Water-Food-Energy Nexus Cooperation and Peacebuilding In the Middle East

2019 PRACTICUM REPORT

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The 2019 American University Practicum Team would to like to express our gratitude to our project partners, the Arava Institute for Environmental Studies (AIES) and the Palestinian Wastewater Engineers Group (PWEG), for their continued support and willingness to share their knowledge with us. We would like to particularly thank Monther Hind and Clive Lipchin for making this practicum possible.

To our interviewees, thank you for opening your homes and sharing your experience with us. We want to acknowledge the time you contributed for us to write this report. It is our hope that we have represented you appropriately.

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Disclaimer: All views, opinions, and recommendations expressed in this report belong only to the authors. They do not reflect the views of American University, faculty, project partners, or financial sponsors.

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About the Partners

Palestinian Wastewater Engineers Group (PWEG)

The Palestinian Wastewater Engineers Group, created in 2004, has grown since its inception in its ability to implement successful projects and promote community development in the West Bank. PWEG seeks to enhance wastewater management with an environmentally-focused agenda of improving regional water quality and decreasing pollution. In addition to implementing community-level graywater recycling systems, PWEG assists the local authorities by providing technical expertise and securing necessary funds for sanitation projects.

http://www.palweg.org/

Arava Institute for Environmental Studies (AIES)

The Arava Institute for Environmental Studies is a leading environmental education and research center based in Israel. They aim to prepare future Arab and Jewish leaders to cooperatively address the environmental challenges within the region. Affiliated with Ben-Gurion University, the institute promotes academic research initiatives on several environmental concerns and challenges, with a critical focus on international and transboundary cooperation. The Center for Transboundary Water Management, in particular, works to improve collaboration within the Palestinian-Israeli conflict.
http://www.arava.org

American University - Center for Israel Studies

The Center for Israel Studies is at the forefront of the growing academic field of Israel Studies. The center adopts a multi-disciplinary approach in order to reach beyond the Arab-Israeli conflict and provide a comprehensive examination of modern Israeli history, society, culture, democracy, and geopolitical challenges. American University's specialization in global education and central location in Washington, D.C. enables the Center to act as a national and international hub for promoting Israel Studies. http://www.american.edu/cas/israelstudies/

American University
School of International Service Practicum Program

The practicum program enables Master's students to gain hands-on experience in professional-level consulting and project management. Students work together to analyze program functionality in conjunction with partner organizations. This practicum work is conducted in partnership with both international and domestic non-profit organizations, government agencies, and private entities.The practicum consists of independent desk study, archival research, field research, and workshops facilitated by faculty members. The combination of field study and academic rigor amplifies students' ability to manage projects, conduct oral presentations, and produce publishable work. The students create a final product of a written report and oral analysis in which recommendations are presented to the partners. The 2019 Environmental Peacebuilding: Transboundary Water Cooperation practicum in Palestine and Israel would not have been possible without the support of the American University's School of International Service Practicum Program and the Office of International Programs.
http://www.american.edu/sis/practica/

Universalia

Universalia's practice area in *Environment, Security and Conflict Transformation* aims to support organizations working in the field towards improving their performance in meeting their development and peacebuilding objectives. Firmly rooted in the international community's vision of sustainability and peace, as articulated through the UN Sustainable Development Goals (SDGs), this practice reflects Universalia's multi-generational commitment to the pursuit of sustainable and equitable resource governance in conflict and post-conflict environments, advancing both human and environmental security. Universalia's practice is anchored in a thematic and methodological expertise and leadership, drawing on diverse experts and national consultants from across the world. http://www.universalia.com

List of Acronyms

AAVI	Auja-Arava Valley Initiative
AIES	Arava Institute for Environmental Studies
ATCA	Anti-Terrorism Clarification Act
BIP	Build Israel Palestine
CMM	Conflict Management and Mitigation
CWW	Centralized Wastewater
DWW	Decentralized Wastewater
HWE	House of Water and Environment
IDF	Israel Defense Forces
IWA	Israeli Water Authority
JAV	Jordan Arava Valley Committee
JWC	Joint Water Committee
MCM	Million Cubic Meters
NIS	New Israeli shekel
NGO	Non-Governmental Organization
PA	Palestinian Authority
PLO	Palestine Liberation Organization
PV	Photovoltaic solar energy
PWA	Palestinian Water Authority
PWEG	Palestinian Wastewater Engineers Group
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
USAID	United States Agency for International Development
USD	United States Dollars

Executive Summary

Photo credit: Aleah Holt

Since 2008, the Palestinian Wastewater Engineers Group (PWEG), a medium non-governmental organization (NGO) based in Ramallah, has had a partnership with the Center for Transboundary Water Management at the Arava Institute for Environmental Studies (AIES), an education and research center in southern Israel. This partnership has built on PWEG's work implementing decentralized wastewater treatment systems at the household level in West Bank villages, even expanding some projects to include photovoltaic systems . Another primary activity of the partnership has been the creation of the Jordan–Arava Valley (JAV) Committee, which brings together Palestinians and Israelis, mostly date farmers, to visit each other's communities and share agricultural techniques and expertise. Other projects have focused on tangible benefits for Palestinian date farmers with positive environmental outcomes.

After over a decade of working together, the PWEG-AIES partnership is facing a significant challenge: major funding restrictions that have cut short plans for future projects. As they pursue alternative funding sources, interest among Palestinian beneficiaries remains high, while Israeli participants have fewer avenues and limited motivation for continued engagement. Despite these obstacles, there continues to be a range of opportunities for PWEG and AIES to scale and diversify their projects across the conflict divide. This cooperative work also represents an example of environmental peacebuilding, as the activities of the partnership contribute directly and indirectly to mitigating the effects of the Israeli-Palestinian conflict.

Cross-border Cooperation in the Conflict Context

The partnership between PWEG and AIES is set against one of the world's most enduring and intractable conflicts, and their activities and operations are inseparable from the context in which they take place. In particular, water issues are significantly impacted by the second phase of the Oslo Accords in 1995, which was intended to be temporary, but continues to dictate groundwater withdrawal and water allocation quotas across the region.

Another major effect of the geopolitical circumstances is the partitioning of the West Bank, with some areas under exclusive Israeli control, which creates obstacles for physical infrastructure.

The work of PWEG and the partnership in part seeks to alleviate this impact by implementing decentralized utility systems.

Against this backdrop despite their divergent areas of focus, PWEG and AIES have developed a rich history of cooperation with a shared purpose. In addition to incorporating the people-to-people dimension through the JAV Committee, the partnership has scaled out their decentralized systems to a second village. The early years of the partnership predominantly focused on a single community, and only recently scaled out to include a smaller nearby village. However, an international political shift has led to the loss of an expected US funded grant, so the committee has since ended. Plans to transition the entire second village to decentralized wastewater treatment are uncertain, but the partners anticipate continuing to work together in existing and new capacities.

Theoretical Themes for Partnership Assessment

For the purposes of analyzing the immediate outcomes of the partnership's activities, five themes provided a framework to illustrate the key findings from the study. Equity, resilience, project and partnership sustainability, gender, and environmental peacebuilding comprise the theoretical basis and inform the indicators used to assess the data from key informants. Equity is a crucial consideration in the context of the power asymmetry of the Israeli-Palestinian conflict, to determine whether project activities contributed to transforming, or simply reproducing asymmetric power dynamics. This theme will determine whether project activities are contributing to transformation or simply reproduce asymmetric power dynamics. Resilience addressed livelihood factors that are central to PWEG's mission, along with environmental considerations. Project and partnership sustainability examined practical aspects of the relationship between PWEG and AIES and the technical, economic, and capacity-related aspects of their projects. The importance of gender sensitivity is only heightened by the conflict context and the disparate impacts already faced by women, and therefore, must be analyzed through the lens of the partnership. Finally, environmental peacebuilding literature informed an analysis of whether and to what extent the environmentally focused activities of the partnership do constitute peacebuilding.

Rapid Appraisal for Benefits and Discourse Analyses

Informed by the theoretical literature, fieldwork in the region lasted two weeks with eleven student researchers working with 33 key informants. This research period provided the basis for the benefits analysis of the partnership and allows for a discussion on larger themes drawn from our qualitative data. Semi-structured interviews with individual or group informants included participants and beneficiaries of the PWEG and AIES projects, staff from each organization, and government officials from Israel, Palestine, and the American funding agency. While explicit responses characterize attitudes and perceptions, a focus on the language and rhetoric will illustrate the underlying trends that form a common thread for discourse analysis.

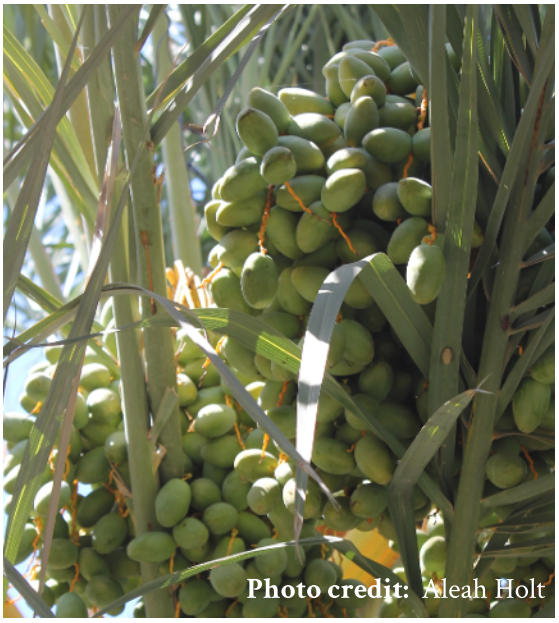


Photo credit: Aleah Holt

Results of Thematic Benefits Analysis

Equity:

- The partnership of PWEG and AIES demonstrates equity between the organizations through the contributions of each and symmetric relationship, and also the empowerment of women on staff.
- The selection process for project beneficiaries promotes equity within the Palestinian communities.
- The JAV Committee provides tangible and intangible benefits related to equity for both Palestinians and Israelis.

Resilience:

- The decentralized systems implemented by the partnership provide a range of benefits to improve Palestinian livelihoods on the individual, household, and community levels.
- Environmental benefits from the projects are outweighed by external trends of changing climate and settlement patterns.
- The livelihood circumstances of Israeli informants reflect the conflict asymmetry, while the environmental situation illustrates the necessity of cross-border cooperation.

Sustainability:

- Project scaling has been successful, but is threatened by the loss of funding.
- The strength of the relationship between PWEG and AIES sets them apart from other organizations and partnerships working in the same space.
- Partnership sustainability is affected by the different positions each occupies, PWEG provides access to West Bank communities, while AIES has far more access to a greater range of resources including donors and political support.

Gender:

- The JAV Committee created key accomplishments in building women-to-women relationships between Palestinian and Israeli participants.
- Participation in the JAV Committee has also contributed significantly to empowerment of Palestinian women and engagement in further project expansion.
- Decentralized wastewater treatment systems has provided a range of benefits, both tangible and intangible, for women at the household level.

Environmental Peacebuilding and Cooperation:

- Although Palestinian participants previously had significant informal contact with Israelis, the partnership projects created a space for relationship building and deeper interaction.
- Israeli participants derive few, if any, tangible benefits and are motivated primarily by an existing desire for interaction and filling a perceived need for assistance.
- The partnership is not included in other explicit peacebuilding work by AIES, and informants across all levels expressed a lack of ability for meaningful political engagement.

Underlying Themes of Partnership Context

- The scale of the PWEG and AIES partnership is insufficient to overcome the structural challenges stemming from the conflict: obstruction of movement, water infrastructure, and normalization.
- The divergent narratives that reflect the conflict and pervasiveness of entrenched views of the opposing group may be susceptible to reconsideration through means such as this partnership
- Funding dependency has been an ongoing challenge for both organizations and their cooperation.
- The partnership does represent a model of environmental peacebuilding, albeit on a small scale, but with evident impacts on participants.

Recommendations for Future Partnership Enhancement

- Develop a funding strategy for more equipment and facilities.
- Assess and create an equitable cooperative for date farmers in Marj Al-Ghazal.
- Explore further utilization of the date packing facility in Auja for potential cooperatives and additional packaging.
- Analyze expansion of other small- scale projects.
- Continue to pursue funding alternatives to achieve funding independence.
- Create a revolving fund to increase financial capacity.
- Consider expansion of building greenhouses that offers opportunities to incorporate gender equity objectives
- Reestablish a body similar to the JAV Committee to increase Israeli-Palestinian female participation.
- Develop a joint pest management strategy for all date farmer participants.
- Encourage more meaningful dialogue and cooperation between Israeli and Palestinian participants.

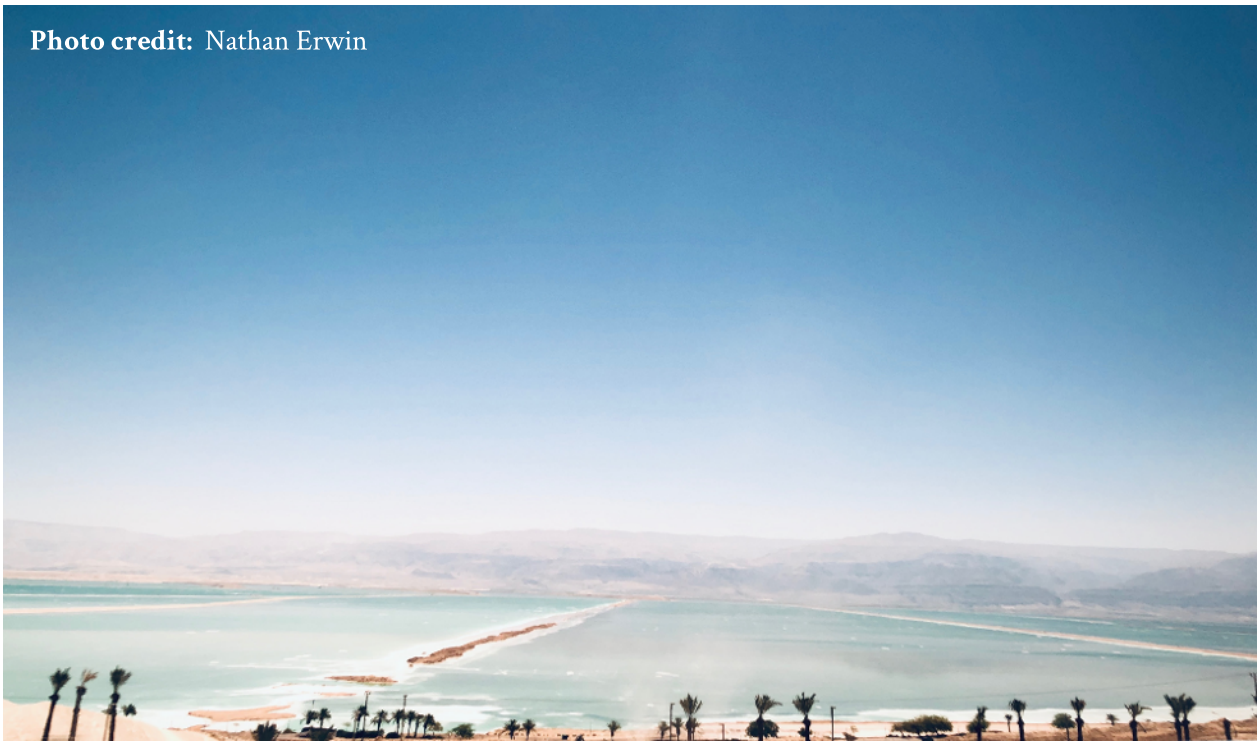


Photo credit: Nathan Erwin

Photo credit: Aleah Holt

Chapter 1 Introduction

1.1 About the Project

The 2019 American University (AU) Environmental Peacebuilding Practicum in Israel and Palestine examined the impacts of environmental collaboration in the Israeli-Palestinian conflict by assessing the partnership between the Palestinian Wastewater Engineers Group (PWEG) and the Arava Institute for Environmental Studies (AIES). In order to determine the peacebuilding potential of this partnership, and this type of collaboration, the practicum group performed a six-week desk study, conducted semi-structured interviews, and constructed a benefit analysis. This report presents our findings. The structure consists of a brief background on the conflict, a detailed history of the partnership between PWEG and AIES, the conceptual framework and literature we utilized, our methodology, and findings and analysis followed by a discussion section. As the sixth practicum group assessing the partnership, we aim to provide insight on the potential impact of transboundary environmental collaboration for building sustainable peace.

In 2008, PWEG and AIES first partnered together to establish household and neighborhood-level decentralized wastewater (DWW) treatment systems in the West Bank. These systems combat resource scarcity by providing up to 500-1000 liters per day through wastewater recycling. Decentralized wastewater recycling units offered an alternative for villages without adequate access to centralized wastewater treatment, while generating additional water for household use and small-scale agriculture. In 2016, the partners were able to scale up their project by introducing solar photovoltaic (PV) units to their pilot location, Auja. These units provided 35kWh peak capacity per day through off-grid solar production. Overall, this partnership addresses the water-food-energy nexus by connecting demands for resources (water and energy) with agricultural needs in order to improve livelihoods.This decade-plus partnership between AIES and PWEG aims to address the resource needs of villages in the West Bank through the cross-cutting view of the water-food-energy nexus. By utilizing several entry points to improve livelihoods, the partnership has provided a more holistic approach to development work.

While the future presents financial uncertainty, the partnership between the two organizations has "weathered the storm"[1] of funding cuts so far, and they hope to continue the development of comprehensive water management and transboundary engagement.

