key component of wastewater projects, the cooperative initiatives do not yet have meaningful impact on gender relations in peacebuilding and continue to reproduce unconstructive gender relations.

In order to benefit from a gender relational approach, the AU Practicum Team’s recommendations to the project partners are as follows:

1. Adapt existing analysis mechanisms to include gender rather than reinvent the wheel. AIES initiatives seek 1) to address “social/communal elements”, such as enhancing food security by creating an additional source of water, and 2) to enhance peacebuilding through the “mapping



of waterscapes”.<sup>199</sup> Rather than needlessly create a new method of analysis, AIES can incorporate a gender dimension to its mapping of waterscapes. A gender-relational approach, for example, provides an additional descriptive layer and provides greater insight on how to design and implement more appropriate and effective wastewater interventions.

### WATERSCAPES

AIES defines waterscapes “as the political, economic, cultural and ideological dimensions of the community’s relationship to water and its productive capacity.”

2. *All primary household beneficiaries, male and female, should attend an informational workshop on graywater systems before the installation is complete.* The improper distribution of information caused two households to periodically shutdown their wastewater system. To ensure a higher rate of project success, at least one male and one female beneficiary from each household should be required to attend a workshop that covers how a graywater system works and how to properly maintain it. This step can be built-in to the project plan to ensure its completion.

3. *Include an Arabic-speaking male and female staff member during all interactions with project beneficiaries.* Cultural norms and traditions may require the presence of a person from the same gender in order for interactions to take place. It is also necessary to communicate with beneficiaries in their own language. AIES, PWEG, and HWE all have at least one male and female staff who speak Arabic and Hebrew. Proper communication and adherence to social norms allows for a greater exchange of information and understanding.

4. *Use donors as a resource for gender training.* Donors such as USAID emphasize the use of gender studies in their projects. Many have also published gender manuals and toolkits that can easily be accessed and adapted to an organizations particular structure. For instance, if AIES does not know where to begin with its gender training it is highly likely it can request one from USAID. There can also be a chain of training of trainers; one of the project partners receives gender training and then shares their knowledge with the others.

Gender’s centrality in socio-communal relationships and its influence on water-related roles incites such questions as, “Which gender uses water more on a daily basis?” “How is the benefit of the additional source of water perceived by males versus females?” “Which gender benefits more from the added availability of

graywater?” These questions, and others, produced through a gender study will increase the project partners’ sensitivity to gender dynamics. This increased awareness will in turn aid in governing the success of cooperative wastewater projects to produce reusable water and ultimately, contribute to the building of Palestine.

<sup>178</sup> US Agency for International Development (USAID), *Water and Conflict Toolkit*, by Sandra Ruckstuhl, Emily Gallagher, Geoff Dabelko, Russell Sticklor, Lauren Herzer Risi, Cynthia Brady, Kirby Reiling, and Mary Ackley (Washington D.C.: United States Government Printing Office, 2014).

<sup>179</sup> Conciliation Resources, *Gender in Peacebuilding*, last accessed June 2014, [http://www.c-](http://www.c-r.org/sites/default/files/CR_Gender_peacebuilding.pdf)

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<sup>180</sup> United States Agency for International Development (USAID), *USAID/West Bank and Gaza Gender Analysis*, by Ayesha Al-Rifai, Dominique Lallement, Nader Said and Rami Wihaidi, (Washington D.C.: United States Government Printing Office, 2012),

<sup>181</sup> *Ibid*, ix.

<sup>182</sup> *Ibid*, 8.

<sup>183</sup> *Ibid*, 8.

<sup>184</sup> *Ibid*, 11.

<sup>185</sup> *Ibid*, 27.

<sup>186</sup> Henri Myrntinen, Jana Naujoks, and Judy El-Bushra, *Re-thinking Gender and Peacebuilding*, International Alert, last accessed July 3, 2014, <http://www.international-alert.org/resources/publications/re-thinking-gender-peacebuilding>

<sup>187</sup> *Ibid*.

<sup>188</sup> *Ibid*.

<sup>189</sup> Myrntinen, *Re-thinking Gender and Peacebuilding*.

<sup>190</sup> *Water, Cooperation, and Peace*. Practicum Report. Washington, D.C.: American University School of International Service, 2013, 40-41.