1.2 Organization of the Report

Following this introduction, the report is organized as follows:

- Chapter 2 provides background on the regional conflict context and an overview of the partnership between PWEG and AIES;
- Chapter 3 outlines the conceptual framework;
- Chapter 4 explains methodology and research methods, influenced by the conceptual framework and emphasis on stakeholder narratives;
- Chapter 5 presents a benefits analysis and key findings;
- Chapter 6 discusses key findings; and
- Chapter 7 concludes the report with general observations and recommendations for the future

Endnotes

[1] Interviewee 2, Interview 14

Chapter 2 Context

Photo credit: Aleah Holt

2.1 Conflict Context

The conflict in Israel and Palestine has roots spreading across a century. For the purposes of this report, we begin our overview of the conflict halfway through the last century. In 1947, the United Nations partitioned British Mandatory Palestine, creating the separate states of Israel and Palestine. However, the subsequent unilateral declaration of Israel's independence in 1948 was met with violent opposition. A coalition of Arab states invaded the region and a full-scale war erupted.[1] Since 1948, a number of wars have occurred, but in particular, the Six-Day War of 1967 redefined the conflict and introduced the challenge of allocating water resources between Israel and Palestinians. Israel decisively defeated another coalition of Arab states—Jordan, Egypt, and Syria—and occupied East Jerusalem and the West Bank (Jordanian territory), Gaza and the Sinai Peninsula (Egyptian territory), and the Golan Heights (Syrian territory).[2] Israel today occupies the Golan Heights, controls much of the West Bank and, though Israel withdrew from the Gaza Strip in 2005, continues to surround and control access to the territory.[3]

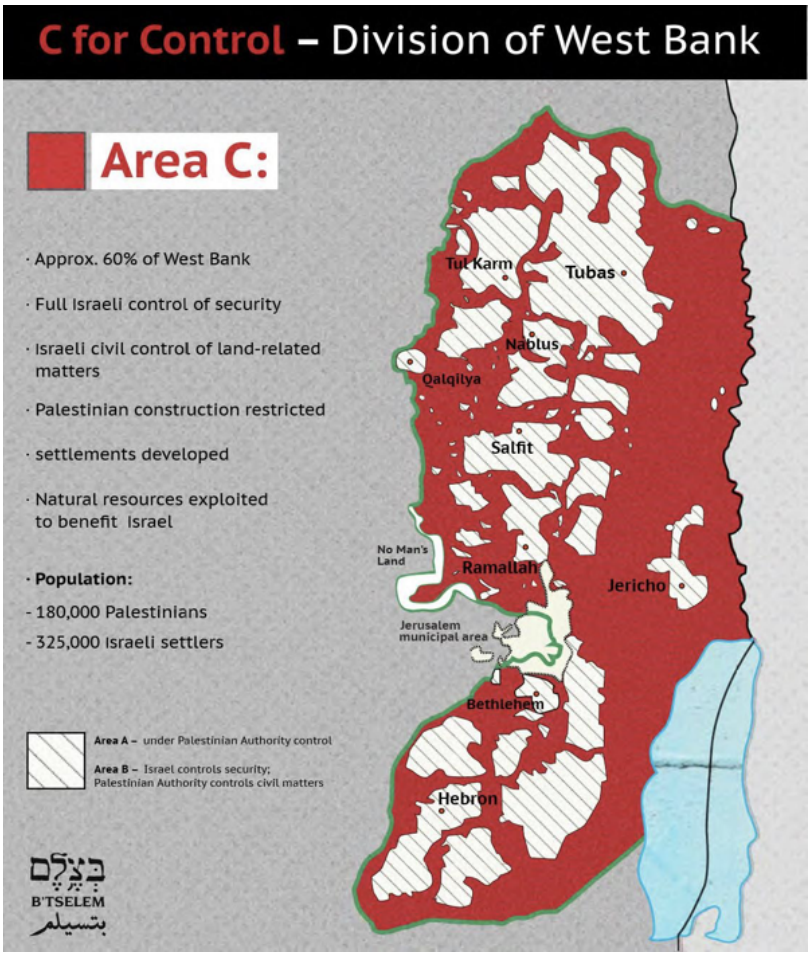
Protesting the ongoing occupation, Palestinians rose up in 1987 in the First Intifada. The First Intifada spurred renewed calls for a resolution to the conflict.[4] The Oslo Accords of 1993 and 1995 were the most significant steps toward peace in the region. The seeds for Oslo were planted during the Madrid Peace Conference in 1991. The Madrid talks quickly stalled, in part because representatives of the Palestine Liberation Organization (PLO) were not permitted to participate. As Madrid faltered, a secret delegation of Israelis and Palestinians began to meet in Oslo.[5] Late 1993 saw the signing of the Declaration of Principles on Interim Self-Government Arrangements, known as Oslo I. Oslo I established an interim government, the Palestinian Authority (PA),[6] which made Palestinians a negotiating partner with Israel. This was followed by the Oslo II Agreement of 1995, the Israeli-Palestinian Interim Agreement on the West Bank and Gaza Strip. Oslo II further defined Palestinian self-governance and implemented temporary arrangements on civil and security issues.[7] The agreements were intended to establish incremental steps toward peace and were designed to last no more than five years. The Oslo process was expected to pave the way for negotiations on final status issues, specifically, "Jerusalem, refugees, settlements, security arrangements, borders, relations and cooperation with other neighbors, and other issues of common interest."[8] Oslo installed institutions to facilitate cooperation and build confidence between the parties.[9]

The peace process collapsed and never led to final status negotiations. Without moves toward a permanent peace, the institutions and processes created by Oslo became the de facto norm. For many Palestinians, the Oslo process became much less a means to peace and more so a reorganizing of the occupation, which in turn legitimized Israel's dominance.[10] Frustrations with Oslo and the ongoing occupation led to the Second Intifada in 2000 until 2005. Israel then responded by building a separation wall between Israel and the Western edge of the West Bank [11] severely restricting Palestinian movement.[12] Some Palestinians began to reject transparent cooperation with Israelis on moral grounds to avoid normalizing the occupation. Palestinians working alongside Israelis were now under intense scrutiny from other Palestinians. The anti-normalization movement is widespread, if controversial, among Palestinians.[13]

Oslo has failed to lead to final status negotiations, but its imprint on the structure of the Israeli-Palestinian relationship remains. Annex III, Article 40 outlines detailed water provisions, notably in the West Bank.[14] The cooperative structure includes subsections of shared principles: 1. Israeli commitment, as the occupying power, to supply additional water needs for Palestinians; 2. Palestinian responsibility for allocating and building appropriate infrastructure for water resources; 3. transfer of authority to Palestinians where designated; 4. establishing the structure and functions of the Joint Water Committee (JWC), an enforcement mechanism of the aforementioned functions and responsibilities; and, 5. an outline of water and sewage protection measures to be taken by both parties.[15] Perhaps the most notable features of Oslo II are the explicit recognition of Palestinian water rights in the West Bank and the establishment of a coordinating body to supervise water management, the JWC.[16]

The JWC is designed with an equal number of Israeli and Palestinian delegates who engage in consensual decision making. While it was not authorized to manage daily on-the-ground operations of water and sewage management (those were tasks relegated to either the Israeli Water Authority or Palestinian Water Authority), the JWC would oversee and direct those efforts. At the time of its inception, the JWC was one of many institutions created by Oslo II that became an indicator of the potential for functional cooperation. However, official meetings of the JWC ceased in 2010 and did not resume until 2017.[17]

Oslo II also divided the West Bank into areas A, B, and C, which had implications for water management. Area A is under the control of the PA, which manages both security and infrastructure for the area. The PA has jurisdiction over infrastructure within Area B, but all security arrangements are subject to Israeli approval.[18] Area C — the largest portion of the West Bank — remains under the control of the Civil Administration of the Israel Defense Forces (IDF). As a result, any and all decisions about infrastructure in Areas B and C must be approved not only by the JWC, but also the IDF.



Map 1: B'TSELEM - The Israeli Information Center, and Human Rights in the Occupied Territories. 2013. C for Control- Areas of the West Bank.

Area C is less densely populated, so it is often the ideal location for infrastructure such as wastewater treatment plants. However, such considerations are contingent on IDF military strategy and acceptance. Seeking IDF approval adds another layer of difficulty in implementing wastewater infrastructure and draws out the permitting process.[19]

At the time of the Oslo II agreement, 80 percent of the water pumped from the Mountain Aquifer, which is shared by Israel and the West Bank, was allocated to Israel, and the remaining 20 percent to Palestinians.[20] The Mountain Aquifer mostly lies beneath the West Bank but flows into Israel.[21] The agreement identified the future water needs of Palestinians at an estimated 70 to 80 million cubic meters (MCM) per year. Despite these water allocations, the water provisions of Oslo II were strongly criticized by Palestinian water experts because they designated Israel as the "supplier" of water, while the Palestinians were the "purchasers" of water.[22] This meant that Israel would retain ultimate control of all water sources, while the agreement deferred the occupation to final status negotiations.

2.2 History of the Partnership

The following section outlines the ten-year partnership between the Palestinian Wastewater Engineers Group (PWEG) and the Arava Institute for Environmental Studies (AIES). These organizations' cooperative efforts are examined using five categories: shared purpose, funding, scale, divergence, and the context of the Israeli-Palestinian conflict. These categories illustrate moments of the partnership that either led to the expansion or retraction of projects or general cooperative efforts between the organizations. Understanding the trajectory of the PWEG-AIES partnership through such lenses provides a critical foundation to inform future analysis.

2.2.1 Shared Purpose

The Arava Institute for Environmental Studies (AIES) and Palestinian Wastewater Engineers Group (PWEG) have been engaged together in transboundary water cooperation focused on water and energy infrastructure in the West Bank since 2008. Their initial meeting took place at the World Bank's Red Sea Dead Sea Conveyance conference where both organizations attended as part of separate consulting consortia.[23] Both directors made similar claims for the initial stages of partnership—they wanted to meet "the Other."[24] The partnership began with a single decentralized wastewater (DWW) treatment system in Auja, but grew as the partners began to harness each other's strengths; as an AIES director stated, "we complement each other."[25]

PWEG, an engineering organization, both provided technical expertise and, through trust built over time, access to Palestinian communities in the West Bank. AIES was able to ensure PWEG's projects were situated in the appropriate socio-economic areas and offered policy experience in the region. In many ways, this partnership was built from the relationship between two directors, but has now expanded to include community members on both sides of the conflict, PWEG and AIES staff, external funders, and universities from around the world. To succinctly state their shared purpose, PWEG and AIES work together to provide technical solutions in the West Bank relating mostly to water availability and quality in order to improve livelihoods and expand people-to-people interactions.

Since 2008, PWEG and AIES have installed DWW systems, which ranged from the household to the neighborhood level. Their shared purpose expanded in 2015, when the West Bank began to face greater water scarcity and water allocation challenges due to nearby Israeli settlements. AIES and PWEG implemented DWW treatment systems in Auja, optimized wastewater irrigation, promoted cooperation between Israelis in the Arava Valley and Palestinians in the Jordan Valley, and supplied Palestinian farmers with solar energy. In 2018 the partnership agreed to include a new village, Marj Al-Ghazal, in their cooperative efforts.

2.2.2 Funding

The majority of the funding for the PWEG-AIES partnership fell under the United States Agency for International Development (USAID) Conflict Management and Mitigation (CMM) project entitled "Mitigating Transboundary Wastewater Conflict." Initially, this grant was awarded to AIES as the lead in 2013 with technical assistance from two Palestinian partners, PWEG and the House of Water and Environment (HWE).[26] Under this project, six systems were constructed—four in Palestine and two in Israel. The DWW systems eventually implemented under the USAID grant were first tested at AIES facilities with funding from the Osprey Foundation, allowing the teams to assess and optimize the systems before implementation in rural and disconnected villages.[27] Funding for these small-scale projects continued, led by AIES, under USAID's CMM program for the next 3 years.

In 2016, the AIES-PWEG partnership shifted, and PWEG took the lead on the USAID CMM project. This transition of leadership is significant for PWEG. It became one of the few Palestinian organizations to lead a CMM project in a context where Israeli organizations are the primary drivers.[28] This particular project was entitled "The Green Technologies in Cooperative Date Farming" and, with AIES' cooperation, sought to engage over 520 Israeli and Palestinian date farmers. The project promoted renewable energy, improved water availability through wastewater recycling and groundwater pumping, and created the Jordan-Arava Valley (JAV) Committee, in which a number of Israeli and Palestinian date farmers exchange technical and educational expertise.

PWEG and AIES then experienced an abrupt shift in funding availability after years of relatively reliable funding from USAID. The U.S. Congress passed the Taylor Force Act in March 2018, which makes U.S. economic aid contingent on the PA ending financial support for individuals convicted of terrorism and their families. In the summer of 2018, the Trump Administration cut all funding to the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), and people-to-people projects administered by USAID. The fall 2018 passage of the Anti-Terrorism Clarification Act (ATCA) made U.S. security aid contingent on the ability of the U.S. to have legal jurisdiction over foreign defendents.[29] Given these changes, PWEG and AIES are not renewed for the next funding year under USAID's CMM program and are currently seeking other ways to continue their projects and cooperation.

2.2.3 Scale

To affect large system change, local-level projects must span spatial and institutional scales to achieve broader systemic impact. PWEG and AIES have been focused on scaling up the positive impacts of their investments.The following discusses the changes in scale within the PWEG-AIES partnership, including technology, the relationships of stakeholders, and these relationships' impact on the project.[30]

In the beginning stage of the partnership, AIES and PWEG established two pilot DWW systems in Auja, a small town with a population of 4,500, located northeast of Jericho in the West Bank. The first of these two projects was implemented at the home of Auja's mayor. This opened the door for scalar growth; when residents saw the mayor's embrace of an Israeli-Palestinian cooperation project, coupled with the project's success, (e.g. high crop yields, a decrease in health concerns, increased water availability), a second resident quickly offered to be a beneficiary.

Photo credit: Aleah Holt

While Auja was the pilot location for the project, both PWEG and AIES intended to expand their work to surrounding areas. AIES and PWEG implemented a new joint project in 2014 that included four projects between AIES and HWE. All projects were in the pilot stage and tended to be small, household DWW systems. Household scale is feasible in the West Bank since most of the population is rural and bound by fragmented land, and therefore, centralized wastewater (CWW) systems become difficult and costly to maintain. DWW systems have substantially low energy use, which provides greater scaling out potential. As one PWEG staff member likes to say, their systems "are low cost and low tech."[31] Nonetheless, the 2014 American University Practicum Team found that while the smaller scale projects are more sustainable and effective, many residents requested larger-scale systems.[32]

In the second phase of the partnership, between 2014 and 2016, AIES and PWEG expanded their efforts in the West Bank to support the Auja-Arava Valley Initiative (AAVI) as it was called by the AU Practicum students in their report. This project was meant to address the needs of Palestinian date farmers in Auja. In 2015, some members of the date farming community now had PWEG-AIES DWW treatment systems. DWW systems not only allowed for the reuse of graywater in irrigation, but also offered a safer option for blackwater storage compared to its household predecessor, the cesspit. As summer 2015 concluded, an AIES -PWEG stakeholder analysis revealed the farmer's need for groundwater pumps. This led to the PWEG-AIES partnership reaching out to New York-based organization Build Israel Palestine (BIP) to fund a PV solar energy grid that would be managed by the Auja date farming community. This PV system ideally would feed unused electricity into the main power grid, generating credit with the Israeli Electric Company. This would defray farmers' expenses and serve as an income source to scale up their facilities. The installation of the PV system also indicated a shift in the focus of the partnership to include energy projects.

During September 2016, toward the end of this second phase, and as part of USAID's CMM initiative, AIES and PWEG began a project that aimed at increasing people-to-people interaction between the Arava Valley in Israel and the Auja farming community in Palestine. The JAV Committee was born from this initiative and created a space for Israeli and Palestinian date farmers to share techniques and expertise. Thus began the initial scaling out across the West Bank into Israel.

The third stage of partnership, from 2017 to 2019, extended the scope of the partnership's work in Auja to include Marj Al-Ghazal, another Palestinian village in the Governorate of Jericho. This small village was chosen due to its size, a population of 250 residents, and its primary livelihood focus on date palm agriculture. PWEG and AIES intended to supply Marj Al-Ghazal with comprehensive installation of household-level and neighborhood-level wastewater treatment plants and off-grid solar power generators. Plans were developed to include installing PV systems for groundwater pumping and treatment. Due to recent losses in funding, scaling out these projects beyond the neighborhood level to the village level have stalled.

Due to the aforementioned loss of funding, the CMM project is currently suspended, including any future workshops or JAV Committee meetings. There are ongoing discussions within the partnership regarding movements of scale, but nothing concrete. The partners are proposing developing a small, women-run date syrup manufacturing plant and are beginning to research small-scale desalination technology. PWEG and AIES also have approached Fasayal, a village with an intermediate population size of about 1,500 residents, physically situated between Marj al-Gazal and Auja, to participate as beneficiaries in future projects. While funding has been momentarily stalled, the PWEG-AIES partnership continues to innovate and prepare for growth.

2.2.4 Change and Divergence

Despite the close cooperative efforts between PWEG and AIES, there have been considerable points of change and divergence between the two organizations throughout their partnership. The divergence seen between the two organizations stems from the differences in their individual goals and aspirations.

PWEG staff are very adamant about their role as a technical organization providing aid to their own communities.[33] AIES, on the other hand, focuses on policy.[34] As an organization, AIES is also more focused on peacebuilding than PWEG, which has led to one of the most noticeable points of divergence between the two organizations.

In the initial phases of the project, AIES and PWEG focused on low-cost domestic graywater treatment systems, which brought together engineers and technical actors from both Palestine and Israel. AIES and PWEG made clear in the early years of their partnership that their efforts focused on environmental security and development, and did not refer explicitly to peacebuilding. It was noted in the 2013 report that this focus on development rather than peacebuilding was due to the political ramifications on both sides of the Israeli-Palestinian conflict. Nevertheless, AIES representatives were more willing to discuss peacebuilding cooperation as an element of their strategy to access international development funding. AIES has been successful in strategically highlighting the peacebuilding potential of their projects with PWEG to leverage more funding but has not claimed peacebuilding is a primary goal, merely that it is an unintended benefit.

These early interactions were the beginnings of environmental collaboration, and the 2013 practicum group found that mid-level interaction between technical actors had little environmental peacebuilding impact at either the grassroots or governance level. Due to the limited scope of interaction between Israelis and Palestinians, there were no major impacts on the peacebuilding process.

The year 2016 marks an important change in the relationship between PWEG and AIES. AIES conducted a strategic reassessment of their organizational mission and goals in 2016. They found they had created a large alumni network through their environmental education initiatives, but they had not yet, as an organization, done much to improve relations between Israel and Palestine. This finding led to a shift in their organizational mission to work on projects that might serve as positive examples of Israeli-Palestinian cooperation.[35] AIES believed they could use their status as a non-governmental entity to engage in transboundary projects that contribute to peace. The positive examples, or "wins" as one AIES staffer called them, would then theoretically lay the groundwork for future interstate negotiations, in a process called Track II diplomacy.[36] This is an important divergence in the stated missions of PWEG and AIES, as PWEG is still committed to their organizational mission of protecting the environment and building Palestinian communities.[37] This does not, however, mean that the relationship of AIES and PWEG has been fundamentally changed. In fact, PWEG and AIES staff both remarked how well the two organizations complement one another despite these divergences. [38]

The loss of USAID funding in 2018 led to a decrease in the amount of work PWEG and AIES were able to do together. One PWEG staffer estimated only 7% of PWEG's current projects were in partnership with AIES, which is down from about 10% of their total projects.[39] The partnership has been able to survive despite the loss of its primary funder.

2.2.5 The Israeli-Palestinian Conflict and the Partnership

The conflict is ever-present in Israeli-Palestine, and has inevitably played a role in the PWEG and AIES partnership. The partnership itself is born out of needs created by the conflict, and despite international turmoil, PWEG and AIES have continued to build and expand their partnership. On October 1, 2015, President Mahmoud Abbas announced that Palestine would no longer be bound by the Oslo Accords.[40] Though the announcement was widely considered to be symbolic, it reflected growing disenchantment with the stalled peace process.[41] That same year, PWEG and AIES began scaling up their household graywater treatment systems to community-level systems, continuing to expand their partnership in the face of political unrest.

Between 2016 and 2018, the Trump Administration recognized Jerusalem as Israel's capital and passed the Taylor Force Act, which cut US funding to the PA. These developments have reduced the capacity of the PA to provide for its citizens, which has contributed to instability in Palestine. These policy changes have also limited the ability of Palestinian NGOs to function at full capacity.

Despite mounting tensions and funding shortages, AIES publicly recognized a PWEG staffer with an award of appreciation, the JAV Committee continued to meet until funding was no longer available, and PWEG and AIES continue to plan future projects together. Continued cooperation between PWEG and AIES, despite rising tensions and decreased funding, is indicative of the resilience of both organizations and their commitment to a shared purpose. Their partnership today looks like any two NGOs cooperating on a project, which, when taken out of the context of the Israeli-Palestinian conflict, is fairly normal. When situated within the context of the conflict, however, the PWEG and AIES relationship is representative of how NGOs can contribute to improving livelihoods, building resilience, and peacebuilding in an intractable conflict.

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Photo credit: Aleah Holt

Chapter 3 Conceptual Framework

3.1 Introduction

The following sections outline the theoretical framework used to analyze the immediate outcomes of the partnership's activities and illustrate the study's key findings. This report's framework is divided into five themes: equity, resilience, project and partnership sustainability, gender, and environmental peacebuilding and cooperation. The five themes informed the indicators used to assess the data collected throughout the study. Each theme relied on existing theoretical frameworks established in the literature assessed through a desk-study conducted prior to the rapid appraisal. The next sections discuss the development of the framework themes and the importance of their application to this study.

3.2 Equity

There has been a longstanding resistance toward peace efforts between Israel and Palestine, caused by an asymmetric power relationship. Through the cooperation of AIES and PWEG, it is important to identify whether their partnership is transforming the conflict's asymmetric power dynamics or reproducing them. *Does the AIES and PWEG partnership create power symmetry between participating Palestinian and Israeli date farmers? What different roles do AIES and PWEG play in the partnership, and do those roles enhance equity?* In exploring the equity dimensions of the partnership, we must also conceptualize power. Much has already been written on power asymmetry in the wider conflict, and specifically regarding water resources.[42] However, these analyses are focused on the macro and governmental level, rather than on smaller-scale partnerships like AIES and PWEG.

In determining whether and how the partnership between AIES and PWEG is equitable, we rely on theoretical frameworks developed by Abitbol, Zeitoun, and Nathan. A Foucauldian analysis of power requires examining the relational order. To understand whether relationships are equitable, we must first understand who holds what power in a relationship. As Abitbol outlines, Israel exerts its comparative power through relationships, while Palestinians find power through resistance.[43] Applying the relational order to the partnership between AIES and PWEG requires an examination of relationships at multiple levels. For our analysis, we will seek to understand equity between AIES and PWEG, between the organizations and the project beneficiaries, and between the Israeli and Palestinian members of the JAV Committee. Our indicators for each relational category are important in analyzing the minimum or maximum benefits, resource equity, and ideas emphasized by participants. These indicators assess the fairness among participants and determine if the current process used by the partners contributes to transforming relationships on a smaller scale.

3.2.1 Equity between AIES and PWEG

Zeitoun argues that Israel holds hydro-hegemony through a combination of hard power (e.g. building the wall and settlements; damaging water infrastructure), bargaining power (e.g. the concentration of Israeli power in the Joint Water Committee), and ideational power (e.g. having the power to shape the discourse on Palestinian water development by focusing on "needs, not rights" and desalination proposals). Bargaining and ideational power are sometimes combined under the more general concept of "soft power."[44] Neither AIES nor PWEG dominate the other through hard power, as the partnership is voluntary and not inherently conflictual. However, as there are power dynamics in every relationship, we seek to understand the equity dynamics of the partnership through an analytical focus on soft power. To assess the soft power dynamics of the partnership, our indicators are empowerment and collaboration. We analyze empowerment and collaboration based on who has access to funding, who leads on projects, who has the ability to access resources outside of the partnership, and whose organizational capacity and mission are enhanced.

3.2.2 Equity between the organizations and decentralized project beneficiaries

There are many critiques of development organizations. Some projects may not actually improve the livelihoods of the people they are supposed to help. Organizations that do not listen to the communities they work in run the risk of overlooking important issues or opportunities. Development can also reinforce existing social inequities by not focusing on the most vulnerable. With this in mind, we examine three aspects of the relationship between the AIES/PWEG partnership and recipients of the DWW and PV systems. The indicators for this section explore who specifically experience the tangible benefits of the projects, whether project participants have avenues to provide feedback to the organizations, and the specific criteria for selecting decentralized system beneficiaries.

3.2.3 Equity between Israeli and Palestinian members of the JAV Committee

In identifying equity between participants, we also look to the theoretical framework of Nathan. We specifically examine the differences in dialogues between Palestinian and Israeli beneficiaries. The perceived equity between beneficiaries can be seen through the discourses of Israeli and Palestinian JAV members and each member's different emphasis on insecurities. Statements on insecurity and inequity allow us to understand Israeli and Palestinian perceptions toward securitization and external threats such as water shortages. By acknowledging the rhetoric used by JAV participants toward the imbalance of power between Israelis and Palestinians, we can then conclude where work is needed to address power asymmetry and perceived threats.[45] Furthermore, the emphasis by JAV informants on either benefits or challenges and their causes can help identify smaller inequitable characteristics among the larger political context. To assess the equity of JAV participants, our indicators include moving beyond relationships defined by the conflict, the perception and acknowledgment of privilege, and the distribution of resources between Israeli and Palestinian JAV members. We analyze these indicators through collaborative engagement and information sharing on the JAV.

Photo credit: Aleah Holt

3.3 Resilience

Resilience as a concept deals directly with the day-to-day lives of participants in AIES and PWEG projects, focusing primarily on the livelihoods of the Palestinian residents and farmers in Marj Al-Ghazal and Auja, and the Israeli farmers of the Arava Valley. First, we must deconstruct the term *livelihoods*. Originally coined by Robert Chambers, *livelihoods* can be defined as the capabilities, assets—including both material and social resources—and activities required for a means of living. A livelihood is sustainable when it can cope with stresses and shocks and maintain or enhance its capabilities and assets, both now and in the future, while not undermining the natural resource base.[46] These capabilities and assets can be divided into five types of capital (see Figure 1).

Figure 1: Categories of Livelihoods Capital [47]

Human capital:	Skills, knowledge, health and ability to work
Social capital:	Social resources, including informal networks, membership of formalized groups and relationships of trust that facilitate co-operation and economic opportunities
Natural capital:	Natural resources such as land, soil, water, forests and fisheries
Physical capital:	Basic infrastructure, such as roads, water & sanitation, schools, ICT; and producer goods, including tools, livestock and equipment
Financial capital:	Financial resources including savings, credit, and income from employment, trade and remittances

The residents' livelihoods in Marj Al-Ghazal, Auja, and the Arava Valley are intimately linked with these assets, and are especially fraught with the challenges of natural capital in terms of the region's water-food-energy nexus. Water availability and variability influences all economic activities, and growing water scarcity undermines food and energy security.[48] Even under scenarios of improved water efficiency, the region faces a projected 40-50 percent increase in water scarcity by 2050. As water constraints become binding and demands for food and energy increases, the Middle East will continue to experience the consequences of unmanaged trade-offs between these sectors. Groundwater depletion due to over-pumping fueled by subsidized energy, reliance on cheap energy sources for desalination, and over-extraction of surface waters to sustain irrigation for food self-sufficiency, are all examples of these interactions that, if left unmanaged, can strain social, economic, and environmental systems.[49]

In the face of multiplied challenges linked to the water-food-energy nexus, and exacerbated by climate change, a study of resilience is crucial.[50] We define resilience as the capacity of social-ecological systems to recover from shocks and stresses, retain key functions, and learn from past stressors to strengthen future response.[51] For the purpose of our research, these social-ecological systems refer to the farming communities of Marj Al-Ghazal, Auja, and the Arava Valley. These communities' livelihoods and identities depend on their ability to farm, as highlighted by one Palestinian farmer who said, "farming is in my blood, I will never stop farming."[52] It is here we seek to understand vulnerabilities in livelihoods due to access to natural resources, local health issues, social phenomena within communities, and challenges stemming from the Israeli-Palestinian conflict.[53] The RAND Community Resilience Toolkit notes that "resilient communities are healthy communities; places where people are physically and mentally well, have access to basic survival needs (food, shelter, water), are self-sufficient, and remain socially connected."[54]

While looking at the current state of these communities, our analysis will use two indicators—livelihood and environmental resilience– to analyze the effectiveness of the PWEG-AIES partnership. These indicators serve as guideposts throughout our data collection and analysis: 1. livelihood resilience which embraces human, social, physical, and financial capital (Fig. 1), and 2. environmental resilience, which expands natural capital (Fig. 1) to apprehend the precarity of this region, specifically how climate change impacts the water-food-energy nexus. We will highlight both footholds of resilience and the roots of insecurity. Later, in our analysis and recommendation chapters, these parallel indicators will provide an effective framework for assessing the resilience of farmers and residents across the region.


Photo credit: Aleah Holt

Finally, as our research uncovers these dynamics of resilience, we will draw upon Moore, Riddell, and Vocisano's understanding of scale.[55] We will ask, At what scale does the PWEG and AIES partnership support resilient livelihoods? And, what sort of adaptations can this partnership undertake to create new opportunities for resilience? We work to ascertain at what scale resilience is currently situated: at the household level? The neighborhood (4-5 homes)? The village or kibbutz? After presenting data found through our indicators, this analysis of scale will highlight the scalar level at which the PWEG-AIES partnership is most effective.

3.4 Project and Partnership Sustainability

The sustainability paradigm emerged in the second half of the 20th century because of the growing recognition of the detrimental environmental and human health impacts associated with industrial growth in the Global North and economic inequalities in the Global South.[56] Although the term has been subject to competing interpretations and numerous approaches, it is still a key model within human environmental interactions, social-ecological systems, and environmental literature.[57] Sustainability acts as a key influencer of the peacebuilding potential of the PWEG and AIES collaborative project. The benefits of the project are intended to be long-term and can have significant impacts on the participants. Carvalho et. al expresses that in order to be sustainable "it is important for an organization to produce a long lasting external impact whose value is recognized by society."[58] If both PWEG and AIES can sustain their implemented work, it can serve as evidence for both funders and future projects focused on peacebuilding. For the purposes of exploring this theme, we define sustainability as measuring whether the expected benefits of a project, as well as stakeholder relationships, can persist well after the project has officially ended.[59] We will analyze both "project sustainability" and "partnership sustainability" to ensure we are using a comprehensive approach. Through these sub-themes we are able to fully separate aspects of the project and analyze them independently. Although ideally they should complement each other, and both need to be in good status to deem the complete project sustainable, limiting our framework to these two themes will aid us in focusing on specific indicators and recommendations.

Understanding sustainability helps determine whether these two organizations have been able to establish a durable foundation and maintain the intended project outcomes. We seek to answer questions such as : *How well have PWEG and AIES achieved their individual and collaborative goals? And, have the beneficiaries of the systems experienced any benefits, and at what scale?* Through this framework we want to identify challenges and recommendations, acknowledge successes, and ultimately gauge whether the AIES and PWEG collaborative project is sustainable or not.

Project Sustainability

We seek to explore the project's sustainability through three indicators: technical, capacity-related, and economic.

The technical indicator's main focus is on monitoring and evaluation of the wastewater systems, which includes adaptability of the systems and user satisfaction. Both monitoring and evaluation use data to inform decision-making and are intended to generate lessons learned.[60] Monitoring and evaluation systems are set up to give feedback on particular programs to ensure effectiveness and learn what parts should be modified, specifying deadlines for certain objectives.[61] The International Institute for Environment and Development's training manual underlines the importance of incorporating monitoring and evaluation within project structure.[62] This manual emphasizes key points, including community engagement in data collection and analysis in order to solidify purpose in the data collection process. It highlights simplifying the data collection process by only collecting data that is necessary for project tracking and feedback. Data on training and knowledge sharing among all stakeholders are critical for measuring sustainability. The project cannot be considered truly sustainable without a dynamic project framework or the ability to incorporate participants' needs through focus groups, surveys, and reliable data on stakeholder feedback. Many development projects of this nature fail due to their inability to continuously assess project goals and mishaps. This introduces the principle of adaptive management, an intentional approach to making decisions and adjustments in response to new information and changes in context.[63] Adaptive management focuses on changing the path being used rather than changing goals. With this approach, the ability to improve user satisfaction, and therefore sustainability, is improved.

Photo credit: Aleah Holt

Beyond technical aspects, capacity building can also indicate the success or failure of a project. O'Rafferty et al., writing about mainstreaming sustainability, defines capacity building as "an iterative process that incorporates the building of frameworks, work cultures, policies, processes and systems enabling an organization or individual to improve performance to achieve successful outcomes."[64] Capacity building also incorporates scale at three fundamental levels: individual, organizational, and institutional.[65] Essentially, capacity building asks, "Do you have the means to expand and maintain the project?" The main indicator of capacity is the ability to scale up the project, which encompasses all levels (individual, organizational, environmental). This includes having the availability of resources, and being able to maintain the project if any shock should occur. The initial scope and design of the technology were at a household level. Over the years, AIES and PWEG implemented scaled-up systems for villages and additional technologies such as PV systems. Besides financial support, other contributions include resource support from all stakeholders, such as third party organizations who handle maintenance of systems, local municipalities, and even approval from both water authorities. Capacity building ensures that the project does not remain stagnant and can progress at the correct pace.

Lastly, a critical indicator of project sustainability is financial support. Both AIES and PWEG are highly dependent on external funders for all projects, including the water-food-energy nexus project of which is the topic of our study. A sustainable project suggests that the benefits of projects continue after donor funding ceases.[66] Discussing new NGO funding strategies, Hunter suggests that "a major mistake that many NGOs make is relying on limited source(s) of income for their survival. It is now clear that NGOs must adapt to donor trends and not rely on international funding, membership, or conference donations, while expanding potential funding."[67] On an institutional level, previous reports have already identified concerns with both AIES and PWEG having funding dependency on USAID. On a beneficiary level, buy-in is critical in sustaining the systems and therefore the project. As the project moves into its eighth year with intended scale-up plans, financial support is critical from all stakeholders. Through fieldwork we want to explore financial successes, constraints, and opportunities for the future.

Partnership Sustainability

In order to assess the sustainability of the partnership between PWEG and AIES, five indicators are deployed: the success rate of projects, funding, organizational capacity, leadership structure, and knowledge transfer and trust building. These indicators aim to define aspects of cooperation and the likelihood of sustained engagement. While each indicator sheds light on the overall relationship between the two organizations, the sustainability literature stresses the role of knowledge sharing and trust building.

The two paths to decipher the sustainability of the partnership are through the organizations' physical structure and characteristics *and* the ideology and purpose behind cooperation. The former includes success rate,organizational capacity, and funding. These three indicators grant insight on the functionality and efficiency of the respective organizations and the success of their partnership. The level of success at which the partnership project operates provides legitimacy to the cooperation and the caliber of work created. Project success rate can act as a gauge for organizational capacity, but it is not truly indicative of the full meaning of capacity. Capacity incorporates not only the level at which projects are functioning, but also the organization's ability to disseminate information, provide support, and build governance at the local level. A partnership that increases capacity for all these organizational functions, for both of its partners, represents a sustainable model. Additionally, the role of funding can act as both a means for cooperation and for competition.[68] In the PWEG and AIES partnership, the availability of grants for transboundary work in this region creates interdependence between the two organizations. However, this should not be taken for granted, as the funding environment is always changing and future grant structures could create competition between the two partners.

Photo credit: Aleah Holt

The second way to deconstruct the sustainability of the partnership is through the leadership structure, knowledge transfer, and trust building. The way NGOs organize their leadership, independently and cohesively, lends insight to the effectiveness of communication and cooperation between the two partner organizations. For example, if all coordination between the two organizations is enacted by a few managerial staff, there may be an absence of deeper-level sustained coordination. Ruth Alminas's thesis (2012) on inter-NGO collaboration in post-conflict environments found that open communication, trust, and mutual understanding are key requirements for successful collaboration.[69] In conjunction with communication between the organizations, knowledge sharing contributes to collaboration by producing mutual understanding and "a feeling of a shared region" between the partners.[70] Trust acts as the cementing factor between partners to help facilitate an equitable exchange of knowledge and ideas. Partnerships that promote trust between organizations increase the likelihood for future collaboration and a sustainable relationship.