<sup>191</sup> Participant A, Interview by AU Practicum Team, Israel, June 2014.

<sup>192</sup> Participant B, Interview by AU Practicum Team, West Bank, June 2014.

<sup>193</sup> United States Agency for International Development (USAID), *USAID/West Bank and Gaza Gender Analysis*, by Ayesha Al-Rifai, Dominique Lallement, Nader Said and Rami Wihaidi, (Washington D.C.: United States Government Printing Office, 2012), 22.

<sup>194</sup> Participant D, Interview by AU Practicum Team, West Bank, June 2014.

<sup>195</sup> US Agency for International Development (USAID), *USAID/West Bank and Gaza Gender Analysis*, 23.

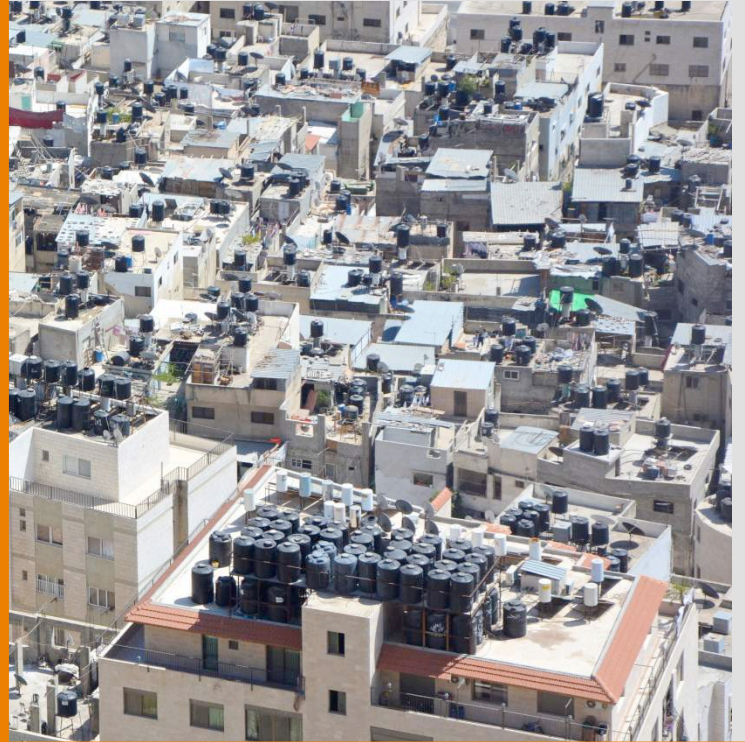
<sup>196</sup> United Nations Environment Program et al, *Women and Natural Resources: Unlocking the Peacebuilding Potential*, by Adrienne Stork, Cassidy Travis and Silja Halle, (New York: United Nations, 2013).

<sup>197</sup> Site Visit 1, AU Practicum Team, West Bank, June 2014.

<sup>198</sup> USAID, *Water and Conflict Toolkit*.

<sup>199</sup> The Arava Institute for Environmental Studies, “Decentralized Greywater Treatment and Reuse for Rural Communities,” accessed July 22, 2014, <http://arava.org/arava-research-centers/center-for-transboundary-water-management/decentralized-wastewater-treatment-and-reuse-for-rural-communities/>

# CONCLUSION AND RECOMMENDATIONS



## CONCLUSION & RECOMMENDATIONS

The cooperative decentralized wastewater projects between AIES, PWE, and HWE have significant potential for both their environmental benefits and peacebuilding significance. At the technical level, due to their lower costs and small scales, these projects can be easily implemented in rural areas that might otherwise have limited access to wastewater services. The projects' smaller scale also allows the systems to be more locally appropriate and more directly meet citizen needs. Compared with larger centralized systems, this flexibility is a key benefit of decentralized systems. The projects have clear environmental, financial, and public health benefits, all of which contribute to the building of the Palestinian state and the re-balancing of power asymmetries.