3.5 Gender

Given the centrality of a gender perspective not only in conflict situations, but also in post-conflict and peacebuilding contexts, it is essential that any initiative seeking a sustainable outcome should examine its gendered nuances. A basic gender perspective is focused on the sociocultural differences between men and women in terms of their daily functions as well as immediate and long-term needs. Understanding the power relations between men and women in a given conflict context is essential. An International Center for Research on Women report considered the role of women in peacebuilding and development efforts, stating "the power imbalance that defines gender relations influences women's access to and control over resources, their visibility and participation in social and political affairs, and their ability to realize their fundamental human rights. These are all factors that contribute to women's agency and empowerment."[71] A comprehensive gender-sensitive assessment is aware of the unequal distribution of social functions and ensures both women's and men's experiences are an integral part of policy or project design and implementation. As managers of household affairs, Palestinian women are leading efforts for better and more reliable access to utilities in their communities.[72] Featuring a space for women's experiences is imperative to ensuring women's needs are not only properly accounted for within a project but also ensuring the overall success and longevity of said project or cooperative effort.

Implementing a gender-sensitive assessment may be difficult considering cultural norms within a society that tend to exclude women from influential positions within the political or social space. In Palestine specifically, although not exclusively, women tend to experience low political participation and representation, and are subject to patriarchal relations in which men dominate in public spheres.[73] Conversely, Palestinian women have had a significant role in peace and community-building efforts that have gone widely unacknowledged within the context of the conflict. A 2016 report by the Inclusive Peace and Transition Initiative of United Nations Women studied 40 peace and transition cases between 1989 and 2014 and found that when women substantially contributed to peace processes or cooperative efforts, it was more likely that an agreement was reached and implemented.[74] Understanding the integral role women play in both large- and small-scale peacebuilding efforts is key to assessing any form of cooperative effort or development project.

The gender analysis throughout this report will draw on the primary themes outlined above, assessing primary benefits to women regarding the wastewater treatment systems as well as women's roles in more cooperative efforts such as membership on the JAV committee. The report will also examine any female-specific outreach strategies from both PWEG and AIES in addition to gender balance within the organizations themselves. It should be noted that for the purposes of the gender analysis in this report, there will be a focus on the heteronormative binary roles due to contextual constraints. However, a truly comprehensive gender analysis would include all gender perspectives, beyond cisgender heterosexual men and women.

Photo credit: Aleah Holt

3.6 Environmental Peacebuilding and Cooperation

Water remains a highly contentious issue within the Israeli-Palestinian conflict. Cooperation between Israelis and Palestinians over water, and specifically wastewater management could, theoretically, be a form of peacebuilding. We seek to ascertain the extent to which AIES and PWEG's cooperation fosters peacebuilding, if at all.

Peace and conflict studies have moved from a conceptualization of peace that is merely a state without violence to the recognition of structural violence. Galtung understands positive peace as not only the lack of physical violence, but also a society that upholds justice and has functioning, nonviolent conflict resolution mechanisms. This understanding of peace requires justice, of which equity is a key component.[75] Peacebuilding efforts that maintain asymmetrical power dynamics fail to instill equity, thereby maintaining structurally violent systems.[76] Our definition of peacebuilding is thus *not* the dominant neoliberal peacebuilding agenda which "favors situational short-term economic growth solutions over long-term environmental and resource availability concerns."[77] We draw from Boutros Boutros-Ghali's concept of peacebuilding in *An Agenda for Peace* (1992):

> Peacebuilding involves a range of measures targeted to reduce the risk of lapsing or relapsing into conflict by strengthening national capacities at all levels for conflict management, and to lay the foundations for sustainable peace and development. Peacebuilding strategies must be coherent and tailored to specific needs of the country concerned, based on national ownership, and should comprise a carefully prioritized, sequenced, and therefore relatively narrow set of activities aimed at achieving the above objectives.

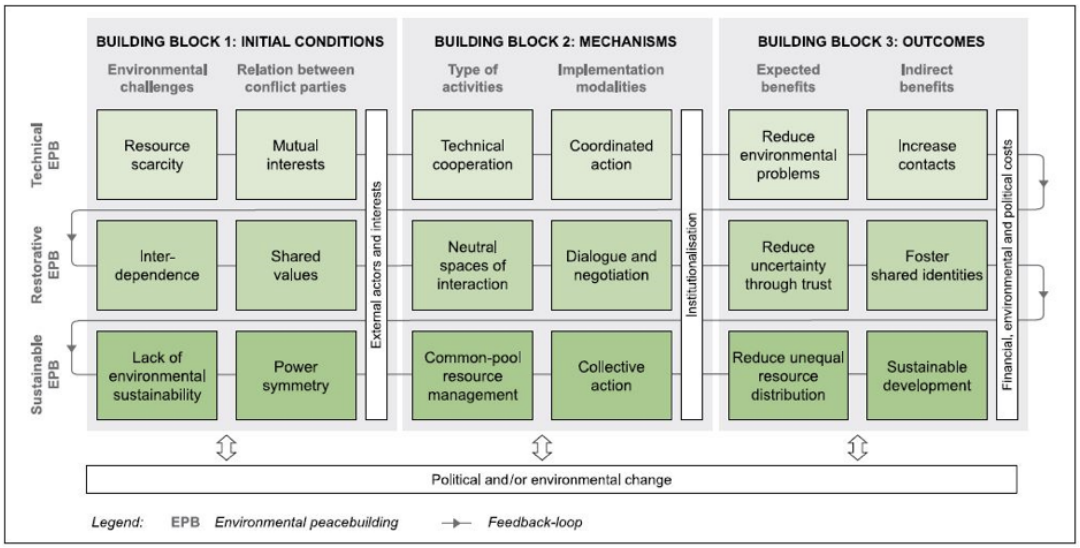
The key themes to draw from this definition are "strengthening national capacities at all levels" and peacebuilding strategies "based on national ownership."[78]

Initially termed environmental peacemaking by Conca and Dabelko,[79] environmental peacebuilding is an emerging field. Environmental peacebuilding, as a concept, purports that the natural environment and resources offer opportunities for cooperation and peace. Three main justifications support the theory that environmental cooperation can foster peace. The first is that nature knows no boundaries.[80] This makes it almost impossible for countries to address environmental concerns unilaterally. In fact, it creates an incentive and an opportunity to work together across human-made borders. Second, the technical complexities involved in collecting and interpreting environmental data create the possibility for sharing knowledge and technical expertise. Third, "the deep interweaving of environment and culture, may make it possible to soften exclusionary identities by creating a common sense of place and purpose."[81]

Dresse et al. makes a distinction between three forms of environmental peacebuilding: technical, restorative, and sustainable (see Figure 2). Technical environmental peacebuilding focuses specifically on knowledge sharing, while restorative environmental peacebuilding seeks to create shared identities among the conflict actors.[82] Sustainable environmental peacebuilding focuses on addressing power asymmetries to create true partnerships. The authors find that sustainable environmental peacebuilding is the most durable.[83] While most projects will not be clearly delineated into these three categories, they help to understand the different inputs and potential outcomes of a project. In particular, we focus on the building blocks for sustainable environmental peacebuilding, specifically "power symmetry" and "reducing unequal resource distribution."

Symbol: Peace Dove

Figure 2 Dresse et al.'s Forms of Environmental Peacebuilding [84]



Dissemination of peacebuilding

We will also seek to understand the relationship between the projects and governmental officials and policies. In many ways, the partnership is a response to permitting issues, and grapples with changes in funding policy as far away as the United States. There is no question that the conflict and policies related to it affect the partnership. What has yet to be understood is the degree to which the narrative of cooperation in these grassroots projects disseminates to entities like the PWA and IWA.What impact, if any, do the narratives of environmental sustainability, cooperation, and creating Palestinian self-sufficiency have on political decision-makers?

Photo credit: Nathan Erwin, All

Endnotes

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Chapter 4 Methodology


Photo credit: Nathan Erwin

4.1 Methods

To gauge the benefits to each stakeholder and the extent of environmental peacebuilding that the AIES and PWEG partnership has achieved, the practicum team sought to answer primary research questions supplemented by specific sub-objectives to inform our study of environmental peacebuilding and the cooperation, resilience, sustainability, equity, and gender dimensions of water-food-energy nexus projects:

What are the immediate tangible and intangible benefits from the PWEG and AIES partnership for all participant stakeholders?

- Why do the stakeholders choose to participate and work together with "the Other" across the conflict divide?
- What expectations do they bring, of themselves and the organizations involved?
- What barriers do they experience to realizing the benefits of cooperation?
- What do they hope to gain from participating in this initiative, in terms of environment, cooperation, development, and peacebuilding?

Our team first conducted secondary research during a two-month long desk study based on literature reviews pertaining to the Israeli-Palestinian conflict, environmental peacebuilding, water-food-energy nexus, and gender and peacebuilding. In addition to reviewing the available history of the PWEG and AIES partnership, this first phase of desk study allowed us to gain a background on conflict contexts, relevant conflicts, and distinguishing sources of tensions in Israel and Palestine. Our research then included a weekend-long workshop for the team in Washington, D.C., to devise a research framework. It comprised five central themes to guide our data collection and analysis. The themes include equity, sustainability, resilience, gender, and environmental peacebuilding. For each theme, we developed indicators to analyze trends and benefits and establish interview questions for the fieldwork portion of our study.

The next phase of our research was a two-week rapid appraisal in the field from June 30, 2019 through July 12, 2019 in Israel and the West Bank. The rapid appraisal consisted of 18 interview sessions with 33 key informants. Interview participants included Israeli and Palestinian farmers, AIES and PWEG project beneficiaries, and representatives from PWEG, AIES, PWA, IWA, and USAID. Interview sessions were conducted in the Jordan Valley, Arava Valley, Ramallah, Jerusalem and Tel Aviv.

Our fieldwork objectives consisted of understanding interactions between organizations, identities, values, and realms of communication and coordination.

For our data collection methodology, we conducted semi-structured interviews beginning with open-ended questions, which allowed participants to respond freely with answers they felt appropriate. Follow-up questions were adapted to the participants' initial response to gain more detailed or specific information, while keeping in mind the data objectives. Key data objectives were tailored specifically for each individual stakeholder to ensure the collection of adequate information to answer our primary research objectives and inform our benefits analysis. After each interview our research team would collectively debrief on key findings and observations. Sample questions and interview schemes can be found in the appendix section of the report.

Interviews were conducted in a variety of locations, including the offices of partner organizations, boardrooms of government agencies, and the homes, farms, and orchards of project beneficiaries. Each interview was strategically administered with two team members leading the primary questions, two follow-up interviewers who provided supporting questions, and two designated note-takers who transcribed responses. One team member was also designated as an interview director. This role required the individual to orchestrate the sequencing of follow-up questions by either intercepting notes or reading hand signals from team members. The interview director additionally assisted the interview leads in keeping track of topics that steered the interview. For six of the interview sessions an interpreter was used with non-English speaking Palestinian informants. The interpreters included a practicum team member fluent in Arabic, a practicum advisor fluent in Hebrew, and two PWEG representatives fluent in both Arabic and English. Due to the use of interpreters who were also participants in our research, we recognize the bias presented by not using a third-party interpreter. For this reason, and to limit language errors, multiple interpreters were used for each session. Due to their knowledge of the regional political context, we entrusted representatives from both AIES and PWEG to act as gatekeepers for coordinating these specific interview sessions.

4.2 Discourse Analysis

Neither of the two organizations explicitly state the objective of peacebuilding in their project proposals. Nevertheless, their work is an example of environmental cooperation in a conflict context, which environmental peacebuilding theory seeks to explore. Therefore, we aim to analyze the project's impact on peacebuilding in the region. We employ discourse analysis as a tool to deconstruct the attitudes toward peace and if, and to what extent, this project fosters that peace.

A discourse analysis provides a better understanding of stakeholders' narratives, which include identities, attitudes, perspectives, story-telling, and human experiences. During the interview process, we focused on the rhetoric, inflection, and mood of the interviewees to better understand the constructed narratives. This analysis focused on how interviewees described project benefits and in what context they situate those benefits. While this helped us ascertain the motivations, fears, and hopes of the project beneficiaries, it is heavily dependent on qualitative data, which can be less commanding in academia. We categorized our data into five major themes through the deconstruction of interview discourse. These themes — equity, resilience, sustainability,gender, and environmental peacebuilding — enable us to determine the degree of impact from the tangible and intangible benefits and consequences of this partnership.

4.3 Research Limitations

The limitations encountered during the two-week rapid appraisal primarily included time constraints and sample size. Additionally, several challenges occurred in the field that either restrained access to all desired informants or created a disruptive environment during the interview process. Examples include cell phones ringing, animals playing, or the serving of drinks and food at times impaired rigorous data collection.

Lastly, during our interviews, our team needed to be aware of the political challenges and characteristics of vulnerability among participants. We were careful to not overstep conflict or gender sensitivity, even as we encouraged local voices and viewpoints. In particular, we tried to engage in multiple interviews and side conversations with female participants while remaining sensitive to cultural norms and household structures.

This qualitative methodology is used to interpret narratives to convey the meaning of participant responses, or lack thereof, pertaining to the projects studied. We organized the data into a matrix of tangible and intangible benefits to be analyzed using our theoretical framework themes. Furthermore, a narrative analysis was used to identify key findings that stemmed from our field research and the political, historical, and social context of the region. The rest of the report demonstrates the benefits analysis by theme, the main key findings, and recommendations.

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Chapter 5 Findings and Analysis

5.1 Introduction

To adequately assess the immediate benefits of the PWEG and AIES partnership, projects were divided into two categories for a benefits analysis: the decentralized systems and the JAV Committee. These categories were each split further between tangible and intangible benefits. The JAV Committee category was also divided between the Palestinian and Israeli participants, since the benefits to each diverged significantly, particularly in terms of their intangible benefits and how consequential the benefits are. These categories are presented in the matrix below (see Figure 3), and subsequently analyzed in terms of our theoretical framework. The matrix also presents a comparison of key characteristics of each benefit, classifying the extent, impact, and significance to the beneficiaries of each.

The extent of each benefit indicates the social level or levels at which the benefit occurs, whether on the individual, household, community, or regional levels, as well as benefits for the PWEG and AIES partnership. This also illustrates benefits that may present opportunities for scaling up to affect other levels. Next, the impact characteristic includes whether the benefit is immediately felt or has a delayed impact, as well as whether it is a direct or indirect benefit of the partnership activity. Third, the significance characteristic for each benefit categorizes it in terms of how frequently informants reported this benefit and how much emphasis they placed on it.

Identifying each type of benefit and the specific outcomes from the different activities of the PWEG and AIES partnership creates a comprehensive picture of the partnership's accomplishments for their beneficiaries. Characterizing the extent, impact, and significance of the benefits provides further detail on the nature of each one and their perception by our informants. Both the technical aspects of the partnership, through implementing decentralized wastewater and PV systems, and the social dimensions of the JAV Committee have provided tangible and intangible benefits to the participants and the partnership itself. The analysis of these benefits according to our theoretical framework is presented in the following section.

Figure 3 : Tangible and Intangible Benefits Matrix

DECENTRALIZED SYSTEMS Tangible Benefits	Extent	Impact	Significance
Water Quantity and Quality	household	immediate, direct	high
• Increased drinking water supply	household	immediate, direct	moderate
• Irrigation for garden crops	household	immediate, direct	high
• Diversification of crops	household	immediate, direct	moderate
• Increased cash crop yield	household	immediate, direct	moderate
Health and Safety	household, community	immediate, direct	high
• Groundwater contamination	community	delayed, direct	high
• Disease risk	household, community	delayed, direct	high
• Children's safety	community	immediate, direct	moderate
Household Sanitation and Aesthetics	household	immediate, direct	high
• Pest reduction	household	immediate, direct	moderate
• Greening from gardens	household	immediate, direct	low
Irrigation Pumping from PV	household, community	immediate, direct	moderate
Financial Savings	household	immediate, direct	high
• Cost of septic pumping	household	immediate, direct	high
• Electricity offsets from PV system	household	immediate, direct	moderate
High Operational Rate	household, partnership	delayed, indirect	high

DECENTRALIZED SYSTEMS Intangible Benefits	Extent	Impact	Significance
Autonomy and Independence	household	immediate, indirect	moderate
• Reduced reliance on electric grid for irrigation pumping	community	immediate, direct	high
• Reduced burden of irrigation and septic pumping costs	household, community	immediate, indirect	high
• Reduced reliance on government utility provision	household, community	immediate, indirect	moderate
Social Relations	household, community	immediate and delayed, indirect	moderate
• Reduced stress on family from septic system disadvantages	household	immediate, direct	moderate
• Improved gender relations through tangible benefits	household	immediate, indirect	moderate
• Ability to gift garden produce to neighbors	community	delayed, direct	moderate
Time Savings on Septic Pumping	household	immediate, direct	low

JAV COMMITTEE Palestinian Participants	Extent	Impact	Significance
Tangible Benefits	individual to regional	immediate, direct	high
• Cooperation on pest control	individual to regional	immediate, direct	high
• Exchange of farming techniques	individual	immediate, direct	low
Intangible Benefits	individual, community	immediate and delayed, direct and indirect	moderate
• Engagement of women	individual, community	immediate, direct	high
• Empowerment of women	individual, community	delayed, direct	high
• Exchange of ideas	individual, community	immediate, direct	moderate
• Gaining knowledge of opposite group	individual	immediate, direct	moderate
• Meaningful interactions in depoliticized environment	individual	immediate, direct	moderate
• Relationship building across conflict divide	individual	delayed, indirect	moderate

JAV COMMITTEE Israeli Participants	Extent	Impact	Significance
Tangible Benefits	individual to regional	immediate and delayed, direct	low
• Cooperation on pest control	individual to regional	immediate, direct	low
• Exchange of farming techniques	individual, community	immediate, direct	low
• Saved time and cost from new techniques	individual	delayed, direct	moderate
Intangible Benefits	individual	immediate and delayed, direct and indirect	moderate
• Gaining knowledge of opposite group	individual	immediate, direct	high
• Meaningful interactions in depoliticized environment	individual	immediate, direct	moderate
• Relationship building across conflict divide	individual	delayed, indirect	moderate
• Appreciation of relative advantages	individual	immediate, indirect	moderate
• Recognition of sociopolitical privilege	individual	delayed, indirect	low

5.2 Key Findings

5.2.1 Equity

Equity between AIES and PWEG

Where there is vast power asymmetry between Israelis and Palestinians, a transboundary partnership can only function if it is equitable. The partnership between PWEG and AIES is a strong representation of two organizations that have partnered equitably to achieve a common goal. Their work does not replicate the asymmetrical dynamic demonstrated between Israel and Palestine, but rather transforms the dynamic through collaboration and empowerment. The tangible benefits created by PWEG and AIES include strong communication by the institutions, information sharing, and increased engagement by staff members.[85]

That said, a limit to the partnership is the physical border that restricts PWEG employees from freely meeting with AIES employees. The physical border proceedings have caused difficulties with time and distance and contributed to meeting delays and rescheduling.[86] Although the border can be a setback, both partners have found additional ways to work together in creating solutions to handle such complications. An interviewee said, "it's logistically difficult to meet in person, but we do meet often."[87] Communication occurs not only in person, but also through phone conversations, messages, and emails.

The organizations, however, do not spend equivalent amounts of time on the partnership. The partnership with AIES only constitutes approximately 7-10 percent of PWEG's overall work. If the partnership were to end, PWEG would still have many other projects to work on, and it would not affect its mission, as PWEG's mission is focused on building Palestinian resilience. In contrast, the partnership with PWEG makes up around 30 percent of the Center for Transboundary Water Management's work. The Center for Transboundary Water Management is only one department within AIES, but it is notable that the partnership plays such a key role. As the mission of AIES is focused specifically on transboundary environmental cooperation, loss of the partnership would impact its work more significantly. However, both organizations have other relationships and funding sources that would allow them to continue their work. In this way, both partners can consciously choose to continue in the partnership, rather than feeling beholden to one another for funding or mission. This ability to walk away directly counters the asymmetry of the conflict and enhances equity between organizations.

In addition to supporting the equitable participation of PWEG, both organizations have workplaces that allow female employees to thrive. Female staff have public speaking opportunities and actively participated as informants during data collection. At both PWEG and AIES, women are represented in leadership roles across multiple aspects of the organizations. Women work as accountants, directors, managers, project planners, recruiters, and part-time employees. One interviewee even jokingly stated, "we are trying to get more men involved."[88]

Equity between project beneficiaries (wastewater treatment and PV systems)

Decentralized wastewater and PV systems allow for Palestinians to become less reliant on the Israeli-controlled electrical and water grids. Palestinian farmers are able to benefit by increasing their irrigation, soil quality, and overall yields. Palestinian access to resources still remains dependent on Israel, yet there is an increase of equity that is created by DWW and PV systems provided through the partnership. An interviewee stated, "the majority of society benefits from the PV because it is clean energy and more reliable energy. The PV system is benefiting 200 farmers, which decreases the cost of electricity, leaves more funds for fertilizer and labor, and produces more, better quality crops."[89] As more Palestinians now have access to off-grid options, this establishes greater power over their land, money, and resources. There are still wider factors on a governmental level that remain to create inequity among participants, but the benefits provided by the partnership help to mitigate them. Recipients of wastewater systems stated that they contacted PWEG when there were issues with their systems, but otherwise there was no formal feedback mechanism.

It is unclear if beneficiaries felt that a formal feedback mechanism was necessary. Interviewees indicated that they felt comfortable with the expertise and assistance provided by PWEG. PWEG also highlighted that it promotes a close relationship with project beneficiaries. One PWEG staffer said "we treat them like family," specifically mentioning how they hosted an iftar dinner for over 70 project beneficiaries.[90]

The partnership seeks to use equitable and transparent criteria in selecting project beneficiaries. The selection process is thorough and lasts as long as eight months. PWEG advertises the opportunity to apply at schools, mosques, community centers, stores, and other public areas. They also have a public presentation at the municipal building. Once a person applies, a selection panel reviews applications. Criteria include the number of total beneficiaries of a system, how much land a farmer has, enthusiasm for the project (indicating sustainability and a willingness to maintain the system), and existing water resources. System recipients must have financial need and the overall goal is to make the biggest impact for the people who need it the most. Having more land is ideal, but benefiting a large number of people through the systems is more important than the amount of land an applicant has.[91] In both Auja and Marj Al-Ghazal, local leaders received systems first to inspire others to join. While the local leaders may not have needed the systems as much as others, they were crucial early adopters and encouraged recruitment.[92]

Photo credit: Aleah Holt

Equity between members of the JAV Committee

The JAV Committee allows for Israeli and Palestinian farmers to meet away from political circumstances and engage in valuable discussions. The benefits of these interactions create an equitable platform for both Israelis and Palestinians that is otherwise often overshadowed by politics. It expands the political identity of both counterparts and creates a humanity that further portrays Palestinians and Israelis positively as neighbors.[93]

It is common for Palestinian and Israeli farmers to have a relationship as neighbors in the West Bank.[94] Sharing knowledge, along with resource management and achieving environmental sustainability, is fundamental for Palestinian equity. The sharing of knowledge allows for Palestinians who are at a systemic disadvantage to learn from their JAV Committee counterparts and integrate strategies. There are, however, inequitable power dynamics between "the helper" and "the helped." The minimal tangible benefits for Israelis have made recruitment to the JAV Committee more difficult. The Committee relies on participation from Israelis who are open to cooperation and have a shared farming identity. Palestinian participants gain tangible (farming techniques) and intangible (the opportunity to interact with Israelis in a less charged context) benefits from the relationship, but they still confront inequities. They rely on the Israelis to share useful information. Palestinians must also confront the expectation that others think they are less skilled in agriculture, rather than disadvantaged by their circumstances. When asked what Israelis may have gained from participation, one Palestinian farmer stated "they learned that we are good farmers."[95] Israelis on the JAV Committee do not have to prove themselves; their skills are assumed, even though they receive much more governmental support.

Israeli participants were able to gain new farming information from Palestinian farmers, but to a lesser extent. One interviewee said he learned techniques from Palestinian farmers "that can save a lot of time and money." He continued, "from every meeting I learn something more. It helps me, some answers I don't know, and then I go check it out."[96] Even as Israeli farmers are at an advantage, they are still able to gain insight on time-saving methods from Palestinian farmers. Nonetheless, because of the differences that give Israeli farmers an advantage already, their intangible benefits pertaining to equity were more apparent. A significant benefit for Israeli participants was the acquisition of more knowledge about Palestinian farmers as people, along with the intangible benefit of acknowledging privilege. An Israeli interviewee said, "they don't have rights. Not the same as me. If they can get any support, let's do it for them. I get 7 million liters of water a year [from a utility], they have to pump it [from wells]."[97] Through increased interaction, Israeli farmers saw these differences firsthand. Several Israeli farmers also stated their appreciation for their own circumstances. An interviewee said, "I'm much more thankful for what I have knowing my neighbor has much less."[98] Israeli farmers were able to gain a perspective toward Palestinian farmers and the extra challenges they have to withstand. These benefits created by PWEG and AIES help create perspectives that can benefit future change between both Israeli and Palestinian civil societies.

5.2.2 Resilience

This section analyzes the complexities around the concept of resilience. It is a balancing act, an act more challenging for some than others, but a movement beyond basic survival. Resilience, as defined by our framework, is the capacity of social-ecological systems to recover from shocks and stresses while retaining key functions.[99] These stressors range from climatic pressure on the water-food-energy nexus to the spillover violence and inequity generated by the conflict. Living in Israel and Palestine, as this report demonstrates, creates a great deal of pressure on the lives of its populations. For the sake of clarity, this analysis will be broken into two locations. The first will be Palestinian resilience in the towns of Marj Al-Ghazal and Auja, and the second, Israeli resilience in two kibbutzim and one moshav in the Arava Valley. Within these two analyses, we will draw directly upon field data grounded by our indicators of livelihood resilience and environmental resilience.

Palestinian Resilience

Livelihoods

The towns of Marj Al-Ghazal and Auja both reside in the Jericho Governorate, north of Jericho City, are governed through village councils appointed by the PA, and enact similar approaches to agriculture. To understand the human capital created through the PWEG and AIES partnership, one needs to look no further than the health benefits arising after the installation of neighborhood and household level DWW systems coupled with higher quality, lined cesspits. One female JAV member benefiting from these projects described the importance of healthy groundwater. "Before," she affirmed, "bacteria was getting into our water and making us sick."[100] Another local farmer listed health problems that have dissipated since the projects: stomach viruses, kidney infections, diarrhea, and liver problems.[101] Along with a decrease in illnesses came an increase in cleanliness.[102] With more freedom to access clean water, household kitchens became less dirty and the presence of pests decreased.

The residents of Auja and Marj Al-Ghazal frame the work of PWEG and AIES as a "progressive neighborhood plan."[103] Socially, the neighborhood DWW systems (4-5 houses) have supported extended relationships. These systems connect households beyond the immediate family, supporting an extended family engaged in water acts, such as street cleaning and system maintenance. Residents now spend time in the street, since there is no wastewater rolling down their driveway, and have started gifting dates and lemons due to better household yield.[104]

At a larger social scale, we saw the benefits of the USAID-funded CMM project, which provided select Palestinian farmers with the opportunity to learn new planting methods, innovative harvesting techniques, and observe new technologies from Israeli farmers.

And yet, this exposure also brought further understanding of the physical asymmetry between Israel and Palestine. One farmer in Marj Al-Ghazal commented,

> We were so excited about the work in the Arava. They had great greenhouses and so much land. What [PWEG] created here was a much smaller version. It was good, but not *that* good. [A kibbutz in the Arava] is taking their extra wastewater and selling it to another in the south. We can't do that here because of scale. We are not allowed [due to Israeli zoning restrictions] to build the infrastructure that is required.[105]

In Auja there were twenty-one artesian wells, but only nine of these wells are running; increased salt water intrusion and the measured process of permitting by Israel's Ministry of Agriculture have been the main obstacles to effective groundwater extraction. Multiple farmers claimed to feel "abandoned."[106] The fear of insecurity, exacerbated by Shin Bet (the Israel Security Agency) and monitored by the Ministry of Agriculture, prevents Palestinian farmers from accessing essential inputs including fertilizer (nitrogen 47 and concentrate 20-20-20) and effective pesticides.[107] These regulations stem from the weapon-making potential of these chemicals. As one farmer stated, "the ministry supports Israeli farmers and gives nothing to us."[108]

Financially, the PWEG and AIES partnership has aided the economies of these two villages. The PV systems reduce energy costs for irrigation pumping by 30-40 percent, the irrigation systems have led to increased date production, and residents rarely have to pay the 450 NIS charge for emptying their septic tank. Still, their greatest insecurity comes from the barrier to markets. For Marj Al-Ghazal and Auja's economies to grow, they need open access to the international market. According to a farmer near Auja,

> The occupation is the major problem because we cannot market freely and our exports are controlled by Israel. We are both charged by Israel and also must rely on a mediator who buys at a low cost and sells internationally at a high profit. Sometimes they make five times more than we would.[109]

Even within the region, Palestinian farmers make less; an estimated 80 percent of their market lies in the West Bank, while 20 percent is situated in Israel. In the West Bank, a kilogram of dates sells for 10 NIS whereas in Israel a kilogram has an average cost of 15 NIS. While the PWEG and AIES partner projects have bolstered opportunities and overall livelihood resilience, there are larger conflict-oriented factors at play that continue to affect Palestinian livelihoods.

Environment

The key element of environmental resilience stemming from the PWEG-AIES partnership is the increase of local water availability. A resident of Marj Al-Ghazal stated that freshwater is delivered to them by the PWA via Mekorot, the privatized Israeli water utility, every two days. Prior to the installation of neighborhood-level systems, Marj Al-Ghazal relied on these deliveries for irrigation, waste management, and household consumption. Now, consumption is their primary concern.[110] Greater water availability for irrigation supports greater crop diversity, including banana trees, lemon trees, grape leaves, and other specialty crops. Most importantly for financial aims, date trees are able to be fed the correct amount of water per day, 100-150 liters.[111]

Still, consistent remarks were made by almost all Palestinian informants about the changing natural landscape: water scarcity, increased temperature, and the increased threat level of pests. One farmer lost his expansive banana farm when he lost his main source of water, a spring to the north, due to drying land and a population increase as Palestinian farmers move toward more viable land.[112]

In addition to local Palestinian populations in the Auja region, Israeli settlements continue to subsume land for agriculture, and in turn, their industrial agriculture consumes a great deal of local groundwater.[113] This same farmer expounded on the increased threat of pests, specifically the Palestine viper and the red palm weevil. This farmer claimed the snakes are moving closer to dwellings to find shade and water. Farmers must work late into the dusk, avoiding the heat of the day, but exposed to the viper's most active hours; therefore, he places himself at greater risk, along with his livestock. He has lost three sheep to viper bites.[114] As for the red palm weevil, farmers across the West Bank point to it as a major cause of crop loss.[115] These pests "know no borders"[116] and many Palestinians highlight the importance of shared land and a shared environment with the Israelis as a driver for cooperation.

Israeli Resilience

Using the same indicators, environmental and livelihood resilience, allows for some clarification of the asymmetries in the lived experiences of Palestinians and Israelis sharing the same land, but divided by political borders.

Livelihoods

PWEG and AIES work less directly on the livelihoods of residents of kibbutzim across the Arava Valley. However, those farmers and community members connected with the partnership also must maintain sustainable livelihoods and are linked with our categories of capital: human, social, physical, and financial. The human component of these findings are intriguing in the lack of data provided. Unlike Palestinian concerns of sanitation and illness, Israeli residents made no such comment. An Israeli farmer did mention that "our water is saline, but the government [IWA] helps us find good sources. They dig the wells for us and all of our water is sourced from [the Arava Valley]."[117] This same farmer seemed to think of large industrial feeding of date palms with wastewater as commonplace: "we have only sewage water for our large communal date farm."[118] Due to the industrial agriculture in the Arava Valley, we found recurring commentary on how Israelis have little or nothing to gain regarding skills or techniques from the Palestinians who are engaged in smaller scale, "less effective" farming practices.[119]

The social structure of the two kibbutzim and one moshav interviewed varies, but exists around a cooperative agricultural structure. One kibbutz member explained that their kibbutz is part of a date cooperative that owns its own manufacturing and processing center. This same cooperative has a 50 percent share of Hadiklaim, one of Israel's largest date cooperatives with a strong marketing arm.[120] A primary concern raised by kibbutz members was that of the reluctant worker (e.g. a lack of youth engagement on the kibbutz), and when volunteers or workers do join, they tend to be more transient than in the past.[121]

Photo credit: Aleah Holt

Financially, most of the kibbutzim in the Arava Valley depend on date orchards for an estimated 80 percent of their income.[122] The income generated from the dates ranges from four million to eleven million shekels. And yet, costs are continuing to increase due to the price of water and labor. While the price of water can be substantial to maintain an industrial date orchard, a Israeli farmer noted "we have to pay for our water, but the Palestinians have to pay much more. We have three years of allocations based on the number of people [who live] here, and have to pay 1.5 shekels per 1,000 cubic/liters."[123]

The Israeli Ministry of Agriculture provides grant funding for agricultural equipment including lifts, pesticide applicators, and fertilizer. A leader in a kibbutz mentioned that Israelis "would be planting less without the help from the government. Our government provides grants to plant orchards of any kind––something the Palestinian Authority does not do."[124] Another farmer noted Israelis' access to land, free agricultural guides, and free research and development; he concluded by expressing, "we are capitalists in a very competitive environment."[125]

Environment

While the circumstances of their livelihoods are rather disparate, Palestinians and Israelis reside in a shared environment. The Arava Valley is experiencing an increase of salt water intrusion into its groundwater. Due to increased salinity, when date palm growers in the valley irrigate their fields, they must mix their groundwater with water provided by the national water company Mekorot as well as wastewater pumped from Eilat by the IWA. After a significant rain, which draws a saline runoff, farmers have to flush their fields with their irrigation systems to prevent the soil from retaining too much salt. And, just as in all areas of the Middle East, water is scarce. Even with Mekorot providing desalinated water for consumption and wastewater for irrigation, some kibbutzim face a lack of water during late summer (July through August). They therefore must ration some of their yearly quota to prepare for this high production period.

Date palms were not always the primary product of kibbutzim in the Arava. Yet with the increasing temperature, they represent a viable, hearty crop. An Israeli farmer described the recent environment:

> Climate change and weather factors contributed to a rough past year. The kibbutzim are trying to go back to their roots and focus on quality, but there is a natural drop off in date palm production. Everything fluctuates based on weather––our winters are getting warmer, but spring stays cold.[126]

Many Israelis also related the increased temperatures to an increase in pests, specifically, the red palm weevil. An infestation of red palm weevils has made its way from Jordan to Israel. Without a coherent approach to the weevil across the region, the pest will continue to wreak havoc across a shared environment.

5.2.3 Project and Partnership Sustainability

Project Sustainability

Water Quantity and Quality

Beneficiaries of wastewater systems all identified the same tangible benefits regarding water quantity and quality. The systems increased water quantity because the water previously discarded as graywater is now available to reuse for purposes such as irrigation.[127] One participant expressed that before they installed the system, they had to purchase irrigation water in addition to constantly emptying out their cesspit.[128] As for quality, the groundwater is protected from contamination caused by cesspits and waterborne bacteria are prevented.[129] Improved water access can often translate to improved opportunities. With sufficient water capacity, farmers can improve the quality of their current crops, diversify and grow new crops, and increase their crop yield. Other benefits included pest reduction and overall improved household sanitation and aesthetics. These results fulfill key goals of the PWEG and AIES collaboration. Hearing beneficiaries express that the systems are functioning with minimal interaction with PWEG and AIES is an indication of the sustainability of the project.

'Water' in Arabic, English, Hebrew.

Scaling Up

The first collaborative project between AIES and PWEG began with installing small household DWW treatment systems in Auja with plans to expand over time. One critical point for scaling up is ensuring that the initial pilot phase can function correctly over an extended time, and eventually without the assistance of any external support. PWEG indicated that their systems have a 90 percent operational rate and that any malfunctions are usually user error, indicating the systems are sustainable.[130] One contributing factor to the success of the systems is PWEG's monitoring and evaluation plan. The systems are ensured two years of maintenance by PWEG and 1 year of maintenance by a subcontractor.[131]The pilot phase was an example of scale functioning at the individual level. Both the beneficiaries as well as AIES and PWEG had enough capacity to continue implementing these systems as long as funding was available.