These projects also have potential for impact on relationships and peacebuilding. By encouraging cooperation between Israelis and Palestinians that challenges the normal power dynamics, it is possible to slowly reshape society, even if it begins at the micro level. A mapping of current relationships also shows that there is potential to develop certain relationships to further strengthen and build local governments. Finally, an analysis of the narratives and gender dynamics shows there is room to expand the diversity of participants and to also create a program that understands individual perspectives and engagement in the project. Continued development of each of these aspects will increase the projects' peacebuilding significance.

### I. Summary of Recommendations

The recommendations listed below are a compilation of those found at the end of each section. In order to fully understand each recommendation, please see the section(s) referenced for more information about the topic.

1. *Elevate distributed wastewater treatment as a preferred wastewater management option.* The broader global rethinking of the efficacy of large-scale CWW reaffirms the distributed treatment model on which the project partners focus their efforts. Project partners should include an educational component in their cooperative initiatives that informs communities of the benefits of decentralized wastewater treatment systems and to emphasize that these are not merely stopgap measures but are, in some cases, the most appropriate management response. (Section 2)

2. *Continue to involve local and national authorities in wastewater treatment projects.* Development projects can often undermine local institutions, so it is positive to

see the lengths to which HWE, PWE, and AIES go to empower local communities and governance systems. However, this must be constantly reinforced and upheld, as these cooperative wastewater projects are an excellent opportunity to build government capacity in wastewater treatment, thus 'building Palestine'. (Sections 2 and 3)

3. *Consider all three distributed wastewater management system as options for cooperative project initiatives.* Projects that are scaled up to community-scale DWW or small-scale CWW would enable larger portions of a population to obtain wastewater services, and could thus increase the impact of project benefits, potentially providing an alternative context to frame the relations between Israelis and Palestinians by 'building Palestine' and improving both environmental and public health. (Section 2)

4. *Maximize NGO freedom to expand transboundary networks.* Given that NGOs have additional amounts of freedom within a highly polarized system, use that freedom to empower, engage, and expand professional, transboundary networks. By linking Palestinian and Israeli professionals, a greater peace constituency may be built. Utilizing personal connections may be the single most important key in expanding the network of professionals. (Section 4)

5. *Hold bi-annual or annual 2-day meetings.* Partner organizations are recommended to have all staff from all three organizations meet for two days, once or twice a year to discuss the projects and impact of power relations and political dynamics on the work. The purpose of this meeting is to discuss key technical issues, develop relationships across ethnic and political lines, and create room for discussion of the impact of political dynamics on the work. If possible given travel restrictions, meetings should be conducted in person. Intra-organizational dialogues should also be held to discuss similar issues. (Sections 3 and 5)

6. *Adapt existing analysis mechanisms to include gender rather than reinvent the wheel.* AIES initiatives seek 1) to address "social/communal elements", such as enhancing food security by creating an additional source of water, and 2) to enhance peacebuilding through the "mapping of waterscapes".<sup>200</sup> Rather than needlessly create a new method of analysis, AIES can incorporate a gender dimension to its mapping of waterscapes. A gender-relational approach, for example, provides an additional descriptive layer and provides greater insight on how to design and implement more appropriate and effective wastewater interventions. (Section 6)

7. Ensure attendance of all primary household beneficiaries, male and female, at an informational workshop on graywater systems before the installation is complete. A lack of information, be it by improper distribution or lack of understanding, caused two households to periodically shutdown their wastewater system. To ensure a higher rate of project success, at least one male and one female beneficiary from each household should be required to attend a workshop that covers how a graywater system works and how to properly maintain it. This step can be built-in to the project plan to ensure its completion. (Section 6)

8. Include an Arabic-speaking male and female staff member during all interactions with project beneficiaries. Cultural norms and traditions may require the presence of a person from the same gender in order for interactions to take place. It is also necessary to communicate with beneficiaries in their own language. AIES, PWE, and HWE all have at least one male and female staff who speak Arabic and Hebrew. Proper communication and adherence to social norms allows for a greater exchange of information and understanding. (Section 6)

9. Use donors as a resource for gender training. Donors such as USAID emphasize the use of gender studies in their projects. Many have also published gender manuals and toolkits that can easily be accessed and adapted to an organizations particular structure. For instance, if AIES does not know where to begin with its gender training it is highly likely it can request one from USAID. There can also be a chain of training of trainers; one of the project partners receives gender training and then shares their knowledge with the others. (Section 6)

## 2. Future Research

As further research is done on cooperative wastewater projects within Israel and Palestine, whether that project is implemented by AIES, PWE, HWE, or any other organization, there is room to expand on this report's research. The AU Practicum Team recommends the following topics for further exploration.