However, scaling up goes beyond the systems functioning and installing more of the same systems. The project demonstrated this by extending beyond the wastewater household systems. After the initial pilot installation, PWEG and AIES were awarded funds and conducted a stakeholder analysis in Auja to explore other community needs. The results showed that farmers needed energy for groundwater pumps in addition to wastewater treatment systems.[132] This led to the installation of the first PV system in Auja, and the project's first sign of scaling up. Furthermore, this new technology indicated a shift in the focus of the partnership from simply wastewater reuse to the wider concept of the 'water-energy nexus'.[133]

The next major phase was expanding to the CMM project in which PWEG became the lead organization on the grant. The AIES director expressed that the change in lead provided PWEG the opportunity to increase their capacity on an organizational level.[134] AIES historically has more capacity because of its funders and additional departments, so CMM funding provided the ability for the partnership to expand and potentially balance the asymmetries between the organizations. On the project level, the CMM funding allowed for installing the already established technologies (DWW and PV systems) in more regions but also added a new component, the people-to-people requirement. From this, the JAV Committee was created, which put Israeli date farmers together with Palestinian date farmers. The CMM project created the capacity for scale up between the organizations, expanded the systems to a completely new village (Marj Al-Ghazal), and targeted a new audience (farmers).

Data collected identified several challenges with reaching maximum capacity building. From our interactions with both AIES and PWEG and the participants, the ability to scale up in the communities already involved is possible, but only with continued funding. For one, "being donor-dependent is not sustainable," and the project is now feeling the effects of USAID pulling Palestinian funding.[135] Two goals of the project beyond what has already been completed are to implement larger community systems as opposed to household units and expand to another village, Fasayal. Even if funding was available, these two expansion goals would require more resources than the previous project phases. That includes technical support, approval of political stakeholders, and capacity of the participants to be involved, similar to Auja and Marj Al-Ghazal. Larger community off-grid systems have more risks with filtering and require more piping, energy, and monitoring. As noted by an AIES staff member, "an off-grid system will probably never get to the 10-10-10 standard, but there needs to be a standard."[136] Overall, what has been installed has been sustained with minimal issues, showcasing a successful scale up. However, in the context of water challenges in the region, a staffer at AIES stressed that "decentralized systems are an interim solution, and must be conceptualized in the context of a phased plan of scaling up."[137] These wastewater systems, while providing undeniable benefits to their recipients, are not the end-all solution, but rather an interim measure in the greater conflict.

Some scale up has certainly occurred successfully, but funding is critical for capacity building to continue. A group of participants discussed fundraising to keep project efforts going, mainly the JAV Committee, which speaks volumes to the willingness and sustainability of the project. One participant expressed that the "next step is to look for resources and to try and continue on our own. The Committee should not just stop because the funding has stopped."[138]

Overall, the systems already completed have proven to be beneficial to the participants and are sustainable. We interpret from the data that the project has been able to scale up and out from phase one successfully, but will not be able to continue without the same financial support.

Partnership Sustainability

Relationship Capacity

PWEG and AIES are separate and unique organizations that bring different strengths to their cooperation. It is important to note that these two organizations are not the only two working on transboundary water management in the region, though they help promote a culture of cooperation. Therefore, the benefits of this project provide validation and strength to the partnership between the two organizations and others like it. Systems developed in partnership with PWEG and AIES have a high success rate and an increased water quality production compared to similar systems implemented by other groups.[139] This high rate of success and quality strengthens the partnership, demonstrating a level of expertise and access that other organizations may not possess. While system success rate is relatively high, there is still room for capacity building within the partnership.[140]

While both organizations are legitimized by this partnership, it is presented in distinct ways. For PWEG, the partnership with AIES augments the organizational capacity in terms of funding, bidding, and grantmaking. For AIES, the partnership with PWEG has solidified their vision for transboundary cooperation and provided them with solid examples of this type of international peacebuilding. In addition, the extended period of this partnership has created a trust-based relationship between the organizational managers, which they suggest would withstand leadership change.[141] The extent of trust created between PWEG and AIES aids in the transfer of techniques, knowledge, and ideas between the organizations, such as wastewater treatment design and engineering. This trust-based cooperation at the organizational level can also act as a model for building trust-based relationships on the more local and individual scale, which provides the infrastructure for future peacebuilding.


Photo credit: Aleah Holt

Relationship Asymmetry

These benefits, however, do not completely override the political context in which these two organizations reside. For example, PWEG still maintains the position of "gatekeeper," in which AIES can only officially gain access to Palestinians through PWEG cooperation. Israeli and international employees from AIES, however, can cross border checkpoints with ease, while many Palestinians are stopped, questioned, and sometimes sent back at the border. The benefits of this project are limited in their ability to open doors completely for cooperation. For PWEG, these benefits do not make them immune to international policy developments. This is evident in the sudden change in U.S. policy which eliminated aid available for Palestinians or projects partnered with Palestinians. The policy change directly impacted this partnership due to the fact that partial funding came from USAID.

While the benefits accrued bolster the authority and legitimacy of this partnership, there are several factors that threaten the sustainability of the partnership. Disproportionate access to resources, funding, and people, in addition to the impact of the international community, play significant roles in the development and longevity of this partnership.

AIES, an academic institute in Israel, can access resources and funding at a higher degree than PWEG. Through its affiliation with Ben-Gurion University, AIES has a level of legitimacy which enables it to work with different partners, researchers, and organizations in and outside the region. While PWEG, a smaller non-profit organization, does not have the same access to resources and funding, the organization can easily access Palestinians in the West Bank, which is crucial for transboundary cooperation in the region. In relation to the international community, a Palestinian organization such as PWEG may have the sympathy and support of some nation-states and international organizations, such as the EU. On the other hand, an institute such as AIES may receive support from powerful states, like the U.S., who are Israeli allies. The absence of equity between the two partners has the potential to erode the partnership built by creating friction in agreements about funding sources, strategic communication, and interaction with the international community. Despite this, however, the sustainability of the partnership lies in each partners' ability to share resources and build capacity.

5.2.4 Gender

JAV Committee

In regard to the JAV Committee, there has certainly been a relative increase in gender awareness. Drawing on past recommendations, PWEG has made a point to disclose specific gender equity objectives and the gender breakdown of the committee and meeting attendance in grant reports.[142,143] Additionally, a female member of the JAV committee noted that PWEG staff convinced her to join the committee. She also noted it was particularly helpful for her to speak directly to female PWEG staff, who constitute a majority of PWEG's full-time staff.[144] Thus, it would appear PWEG has heeded some of the recommendations from past cohorts. There has been less of an explicit gender strategy regarding the JAV committee on the part of AIES. That said, there were more Israeli women initially on the JAV committee than their Palestinian counterparts—30 percent of Israeli participants were women while there were no Palestinian women represented. That changed in the following year as PWEG increased its gender strategy, with 40 percent Palestinian women and 30 percent Israeli women on the JAV committee.[145] The presence of women on the JAV committee itself also led to more interest, understanding, and eventual participation from other women in the Palestinian community.[146]

The JAV Committee appears to have made a significant impact on woman-to-woman relationship-building. Multiple female members of the committee cited a more comfortable environment when only women were present.[147] The JAV Committee also fostered a space for greater collaboration and ideas between Israeli and Palestinian women, ages 23 to 40 years old. For example, female Israeli committee members stated that they wanted to work directly with female Palestinan members to increase their autonomy through a women-only cooperative that produces date syrup.[148] Palestinian women were also the main drivers proposing low-tech desalination and biogas systems implemented through PWEG. If implemented, these proposed systems have the potential to create both direct tangible outcomes for Palestinian women and more robust contact between Israelis and Palestinians through trainings and sharing of knowledge.[149] One female Palestinian member of the committee also noted that when women are involved and knowledge is acquired in programs like the JAV Committee and training workshops, the knowledge is then widely shared with the rest of the community.[150] In fact, this participant is actively trying to keep a project similar to the JAV Committee continuing and maintaining connection with some of the other Palestinian committee members given the Committee's current suspension due to lack of funding.

Decentralized Wastewater Systems

When examining the tangible and intangible benefits of the household-level wastewater treatment systems, there are some benefits that affected women more than men. For example, one tangible benefit of the system is that there are fewer pests like mosquitoes, cockroaches, and rats. A village leader, farmer, and DWW system beneficiary stated that while men and women benefit equally, the suffering of women is particularly reduced because of the reduction in cockroaches found in the kitchen. The increased sanitation from reduced pests is a positive, tangible benefit which leads to an intangible benefit that the villager described himself as "the women are happy so the men are happy."[151] In fact, improved relations between men and women was a recurring finding. One village resident and DWW system beneficiary stated that the system has actually alleviated stress in the relationship with his wife and that they feel "more relaxed."[152] Together they manage the system and together they benefit. Another benefit is the health and safety of the community. In one village it was noted that before the new systems were installed, the community used open septic tanks which children would sometimes fall into. When asked about what would happen to those children, one villager stated that the children would break bones and even mentioned child fatalities.[153] The new systems appear to help prevent these hazards and are expected to improve sanitation, increase public health, and reduce pests.

5.2.5 Environmental Peacebuilding and Cooperation

Palestinian interviewees consistently cited the tangible benefits of the partnership as their main motivation for participating. One farmer in Marj Al-Ghazal stated that initially, the community was averse to working with Israelis. However, seeing the benefits of the wastewater recycling systems in Auja convinced them to participate.[154] Interaction with Israelis was not a motivation in and of itself; Palestinian farmer interviewees repeatedly mentioned that they have existing contacts with Israeli settlers in the West Bank. One Palestinian farmer had already been informally consulting with Israeli settler neighbors over red palm weevil management prior to the JAV Committee. However, this farmer was encouraged by his experience on the JAV Committee to reach out to his Israeli settler neighbors about air pocket reduction in dates.[155] If one of the goals of people-to-people programming is for participants to build relationships with "the Other" on their own, this example shows that there was at least one case of additional relationship building inspired by the JAV Committee.

Photo credit: Nathan Erwin

Among Palestinian project participants, interacting with Israelis was seen as inevitable. As an interviewee framed the relationship, "it is our bad destiny to have them as neighbors, and their bad destiny to have us as neighbors."[156] Palestinian interviewees indicated that, at the end of the day, Israelis are their neighbors, and it makes sense to know them. Interviewees in Auja and Marj Al-Ghazal highlighted that sharing meals and visiting each other's homes demonstrated that people were not the problem. A common sentiment was "we don't have any problems with the people, it's just with the extremist government."[157]

In contrast, Israeli participants on the JAV Committee were primarily motivated by the opportunity to build relationships with "the Other." One Israeli JAV Committee member who has been involved with various people-to-people efforts found that the JAV Committee was unique: "it feels less manufactured than other people-to-people programs because we have a clear thing that we share and can talk about: date farming."[158]

Israeli JAV Committee interviewees highlighted the importance of knowing one's neighbors and showing solidarity with other farmers.[159] The difference in attitudes about working with "the Other" are unsurprising given the context. Palestinians, as the occupied population, have no option other than to interact with Israelis. However, in the West Bank, most of their interactions are with settlers or soldiers. Israelis, who have sovereignty and a security apparatus that contains the Palestinian population, have to make a conscious decision, followed by dedicated action, to interact with "the Other."

Unlike Palestinian members of the JAV Committee, Israeli members had difficulty naming tangible benefits of the cooperation. One Israeli interviewee stated that they learned time-saving techniques from the Palestinian farmers,[160] but otherwise, the Israelis interviewed stressed that they were not participating to enhance their farming knowledge. Instead, many agreed that learning about the challenges Palestinian farmers face make them feel more grateful for their own circumstances. Israeli farmers attributed their successes to governmental support and the cooperative structure of kibbutzim.[161]

In agreement with the 2018 practicum report, we found that Israeli participants on the JAV Committee were already ideologically predisposed toward cooperative Israeli-Palestinian efforts.[162] Israeli interviewees shared that recruitment to the Committee on the Israeli side had been very difficult. Several Israeli farmers who were approached about participating in the JAV Committee declined because they viewed Palestinian date farmers as competitors.[163] They feared that sharing their farming techniques would reduce their market advantage. This dynamic may not only influence recruitment: several Palestinian members of the JAV Committee said that their Israeli counterparts were afraid of competition.[164] Specifically, a Palestinian farmer said that they asked for information about how to reduce the size of air pockets in the dates, but the Israeli farmers did not want to share because it would affect their competitive advantage.[165] Interestingly, none of the Israeli JAV Committee members interviewed believed that Palestinian farmers posed a competitive threat.[166] The different narratives of competition—that Israeli farmers were unwilling to share useful information with Palestinian farmers versus that Israeli farmers don't consider Palestinian farmers to be a competitive threat—merits further exploration.

Neither PWEG and AIES staff, nor participants see the cooperation as a significant form of peacebuilding. This is in part because of its limited scale; however, many interviewees viewed livelihood support as critical to peace. One Palestinian farmer stated that the Israeli government created challenges for Palestinian farmers so they could push them off their land and make room for settlements.[167] The wastewater recycling systems are therefore an intervention to sustain their farming and help them remain on their land.[168] While beneficial, Palestinian interviewees were clear that the impacts of the wastewater recycling systems should not be overstated.[169] "The [wastewater recycling] system is a drop in the sea [of the conflict]."[170]

One PWEG staff member said that their goal was to build the resilience of the Palestinian people, but relationship building was a helpful side effect.[171] In contrast, AIES staff viewed working with Palestinians as a goal unto itself.[172] One AIES staff member claimed to not be "starry eyed" about the potential to promote peacebuilding; rather, projects allow for deeper civil society relationship building and cooperation.[173] Another AIES staff member conceptualized DWW as empowerment that allows Palestinians to "take back [their] infrastructure in a conflict zone."[174] However, they said that livelihood resilience was only peacebuilding when coupled with advocacy. Without an accompanying advocacy campaign, the staffer feared that improving livelihood resilience contributed to normalization by making the status quo more bearable.[175]

Dissemination of peacebuilding

Recognizing that the project cannot overcome the conflict context on its own, AIES embarked on a Track II negotiation strategy in 2016. Using small scale infrastructure projects to demonstrate what could be achieved at a larger scale, AIES hopes to start policy dialogues.

By leveraging their existing relationships with transboundary civil society groups, AIES aims to create shared policy recommendations that could ultimately influence government actors. At the moment, AIES staff are focused on projects and policy recommendations other than the DWW systems, but the PWEG and AIES partnership has the potential to influence Track II negotiations in the future if it scales up.

There does not appear to be overlap between participants in the projects themselves and the AIES Track II negotiations programming. An Israeli JAV interviewee did not feel comfortable lobbying the Israeli government to relax restrictions on Palestinian farmers. They said they were just a farmer, indicating they did not feel empowered to have a voice in the political process.[176] This perspective aligns with an AIES staffer who said "it is hard to get people to advocate."[177] However, one Israeli JAV interviewee was active in lobbying through several transboundary organizations. While they conceded that these organizations and projects couldn't change everything about the political context, "it would be far worse without them."[178]

At the political level, staff at the IWA and PWA showed limited appreciation for the role of NGOs. IWA staff were optimistic about the role of NGOs, but only insofar as they provided informational assistance and analyses. Staff at the PWA felt that civil society actors make a space for conversation, but cannot really be involved because the issues are political.[179] For the most part, PWA-NGO partnerships are at the very local level. Interestingly, IWA staff echoed the "the problem is not the people, it's the politicians" phrase that so many other interviewees used. They described having positive relationships with their Palestinian counterparts, and expressed frustration at political stalemates.[180] When political actors themselves claim that a conflict is outside of their control, it reinforces inaction and maintains the conflict cycle.

Endnotes

[85] Interviewee 1, Interview 2

[86] Interviewee 1, Interview 2

[87] Interviewee 1, Interview 1

[88] Interviewee 1, Interview 12

[89] Interviewee 1, Interview 3

[90] Interviewee 1, Interview 1

[91] Interviewee 4, Interview 6

[92] Interviewee 1, Interview 1

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[94] Interviewee 1, Interview 17

[95] Interviewee 1, Interview 6

[96] Interviewee 1, Interview 9

[97] Interviewee 1, Interview 9

[98] Interviewee 1, Interview 9

[99] Folke, C., T. Hahn, P. Olsson, and J. Norberg. 2005. Adaptive governance of social- ecological systems. Annual Review of Environment and Resources 30:441–473.

[100] Interviewee 3, Interview 3

[101] Interviewee 1, Interview 3

[102] Interviewee 1, Interview 7

[103] Interviewee 1, Interview 4

[104] Interviewee 1, Interview 5

[105] Interviewee 2, Interview 7

[106] Ibid.

[107] Interviewee 1, Interview 3

[108] Interviewee 3, Interview 7

[109] Interviewee 1, Interview 3

[110] Interviewee 5, Interview 7

[111] Interviewee 1, Interview 3

[112] Interviewee 1, Interview 6

[113] Ibid.

[114] Ibid.

[115] Interviewee 1, Interview 6

[116] Interviewee 1, Interview 6

[117] Interviewee 1, Interview 9

[118] Ibid.

[119] Interviewee 1, Interview 8; Interviewee 1 Interview 9; Interviewee 1, Interview 10

[120] Interviewee 1, Interview 8

[121] Interviewee 1, Interview 10

[122] Interviewee 1, Interview 8

[123] Ibid.

[124] Ibid.

[125] Interviewee 1, Interview 9

[126] Interviewee 1, Interview 10

[127] Interviewee 1, Interview 3

[128] Interviewee 1, Interview 4

[129] Interviewee 1, Interview 3; Interviewee 3, Interview 3

[130] Interviewee 1, Interview 1

[131] Interviewee 1, Interview 1

[132] Interviewee 1, Interview 2

[133] Interviewee 1, Interview 2

[134] Interviewee 1, Interview 2

[135] Interviewee 1, Interview 2

[136] Interviewee 1, Interview 2

[137] Interviewee 1, Interview 11

[138] Interviewee 3, Interview 3

[139] Halasah, S., Rosen, D., Lipchin, C., Craddock, H., Kasher, R., & Amadei, B. (2018). Sustainability assessment of decentralized water and sanitation aid with a focus on household greywater systems, West Bank, Palestinian Authority.

[140] Interviewee 1, Interview 11

[141] Interviewee 6, Interview 14

[142] Milad Abraham, et al., "Building Bridges Over Troubled Waters: An Analysis of Palestinian-Israeli Cooperation within the Water-Food-Energy Nexus in the West Bank" (graduate practica report, American University School of International Service, August 2018, 51.

[143] "Green Technologies in Cooperative Date Farming/Project: FY17 Annual Performance Report," USAID/Palestinian Wastewater Engineers Group, 2017, https://pdf.usaid.gov/pdf_docs/PA00TCVM.pdf

[144] Interviewee 3, Interview 3

[145] Interviewee 3, Interview 1

[146] Interviewee 3, Interview 2

[147] Interviewee 1, Interview 10

[148] Interviewee 1, Interview 10; Interviewee 1, Interview 17

[149] Interviewee 1, Interview 1; Interviewee 3, Interview 2

[150] Interviewee 3, Interview 2

[151] Interviewee 1, Interview 7

[152] Interviewee 1, interview 5

[153] Interview 7

[154] Interviewee 1, Interview 7

[155] Interviewee 1, Interview 7

[156] Interviewee 1, Interview 7

[157] Interviewee 1, Interview 3; Interviewee 1, Interview 6; Interviewee 2, Interview 7

[158] Interviewee 1, Interview 17

[159] Interviewee 1, Interview 9; Interviewee 1, Interview 10; Interviewee 1, Interview 17

[160] Interviewee 1, Interview 9

[161] Interviewee 1, Interview 8; Interviewee 1, Interview 9; Interviewee 1, Interview 10; Interviewee 1, Interview 17

[162] Abraham, Milad, Bilal Aslam, Michael Band, Maggie Burns, Jillian Du, Jiameizi Jia, Rita Kirkpatrick, Brenna Rivett, Gloria Schulz, Alex Thomas, and Ann Williamson. "Building Bridges Over Troubled Waters: An Analysis of Palestinian-Israeli Cooperation within the Water-Food-Energy Nexus in the West Bank." Graduate practica report, American University School of International Service, August 2018., p. 44

[163] Interviewee 1, Interview 8; Interviewee 1, Interview 10; Interviewee 1, Interview 17

[164] Interviewee 1, Interview 3; Interviewee 1, Interview 6; Interviewee 1, Interviewee 7

[165] Interviewee 1, Interview 3

[166] Interviewee 1, Interview 9; Interviewee 1, Interview 10; Interviewee 1, Interview 17

[167] Interviewee 2, Interview 7

[168] Interviewee 2, Interview 7

[169] Interviewee 1, Interview 3; Interviewee 1, Interview 5; Interviewee 3, Interview 18

[170] Interviewee 1, Interview 5

[171] Interviewee 1, Interview 1

[172] Interviewee 1, Interview 2; Interviewee 1, Interview 11; Interviewee 1, Interview 12

[173] Interviewee 1, Interview 14

[174] Interviewee 1, Interview 11

[175] Interviewee 1, Interview 11

[176] Interviewee 1, Interview 10

[177] Interviewee 1, Interview 11

[178] Interviewee 1, Interview 17

[179] Interviewee 3, Interview 16

[180] Interviewees 1 and 2, Interview 15

Chapter 6 Discussion

Photo credit: Aleah Holt

6.1 Introduction

Three key themes in relation to the AIES-PWEG partnership emerged through the course of our interviews: the influence of the wider conflict, the closed and divergent narratives between and within groups, and funding dependency.These themes were often cited by informants of all types: government officials, staff of the partner organizations, and project participants, in both Israel and Palestine. Our findings on these themes indicate some important challenges faced by PWEG and AIES, both as individual organizations and as partners. They also inform our analysis of both the significance and the limitations of the transboundary cooperation efforts of the two organizations.

6.2 The Conflict

It is impossible to separate our findings toward the AIES-PWEG partnership from the larger context of the conflict. It is a ubiquitous, deep-seated aspect of life in Israel-Palestine. The conflict has broken apart the physical landscape. The fragmentation limits the movement of people within the space and has adverse effects on both the Israeli and Palestinian populations. Palestinian infrastructure is left damaged and underdeveloped. Living under occupation has also created a fear of, and resistance to, normalization of the status quo among the Palestinian people.

6.2.1 Obstruction of Movement

The occupation of Palestinian territory and subsequent fragmentation of the land into Areas A, B, and C has severely limited the ability of people to move within the space. For Palestinians, the barriers are physical. Their territory has been divided and significant restrictions have been placed on what Palestinians can do within their land. For example, one farmer we spoke to could not get permission to dig a new well on part of his land because that part of his land is in Area C.[181] Palestinians are not only restricted within Area C, however. Israel recently demolished several Palestinian apartment buildings on the edge of East Jerusalem, despite the buildings being in Area A.[182] A strict permitting regime has been created for Palestinians that further restricts their ability to move within Israel-Palestine. Multiple Palestinian farmers cited the obstruction of movement as something that limits their ability to get goods to market and access to the international market.[183] Farmers also cited lack of access to adequate fertilizer and pesticides as something that restricts their production.[184] All of this is a result of the dominant Israeli security narrative. As one Palestinian farmer noted, security is relative: "We have zero security because we are occupied."[185]

This narrative of security has led to physical barriers for Palestinians, but it has also established a psychological hold over Israelis. One Israeli participant in the JAV Committee told a story about the sharp change in relationships with Palestinians after the First Intifada in 1987 that only deteriorated further after the Second Intifada in the early 2000s.[186] Before the First Intifada, they recalled being able to travel into Palestinian territory and feel very comfortable being there as an Israeli. As a result of the First and Second Intifada, a strong security regime has been established and traveling into Area A is an illegal act. This JAV Committee member continued by noting that they personally still felt safe traveling into Palestinian territory, but that feeling was not shared by other Israelis they had spoken to. The interviewee explained that an entire generation of Israelis have grown up not knowing "the Other" outside of the highly securitized and conflictual caricature painted by the Israeli narrative.[187] Securitized narratives, when combined with securitized actions, both silence "the Other" and restrict contact with them.[188] This securitized narrative has created a space where both groups do not know "the Other," despite proximity, and has cultivated an environment of narrative closure.

The JAV Committee, established with the support of the USAID CMM grant, was impactful in the sense that it created a space for meaningful interactions between Israeli and Palestinian farmers. Such interactions are an essential step in breaking down both sides' entrenched narratives. Many of the Palestinian farmers said they had regular interactions with Israelis, but many of those interactions were with settlers or soldiers and took place in a setting rife with insecurity.[189] The JAV Committee brought people from both sides together to interact and build relationships; it is important to note here that these are meaningful interactions focused on the participants' shared identity as farmers, and are not standard day-to-day interactions between Israelis and Palestinians. By focusing on a shared farming identity, participants in the JAV Committee were able to build relationships based on commonality, rather than antagonistic ideologies. For now, the scale is very limited and only affects a small group of Israelis and Palestinians. The JAV Committee was successful, but only on a minor scale with minimal long-term impact. It is, however, a promising model for PWEG and AIES to build on for the future.

6.2.2 Water Infrastructure

Palestinian water infrastructure is in desperate need of improvement. Only 31 percent of the Palestinian population is connected to a centralized wastewater collection system, and the rest of the population depends on septic tanks and cesspits. Additionally, only 10 percent of collected wastewater in Palestine is treated.[190] Most attempts to improve Palestinian water infrastructure are blocked or delayed because of security issues cited by Israel or disagreements within the JWC.[191]

The governments of Israel and Palestine have struggled to deal with water issues in the West Bank for years, leading to a virtual standstill. PWEG and AIES have been working around this government deadlock by installing DWW treatment systems. "Low cost and low tech" systems make them ideal for working in this political environment.[192] Through our interview process, we were able to determine that these DWW systems improve livelihoods by saving money, improving crop yields, providing a reliable source of water, and improving household and community health.[193] Another question that was raised during our interviews concerned the benefits of decentralized versus centralized systems. The majority of our informants, including Palestinian farmers,[194] PWEG staff,[195] PWA officials,[196] and AIES staff,[197] agreed that decentralized systems were improving lives and working for the time being, but that centralized systems should be the long-term goal. With the current political climate, centralized systems are often not feasible, and decentralized systems are providing benefits to Palestinians on the individual, neighborhood, and community level.

6.2.3 Normalization

The decades-long occupation of Palestine has created a fear of, and a resistance to, normalization of the occupation. Whether projects or the partnership itself contribute to normalization is a serious concern, and something both PWEG and AIES have been aware of in their work.

Through the course of our interviews, PWEG[198]and AIES[199] staff talked about normalization and what they do to avoid it. By working within the confines of the occupation, the DWW systems and PV projects can be viewed as normalizing the way Palestinians have to live under the occupation. This was one of the concerns cited by Palestinian villagers when they were asked about their initial involvement in PWEG's projects.[200] That said, these systems have shown to improve beneficiaries' access to otherwise unreliable water and energy sources. An AIES staffer told us in an interview that these projects avoid normalization because they are practical.[201]In this view, these projects serve an expressed goal and improve livelihoods of the people who receive them, and thus they are not normalizing the conflict. PWEG staff members did not explicitly cite normalization when talking about their projects with AIES. They did, however, cite benefits that reaffirm the AIES claim that their projects avoid normalization by being practical. One PWEG staff member said the installation of wastewater systems produced tangible outcomes,[202] and another staff member said that PWEG contributes to capacity building in Palestine.[203] PWEG also has a refined selection criteria to ensure their DWW systems are placed in homes or communities where they will have the most impact. Both organizations, whether they express concerns about normalization or not, are very intentional in their work and are committed to improving livelihoods of the communities they work in.[204]

6.3 Closed Narratives & Divergent Narratives

6.3.1 Closed Narratives

The conflict influences the way people think, how they see themselves, and how they see "the Other." Historical narratives on both the Israeli and Palestinian side have been formed and cemented by the conflict. In other words, the narratives have become closed as a result of over a century of conflict. Narratives function as socio-historically constructed stories that inform peoples' perceptions of themselves and "the Other." Closed narratives are fueled by generalized depictions of "the Other" as an immoral and illegal actor. They contribute to the denial of "the Other's" suffering, and legitimize the in-group's actions and goals as legal and moral under all circumstances. Therefore, closed narratives create a society where people are no longer able to tolerate or recognize any narrative that contrasts the dominant, or in-group, narrative. The purpose of highlighting these closed narratives is not to extract the truth, but to provide insight on how closed narratives function as an important part of the context in which PWEG and AIES operate.

While conducting our research we encountered closed narratives from both groups, the most concrete examples of which came from representatives of the IWA and PWA. There were several phrases used by the IWA during our interview that were indicative of a closed narrative. These phrases, which were repeated several times, absolve Israel of any blame for the situation in Palestine, while also portraying themselves as the moral authority. These phrases include:

- ❑ If they would treat their water like Israel...
- ❑ If they would improve their infrastructure they would have more water...
- ❑ ...like Israel is doing.
- ❑ It's a political problem[205]

"If they would..." and "...like Israel is doing" imply there are no barriers to Palestinians implementing changes to their water infrastructure, despite the highly fragmented nature of land in the West Bank. The narrative presented by the IWA ignores the occupation almost entirely. When confronted with the challenges of the occupation in the West Bank, the IWA representatives were dismissive, claiming it a non-issue.

One example of this was the IWA representatives citing the centralized water treatment plant in Ramallah.[206] The water treated by the plant is not being reused, and is instead being dumped into a stream that runs off into Israel. The IWA wondered why the Palestinians did not reuse the graywater, despite the barriers that keep the PA from getting JWC approval for wastewater canal.[207] Here it is important to note that the canal would have crossed several administrative areas in the West Bank, which presented a security risk for the Israelis.

The officials also explained that the Palestinians *could* fix their infrastructure at any point but choose not to, instead opting to request large amounts of water from Israel. This is highly indicative of a closed narrative: the IWA officials cannot see the problems of "the Other," and assume the worst possible motivation.

The Oslo II Accords is also a key part of the narrative presented by the IWA. Under Oslo II, Israel is only required to provide 31.1 MCM of water per year to Palestine, and according to the IWA, Israel provided 73 MCM of water in 2018.[208] The IWA is claiming to provide more than double the amount of water required of them under Oslo II. Our purpose here is not to argue whether the number cited by the IWA is accurate. Instead we want to highlight that the IWA is using Oslo II to not only justify their current allocation of water, but to claim that they are providing far more than what is legally required of them. According to the IWA narrative, Israel is being more than generous with its limited resources. Again, our purpose here is not debate the truth behind this narrative, but to highlight its closure to the narrative presented by the PWA.

The narratives presented by the PWA were no less closed off. The PWA places almost all of the blame squarely on the occupation and the continued use of the Oslo II Accord.[209] The PWA claims that Israel prevents them from building any infrastructure in Area C, and extends a large amount of control over Area A despite it being under Palestinian control. They claim to ask only for a reasonable allocation of water; that if they were allowed to have their own water then they would be better off.[210] The PWA also claimed that Oslo II, which was supposed to expire in 1999, is a major source of their struggles. Oslo II established the JWC, which requires approval from both Israeli and Palestinian delegates before any project can begin, and the PWA representatives claim the Israeli members of the JWC use the committee as a form of blackmail.[211] Any requests the Palestinian side puts forward prompts the Israeli side to put forward a quid pro quo request which bogs down the process and limits the ability of the Palestinians to implement projects.[212] The narrative presented by the PWA thoroughly "others" the Israelis, as well, and portrays the Palestinians as morally just, while ignoring their own complicity in the problem.

"It's a political problem" was another phrase repeated in interviews with several stakeholders, including the IWA[213] and Palestinian farmers.[214] By saying that the problem is "political," these individuals are avoiding responsibility for the effects of their own narratives. The IWA, for example, claims to have no problem with the Palestinian people or their PWA counterparts. While that may be true, they are avoiding the responsibility of working toward a solution by saying the problem is out of their hands. "It's political" diverts the responsibility of solving these problems to a distant political elite. Furthermore, by absolving themselves of political agency and responsibility, these stakeholders are closing off their narratives. "It's political" creates a moral gray area where stakeholders can feel comfortable "knowing" they are not able to affect meaningful change.

Currently PWEG and AIES frame their projects as apolitical, despite their taking place in an inherently politicized environment. This likely occurs as a counter to the "it's political"narrative, allowing PWEG and AIES to implement their projects without encountering pushback from their stakeholders. The apolitical framing used by the partners allows stakeholders, like those on the JAV Committee, to collaborate in a way they could not otherwise. There comes a point where stakeholders may need to acknowledge that the projects they are engaged in are situated in a contentious political context that have broader implications. For example, several AIES staff claimed that projects that lay the groundwork for Track II diplomacy are important for the goals of the organization.[215] If AIES wants to continue scaling up toward Track II diplomacy work, then stakeholders are going to have to be willing to engage in an inherently political project.

Closed narratives create a difficult situation to work within, but there are processes that can re-open narratives. Creating a space for meaningful interaction is one of those processes, and that is what the JAV Committee did. One Israeli farmer and JAV member said that before being on the JAV Committee they were entirely unaware of the problems Palestinian farmers faced, which is illustrative of a formerly closed narrative that has been reopened by participation in the JAV Committee.[216] This participant's experience is also indicative of the ability of the interactions created by the JAV Committee to re-open narratives. Unfortunately, this one anecdote is not enough to make any substantial claims about the JAV Committee's potential to re-open closed narratives. What it does show is that the JAV Committee was successful in creating a shared space where meaningful interactions like this one could occur. If the JAV were allowed to continue in the way PWEG and AIES had intended before USAID funding was cut off, it may have been able to contribute to the re-opening of narratives for a larger group of participants.

6.3.2 Divergent Narratives

Divergent narratives are, put simply, narratives that are different from one another. Israeli and Palestinian narratives are often divergent, which is not surprising for two parties in an intractable conflict. Through our interviews, we found several examples of unexpected divergent narratives.

Some of the most surprising divergent narratives came from within the JAV Committee. Many of the Palestinian farmers we spoke to said that Israelis were reluctant to cooperate with them because the Israelis were worried about competition.[217] In their view, Israelis feared that Palestinian farmers would use techniques shared through JAV to compete with the Israelis on the date market. This is different from the narrative of the Israeli JAV Committee members. Not a single Israeli member of the JAV Committee said they were concerned about competition from Palestinian farmers.[218] One farmer recognized that Israelis and Palestinians do compete in the date market, but remarked that they were not concerned about the concept.[219] While Israeli farmers on the JAV Committee said they were not concerned about competition, there was one Israeli informant involved in a larger cooperative who claimed competition was one of their main concerns.[220] It is worth noting that this is the only Israeli to whom we spoke who chose not to participate in the JAV Committee, but this is an interesting anecdote nonetheless. The majority of Israelis to whom we spoke were on the JAV Committee and were already more predisposed to cooperation, so it is possible that those who chose not to join had a different narrative. This is one of the shortcomings in our methodology, and would be an interesting topic to investigate further in the future. Exploring what causes this divergence could also help PWEG and AIES draw more participants into future cooperative projects.

6.4 Funding Dependency

Funding instability was one of the recurring themes that appeared throughout our interview process. The majority of the funding for both PWEG and AIES comes from external sponsors. In previous years, USAID and other international funders consistently provided support for transboundary projects, which formed a dependency within the two organizations. This past year serves as an example of the volatile and unpredictable nature of the international community. Due to the withdrawal of USAID funding, the CMM project that created the JAV Committee has been discontinued for the foreseeable future. A PWEG staffer mentioned that a proposal for a "CMM II" was submitted before the stoppage of USAID funding. This proposal contained an expansion of the JAV Committee that would have created tangible benefits for both the Israeli and the Palestinian participants, while still creating a shared space for interaction. One interviewee argued that the partnership would survive the reduction of funding.[221] However, JAV activities and participant engagement remain suspended for lack of funding.

Funding alone does not legitimize or delegitimize a successful partnership; however, it does have a significant impact on capacity. One interviewee identified two distinct paradigms of funding: 1. the old paradigm consists of funding provided to governments to establish large centralized projects and 2. the new paradigm is providing funds to NGOs to create decentralized systems around bureaucratic gridlock.[222] While there are political, bureaucratic, and ideological barriers to this paradigm shift, projects such as the PWEG/AIES partnership lay the foundation for movement toward the new paradigm. Even with an adequate funding supply, there are layers of support needed at the governance and institutional level.