2.1. Do overt or covert water cooperative projects have a greater impact on peacebuilding? After interviewing organizations in the region including AIES, PWE, HWE, and FoEME, the evidence was inconclusive whether the greatest impact comes from those who are very open about their cooperative projects, such as FoEME, or working under the radar, like AIES and PWE. While FoEME's partnership has received accolades, they are often labeled as normalizers and marginalized by other Palestinian organizations. AIES, HWE and PWE, on the other hand, do not emphasize their partnerships in such a public way and are able to

work in many Palestinian communities, but seem to have little impact on peacebuilding beyond the technical level. Further research should explore the pros and cons of each approach, the implications of the current political situation on organizational choices, and the ultimate effectiveness of each strategy.

2.2. Does the incorporation of local governmental institutions strengthen their credibility and assist in 'building Palestine'? Local governments receive credibility for their ability to provide services to their people. Working with the local governments in the West Bank on wastewater management can assist in ensuring the best scale of project is implemented and that the local institutions are strengthened. As the project partners continue to involve local governance institutions, future research should explore the societal impact of this partnership.



Testing DWW Effluent

Photo Credit: Natalie Wisely

2.3 What impact does gender analysis have on project implementation and maintenance? At this time, AIES, PWE, and HWE do not have a clear understanding of the responsibilities for the implementation and maintenance of the decentralized wastewater systems of the individual households. If the gender recommendations in this report are implemented, future research should explore in what ways this improves the acceptance of, understanding of, and operation of the wastewater system.

2.4 How can youth education be incorporated to encourage a future generation that understands environmental sustainability and wastewater management? The AU Practicum Team was able to begin research on this topic, but was not able to complete enough research for a full analysis. A list of initial findings at the household, technical, and political level is given below to offer future research direction. Incorporating a youth strategy would both integrate peace education as part of the social strategy of such projects and allow the network of relations and beneficiaries to be more inclusive. **2.4a Preliminary Household-level Findings**

At the household level, there is an opportunity to educate youth on the reasoning for and implementation of cooperative decentralized wastewater treatment systems. The research was inconclusive as to the amount of knowledge the youth of each house have of the wastewater projects. By educating them on the project and encouraging their support in maintaining it, there is an opportunity to create wider acceptance of decentralized wastewater treatment as well as the knowledge of how to operate and maintain such a system.

**2.4b Preliminary Technical Organization/Education Findings**

At the organizational level, three programs that educate youth about the environment were analyzed, some of which also simultaneously provide them the opportunity to interact with the other.



**Recycled Tires as Flower Pots at Al-Afaq School**

Photo Credit: Natalie Wisely

1. *Schooling with a focus on environmental sustainability:* Al-Afaq school has an environmental focus for Arab residents of Jerusalem who have learning and behavioral disabilities. In addition to the environmental focus, the school seeks to build networks and relationships between Israelis and Palestinians starting inside the classroom. Within the next year, the Al-Afaq school will begin language instruction in Hebrew and Arabic, allowing for the possibility of teaching both Hebrew and Arabic speakers on the same campus. This creates an opportunity for positive peacebuilding as students build cross-cultural, personal networks that eventually grow out of the schoolhouse and continue into adulthood.

2. *Environmentally focused curriculum and workshops.* As part of the “Good Water Neighbors” Initiative, FoEME invests in schools across the region to create model examples of water-wise buildings, workshops on water issues, regular instruction for 1,600 youth in regional water issues, specific training on building eco-facilities, and the construction of environmental education centers.<sup>201</sup> Cooperation between Israelis and Palestinians is an inherent part of FoEME’s programming for sustainable use of water resources in the Middle East. While AIES and PWEg have complementary but separate programs, FoEME-Palestine’s projects intersect to encourage greater environmental sustainability through the community. For example, at the Al-Afaq school, the students learn about environmentally sustainable living practices at workshops. When they bring this knowledge home and educate their parents about the opportunities, the parents can visit the local decentralized wastewater pilot project to determine whether or not they would like one as well. According to the director of FoEME-Palestine, after the classes there was a noticeable surge in requests from households seeking comprehensive wastewater treatment