One way the partnership is attempting to adapt to funding fluctuation is promoting self-funding through the production of date bars. The date bar production is still in the prototype phase, but the idea is to create a fruit bar made with the syrup from the unmarketable dates. The syrup from the dates produced in the Jordan Valley and the Arava Valley would be manufactured into date bars which would sell in the international market, creating an independent source of income. This is just one way the partnership has begun to address the issue of funding, but financial stability should be a high priority.

6.5 Extent of Environmental Peacebuilding and Cooperation

Based on Öjendal et al.'s criteria, we can argue that the partnership between PWEG and AIES does in fact constitute "environmental peacebuilding" at the micro-scale through increased knowledge sharing, transboundary cooperation, and the formation of common identities.[223] When analyzed using Dresse et al.'s framework, the partnership does not fall neatly into any of the outlined categories of technical, restorative, or sustainable environmental peacebuilding. Instead, it incorporates aspects of each category. The relationship between PWEG and AIES can be best described as technical environmental peacebuilding, because they begin with a "mutual interest" of addressing "resource scarcity" (water scarcity and wastewater management), "cooperate technically" (to implement wastewater recycling technologies), and thereby "reduce environmental problems" (improve water quantity and quality) and "increase contacts" between Israelis and Palestinians. The partnership has little overlap with restorative environmental peacebuilding other than the building block of "interdependence"(needing to address water management) and outcome of "fostering shared identities." Both Palestinian and Israeli interviewees consistently mentioned neighborliness, indicating a shared local identity, and they also expressed a shared farming identity. However, members of the JAV Committee do not engage in the restorative environmental peacebuilding feature of "dialogue and negotiation," nor do they necessarily "reduce uncertainty through trust." The restrictions on free movement between Israel and Palestine mean that they cannot do their programming in "neutral spaces of interaction." For sustainable environmental peacebuilding, Dresse et al.'s initial condition is "power symmetry." Power is demonstrably asymmetrical between Israelis and Palestinians, but the JAV Committee and wastewater systems both seek to "reduce unequal resource distribution."[224]

The projects administered by PWEG and AIES therefore embody much of environmental peacebuilding theory, albeit at a small scale. Although the projects are not resolving the larger conflict, they are building infrastructure for future peace on the ground. Some of the stakeholders stated to us that the cooperation and projects are not "peacebuilding." The reservations on labeling this cooperation and the projects directly as peacebuilding are valid: such labeling can raise fears of normalization or overstating the impacts of the partnership. However, the cooperation and their projects lay the groundwork for future peace by helping establish the relationships necessary for scaling up. Successfully scaling up could also influence policy conversations at the Track II level in the future. The projects contribute to peace at a small scale by increasing people-to-people interaction, creating a space for relationship building through a shared farming identity, and improving livelihoods. Promoting ownership and resilience for communities is providing the infrastructure necessary for positive peace. When the governments are ready to negotiate a serious peace, people will be more ready to support it, at least in the Jordan and Arava valleys.

Photo credit:
Aleah Holt, top-right, middle right, bottom-right, left

Nathan Erwin, top left

Endnotes

[181] Interviewee 1, Interview 6

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[183] Multiple Interviewees, Interviews 6, 7, & 18

[184] Interviewee 1, Interview 6

[185] Interviewee 1, Interview 3

[186] Interviewee 1, Interview 17

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[189] Multiple Interviewees, interviews 6, 7, 18

[190] Interviewee 1, Interview 1

[191] Interviewee 1, Interview 16

[192] Interviewee 1, Interview 1

[193] Multiple Interviewees, Interviews 3,4,5,6,7, & 18

[194] Multiple Interviewees, Interview 18

[195] Interviewee 1, Interview 1

[196] Interviewee 1, Interview 16

[197] Interviewee 1, Interview 11

[198] Interviewee 1, Interview 1

[199] Interviewee 1, Interview 11 & 12

[200] Multiple Interviewees, Interview 7 & 18

[201] Interviewee 1, Interview 11

[202] Interviewee 2, Interview 1

[203] Interviewee 1, Interview 1

[204] Multiple Interviewees, Interviews 1, 2, & 14

[205] Interviewees 1 & 2, Interview 15

[206] Interviewees 1 & 2, Interview 15

[207] Interviewee 2, Interview 15

[208] IWA Document

[209] Interviewees 1, 2, & 3, Interview 16

[210] Interviewee 1, Interview 16

[211] Interviewee 1, Interview 16

[212] Interview 16

[213] Interviewees 1 & 2, Interview 15

[214] Interviewee 1, Interview6

[215] Multiple Interviewees, Interview 11 & 12

[216] Interviewee 1, Interview 10

[217] Multiple Interviewees, Interviews 3, 6, 7, 18

[218] Multiple Interviewees, Interviews 9, 19, & 17

[219] Interviewee 1, Interview 9

[220] Interviewee 1, Interview 8

[221] Interviewee 6, Interview 14

[222] Interviewee 26, Interview 11

[223] Öjendal, Joakim, and Swain, Ashok. Routledge Handbook of Environmental Conflict and Peacebuilding. Abingdon, Oxon: Routledge, 2018.

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Photo credit: Aleah Holt

Photo credit: Interviewee

Chapter 7 Recommendations

In the course of our fieldwork and interviews, informants directly or implicitly provided a number of recommendations for the future of the PWEG-AIES partnership and their activities. Additional suggestions have been formulated based on our observations and data collection. While the present environment has constrained previously anticipated activities, our recommendations provide a number of pathways and guidance for the future of the PWEG-AIES partnership.

Recommendation 1: Develop a funding strategy for more equipment and facilities

Physical infrastructure such as equipment and facilities would have clear benefits for Palestinian date farmers. These benefits would be enhanced, and also reach more beneficiaries, through the formation of farmer cooperatives. A key piece of date production infrastructure that is lacking in both communities is a cold storage (refrigeration and freezer) facility, which would allow farmers to store and sell dates when demand and prices are highest. At the moment, without this storage capacity, the farmers' only alternative is to sell their entire crop at the time of harvest and accept the prevailing price. Implementing this type of infrastructure would be a very significant undertaking, and would require securing land for a site as well as a reliable and ongoing energy supply for the freezer, in addition to funding for each aspect. Nevertheless, informants in Marj Al-Ghazal reported they were confident the land could be obtained, possibly using a PA-owned site. Another option would be to power the freezer with a PV installation, since current electricity supply to the village would not be sufficient. This would be an ideal project for a private moderately sized donor interested in supporting a one-time infrastructure improvement.

Recommendation 2: Assess and create an equitable cooperative for date farmers in Marj Al-Ghazal

Many informants in Marj Al-Ghazal expressed significant desire for a cooperative, such as the one that already exists in Auja.[225] In addition to guidance available from Auja, many Israeli informants offered to assist in capacity-building for farmer cooperative formation and could potentially be tapped to collaborate with the date farmers of Marj Al-Ghazal. A cross-border project of this type would need to prioritize the needs and preferences of the Palestinian farmers, for whom an Israeli cooperative model may not be effective or desirable. Therefore, we recommend that future cooperatives that engage on the international scale align with the International Co-operative Alliance (ICA). The ICA promulgates a statement on "Cooperative Identity" that defines cooperatives as "persons united voluntarily to meet their common economic, social, and cultural needs through a jointly owned and democratically controlled enterprise."[226] The ICA's key operating principles include open membership, democratic (one member, one vote) control, and member economic participation.[227] Since co-ops only control a certain segment of the supply and distribution chain, there is increased potential for co-ops to become absorbed by corporate entities. Many of these companies are their buyers and they are able to dictate the terms of purchase. This is of utmost concern as Palestinian co-ops collaborate with already existing Israeli cooperatives and larger international buyers. Israeli date farmers and cooperative members, together with the members of the Auja Date Farmers' Cooperative, should compare their structures and operations and jointly draft a cooperative model for other Palestinian farming communities. We encourage that this culminate with a piloted cooperative set in Marj Al-Ghazal.

Recommendation 3: Explore further utilization of the date packing facility in Auja for potential cooperatives and additional packaging

Auja has a date packing facility, which could present further opportunities for localizing and expanding aspects of the date production process. Further analysis is needed regarding the current capacity and uses of the facility. It may be a potential location for other communities or farmer cooperatives to pack their date crops, reducing their costs while providing supplemental income to Auja. The packing plant could also provide a space where other date products are manufactured, such as the syrup for the date bars, rather than exporting the production. Israeli informants who mentioned the potential of this facility could be solicited for further guidance and suggestions. This cooperation may, in turn, enhance Israeli understanding of the constraints related to the Auja packing plant.

Recommendation 4: Analyze expansion of other small scale projects

In addition to the wastewater systems that have formed the bulk of the PWEG and AIES partnership, other types of decentralized systems have been considered, and some have reached the proposal and pilot stages. These primarily include small-scale desalination systems and household biogas production. These systems require further study and analysis of feasibility, scaling, best practices, and net benefits. Given the relationships established in Auja and Marj Al-Ghazal, it may be preferable to expand the wastewater projects there. A second project the partnership could pursue is developing greenhouses for the neighborhood or community level. The use of greenhouses allows for further diversification of garden and cash crops, along with gender equity benefits discussed below (Rec. 7). A third project PWEG and AIES should analyze is the utilization of crop waste. Rejected fruit from the date harvest may offer additional opportunities for alternative products. PWEG reports roughly a 10 percent loss of the harvest across the region.[228] Responses from both Israeli and Palestinian informants indicate this waste is discarded unless it is processed to make date syrup. Possibilities for utilizing these fruits include, but are not limited to, discounted local sales for lower quality dates (perhaps aimed at home or commercial cooking uses), use in livestock feed, and composting unsalable dates to produce an alternative to chemical fertilizers.[229]

Recommendation 5: Continue to pursue funding alternatives to achieve funding independence

Of course, scaling or implementing any new or existing projects depends on funding availability, which is an acute concern for PWEG and AIES due to recent restrictions. The date bar project, currently in progress, offers a possible source of independent funds not reliant on donors or grants. Income and employment opportunities should be studied carefully to weigh the benefits compared to the impacts of generating funds. Markets for the date bars should also be analyzed thoroughly to ensure the sustainability of this project before the partnership becomes reliant on this financial model. Promoting the date bars based on social impact or political motivations may be effective in the short term, but limit the market opportunities for the product. We understand that the potential of this product is uncertain, and, most likely, will not supplement all of the funding required for a sustained partnership. Other options might include seeking corporate or institutional campus partners to supply,[230] or developing products that have existing local or international markets, such as the date syrup itself.

Recommendation 6: Create a revolving fund to increase financial capacity

An additional option for funding is to create a revolving fund to support expansion of decentralized systems and other infrastructure. A revolving fund is a special account into which money is deposited for expenditure without regard to fiscal-year limitations.[231] PWEG and AEIS would conduct a cycle of businesslike operations, in which it would charge for the sale of products or services (perhaps, the date bar) and use the proceeds to finance other projects. This form of funding would need an initial source of capital to be established, but after that, project recipients would pay back the cost of implementation over time, so the fund would eventually be replenished and available to support additional projects. In addition to funding new wastewater systems, a revolving fund could support PV installations, decentralized desalination and biogas projects, and the freezer facility for the date farmers. Informants in Marj Al-Ghazal described how Israeli kibbutzim use a similar system, where infrastructure is provided through capital investments and government assistance while members contribute monthly payments instead of bearing the upfront costs. They were confident that the profit created by increased storage capacity would be enough to allow them to make repayments.[232] Despite requiring the initial capital to establish it and, depending on the initial size, a revolving fund has significant potential to alleviate the partnership's ongoing funding dependency, while also increasing local ownership of the projects.

Recommendation 7: Consider expansion of building greenhouses that offers opportunities to incorporate gender equity objectives

Recommendations throughout past reports have included gender equity and specific pathways for increasing women's participation in project activities. Our data indicates that improvements have been made, while numerous opportunities remain. A clear priority, which was emphasized by a female Palestinian JAV Committee member, is the expansion of greenhouses. While some Palestinian women participate in date farming and other existing economic activities to various degrees, greenhouses are an easier space for women to access without confronting gender norms or male dominance.[233] Household or community level greenhouses offer women more of an opportunity to be involved in and benefit from project activities. Tending greenhouse crops is more accessible and flexible for women with daily household duties, while also providing a space for more diverse crop production for domestic use and sale. Additionally, female Israeli JAV committee members suggested operating an exclusively women-run date syrup production plant. This project would be another opportunity for income generation and social empowerment for Palestinian women. It could also provide an effective opportunity for cross-border cooperation and relationship-building between Palestinian and Israeli women. A greenhouse project would need to be conscious of the existing burdens on women's time and labor in the household as well as the distribution of the proceeds from these activities.

Recommendation 8: Reestablish a body similar to the JAV Committee to increase Israeli-Palestinian female participation

While the USAID funding has ended, continuing the JAV Committee, or some iteration of, should be a high priority. As noted in previous sections, the space created for dialogue within the JAV Committee is key to any peacebuilding efforts, despite the relatively small scale of such projects. This is particularly true of the opportunity this committee afforded both Israeli and Palestinian women. Women on the committee were empowered, engaged, and eager to contribute to the overall success and longevity of these cooperative efforts. It would be in both PWEG's and AIES's best interests to prioritize the involvement and cooperation of Palestinian and Israeli women, particularly if done as a stand-alone, women-specific project. The JAV Committee experience, while brief, did produce a strong foundation of committed Palestinian and Israeli women who could inform the next project or phase of a similar committee.

Recommendation 9: Encourage more meaningful dialogue and cooperation between Israeli and Palestinian participants

A prevalent concern among Palestinian farmers was their lack of access to the same quality of fertilizers and pesticides that Israelis use, which are restricted due to security policies. We recommend that Israeli partners assess the potential for political engagement to address this as a discrete issue, and using their authority as fellow farmers to work toward a solution. Israeli technical capacity on agricultural techniques and innovation could also be directed toward analysis of the effectiveness of any of these treatments, including alternatives for pest control and soil enhancement, such as organic composting; this could then be disseminated to or developed cooperatively with Palestinian farmers. There may be greater willingness to pilot these approaches among farmers who are dissatisfied with their current options, especially if other methods are shown to be beneficial.

Recommendation 10: Develop a joint pest management strategy for all date farmer participants

Cooperative pest control was frequently mentioned by both Israeli and Palestinian informants, despite already occurring through limited, informal means. Strengthening cooperation on this issue presents the clearest and most easily attainable method to offer tangible benefits for Israeli participants. All informants were clear about the transboundary nature of the threat to date crops from red palm weevils. Therefore, the motivation for cooperative actions is clear, yet farmers may simply lack a clear mechanism to engage. Explicitly advertising knowledge-sharing between Israeli and Palestinian date farmers regarding red weevil and other pest mitigation may increase Israeli participation within a revived JAV Committee or similar project. A more formalized channel is needed to ensure that the most efficient pest control techniques reach the Palestinian farmers, and that emerging information on the red palm weevil threat is shared in both directions, for the sake of all date farmers in the region.

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[231] United States Government Accountability Office, "A Glossary of Terms Used in the Federal Budget Process," Washington D.C.: GAO, 2005.

[232] Interviewee 3, Interview 18

[233] Interviewee 3, Interview 3

Appendix

Appendix A: Sample Interview Questions

AIES and PWEG
What led you to get involved with this work? How has the partnership evolved since you first got involved? How has your role evolved?
How much of your time is dedicated to AIES/PWEG projects?
What are the impacts of these systems on the communities? (Initial, perceived, and anticipated?)
Is it producing the benefits expected for cooperation? If so, which benefits? What do you personally think needs to be improved for some of the systems?
What are your organization's specific tasks and responsibilities involved in these projects?
Do you have a gender strategy? What are women's roles within the AIES and PWEG partnership?
How would this project be different if you were not partnering? Why do you think [AIES or PWEG] chooses to work with you?
Do these small scale projects contribute to peacebuilding? At what scale would they have to be to impact the larger conflict?
How do you adjust to losing funding? What plans do you have to alleviate that dependency?

Project Beneficiaries*
Tell us about your decision to join this project.
What were you hoping for when you started this project? Have your expectations been met? What are the realized benefits from this project? What future benefits do you hope for?
Were the benefits discussed the same for women as men?
Why do you think [Palestinians or Israelis] choose to work with you on this project?
Why are you willing to work with [Palestinians or Israelis]?
What would you like improved with this system?
What kinds of interactions did you have with [Palestinians or Israelis] before the JAV committee? What were your expectations for working together? Did any of your expectations turn out to be wrong?
Has your view or relations with [Palestinians or Israelis] changed since being on the JAV?
What was the participation of both Israeli and Palestinian women in the JAV during your membership? Do you think it was important to have women on the JAV? Do you think there were any benefits or drawbacks to including women?

*Beneficiaries includes Israeli and Palestinian farmers, JAV committee members, and participants with household-level wastewater treatment systems

Israeli Water Authority and Palestinian Water Authority
How do the IWA and PWA interact? When was the last time you talked to your counterpart at the [IWA or PWA]? How often do you meet with them?
Are there challenges relating to your cooperation?
What is the role of graywater recycling and other off-grid decentralized systems in the West Bank?
Do you think decentralized systems provide an obstacle for future centralized wastewater management within the West Bank? If not, what kind of benefits do these systems provide both for Israelis and Palestinians? If so, how can these household-level systems be implemented in a more productive way?
Do you believe that civil society initiatives have a role to play in cooperation between Palestinians and Israelis?
What challenges do you [PWA] face as a result of the division of areas A, B, and C? How does this prevent you from providing quality water management?
Could you [IWA] name three things that the Palestinians could do to better improve wastewater management?
How do you feel about the future of water supply in Israel as a whole? In the West Bank?

USAID
What are the criteria for successful project proposals? Does the successful proposal criteria include a gender strategy? And if so, what is it?
Is USAID currently funding projects that increase people to people reconciliation activities? (similar to the JAV committee) Is USAID currently funding CMM grants?
In your opinion, what would be the characteristics of a project that would significantly contribute to peace on the ground?
How has the current US administration's approach to peace and development in the region changed what you are doing on a daily basis?
Are there ways USAID is still engaged with Palestinians given the cut in US funding for development projects in Palestine?

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