**Solar Irrigation Project at Al-Afaq School**

Photo Credit: Natalie Wisely

systems. In comparison, while AIES implements small-scale wastewater treatment projects and provides workshops geared towards capacity building for technicians, decision makers, and residents of areas being studied,<sup>202</sup> the staff from the institute never spoke of an increase in systems requested from the community.<sup>203</sup> This disconnect in programming was confirmed by the site visits, where household members were completely unaware of the availability or existence of the systems before they were approached by PWEG or HWE.



**FoEME EcoPark**  
Photo credit: Natalie Wisely

*3. Extra-curricular initiatives and advertising.* PWEG also focuses their interventions on policymakers, but at the local authority level, which they combine into a comprehensive public information campaign. Their campaign holds community meetings with local leaders and residents who stand to be impacted by the projects, conducts awareness campaigns for sustainable resource use on a year-round basis as part of their annual budget, and engages students in regional competitions to create art out of refuse.

#### 2.4c Policy/Water Authorities Findings

Neither the Israeli Water Authority nor the Palestinian Water Authority has a discernible youth engagement policy. Allowing for a potential tie-in with youth and encouraging their participation will build toward environmental sustainability in the future.<sup>204</sup>

### 3. Final Analysis

The cooperative wastewater treatment projects implemented by AIES, PWEG, and HWE are effective at both the technical and relational level, but have room for greater expansion in order to be successful. The

peacebuilding criteria at the beginning of this report focused on five points, some of which were more successful than others.

#### 3.1. The initiative's ability to yield benefits

While the decentralized wastewater treatment systems are relatively new and overall still in their pilot phase, the systems are effective at providing the households with treated water for reuse, specifically through agricultural applications. The systems yield concrete environmental, social, and public health benefits by increasing the amount of water available, lowering monthly water bills, and relieving cesspits and septic tanks. In addition to environmental and public health benefits, the systems offer the primary uni-national benefit of 'building Palestine' by enhancing local authority legitimacy and building infrastructure in the region. The primary drawback to the AIES-HWE systems is the smell, about which numerous households complained. This can be resolved through educating household members about cleaning products that may be killing off bacteria in the systems. The primary drawback of the AIES-PWEG system is it is not as modular as the AIES-HWE system and it is difficult to expand its wastewater treatment capacity. Benefits yielded could be expanded if project partners increased the scale of their cooperative systems and expanded to cooperative community-scale decentralized wastewater treatment or small-scale centralized wastewater treatment.

#### 3.2. The initiative's ability to foster relationship building between Israelis and Palestinians.

The ability to develop relationships between Israelis and Palestinians through these programs has been very successful at the small scale, technical level. The AU Practicum Team observed genuine positive relationships between the project partners at AIES, PWEG, and HWE. However, at this time, this is limited to the organizational level and has not spread beyond this group to the general Palestinian household level or up to the governmental level.

#### 3.3 The initiative's ability to alter or provide alternatives to the manifestation of power asymmetries.

Due to their small scale, the projects cannot visibly alter the power asymmetries between Israelis and Palestinians. However, they can certainly be viewed as a start. As mentioned, one of the primary project benefits is their contribution to the building of Palestine by expanding wastewater treatment infrastructure and thus potentially enhancing Palestinian bargaining power and legitimacy. 'Building Palestine' can work to alter power asymmetries between Israelis and Palestinians by building Palestinian capacity. At the same time, it is also

unclear if by working under the radar, these projects are working to challenge Israeli hydrohegemony, or are unwittingly reinforcing it by attempting to work around the broader political conflict rather than to address it head-on.

### 3.4. *The initiative's ability to expand the inclusion of multiple demographics.*

While AIES has the framework in place to include gender in its project analyzes, the cooperative initiatives do not yet have meaningful impact on gender relations in peacebuilding and continue to reproduce unconstructive gender relations. Women were not properly engaged, and the lack of a gender strategy by the project partners further perpetuates this gap in inclusion. Involving both women *and* men will contribute to the sustainability and effectiveness of their wastewater management efforts. Furthermore, initial research did not conclude that youth were engaged in the program; the AU Practicum Team relinquishes final conclusions to those doing further research in the future.

### 3.5 *The initiative's ability to increase engagement in transformative experiences with the other.*

Different types and quality of interaction and engagement with the other happened at all levels of society that were analyzed: local, organization, and technical. However, transformative experiences were limited to the organizational level. At the local level, this lack of interaction with the other is due to the buffer the organizations put up between Israeli project partners and the household. At the political level, the larger dynamics of the Israeli-Palestinian conflict and peace process hindered transformative opportunities, as interaction was limited.

## 4. Concluding Thoughts

The AU Practicum Team believes that the cooperative wastewater projects could have a significant impact on the environmental and public health of the West Bank, the technical world of wastewater treatment, and the societal and political dynamics of the Israeli-Palestinian conflict. Impacting the environment, public health, and technical realms is far simpler than the more challenging arena of meaningful environmental peacebuilding. If the projects continue as they are at the moment, it does not appear they will have any significant peacebuilding ramifications beyond the few relationships developed between AIES, PWE, and HWE staff. However, the potential for the cooperative projects to build peace is present; AIES, PWE, and HWE have the capacity and understanding to proactively integrate environmental peacebuilding into their project initiatives. To develop transboundary relationships and peacebuilding efforts,

significant and difficult choices have to be made by the project partners to further engage the community in cooperation and dialogue.

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<sup>200</sup> The Arava Institute for Environmental Studies, "Decentralized Greywater Treatment and Reuse for Rural Communities," accessed July 22, 2014, <http://arava.org/arava-research-centers/center-for-transboundary-water-management/decentralized-wastewater-treatment-and-reuse-for-rural-communities/>

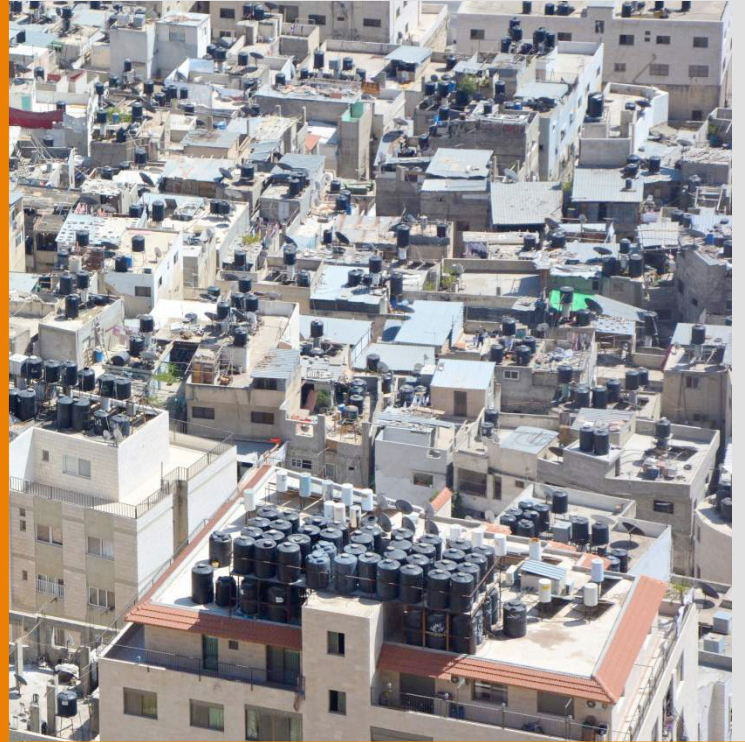
<sup>201</sup> Friends of the Earth Middle East, "Good Water Neighbours Project" accessed July 22, 2014, [http://foeme.org/www/?module=projects#Phase\\_I](http://foeme.org/www/?module=projects#Phase_I)

<sup>202</sup> Arava Research Centers: Center for Transboundary Water Management, "Decentralized Greywater Treatment and Reuse for Rural Communities" accessed July 22, 2014, <http://arava.org/arava-research-centers/center-for-transboundary-water-management/decentralized-wastewater-treatment-and-reuse-for-rural-communities/>

<sup>203</sup> Participant E, Interview by AU Practicum Team, West Bank, June 2014.

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