



P.O. Box 335
Boulder CO 80306-0335

Sustainable Israeli-Palestinian Projects

www.sippprojects.org
info@sippprojects.org

SIPP Trip Report: Israel and the West Bank; Electronic Waste and the Kidron/Nar
October 27 – November 7, 2016
Peter Ornstein (SIPP) and Anne Peters (Gracestone, Inc.)

Introduction

SIPP sponsored a trip by Peter Ornstein (President of SIPP) and Anne Peters (Gracestone, Inc.) to Israel and the West Bank from October 27, 2016, through November 7, 2016. The purposes of the trip were to 1) gather facts and a broader understanding of electronic waste processing by Palestinians in the West Bank west of Hebron; 2) provide workshops for Palestinians on the health and safety considerations associated with processing and burning electronic wastes; 3) provide a workshop on electronic waste issues to Israeli waste officials and stakeholders; and 4) visit the constructed wetlands that SIPP is helping to sponsor in the Kidron/Nar Basin. Another general objective was to expand SIPP's contacts in the region. For the electronic waste portions of their trip, Peter and Anne were working with the Green Land Society (a Palestinian NGO), and with AJEEC-NISPD (an Israeli NGO).

Specific Objectives and Accomplishments

1) **Objective: Visit the electronic waste burn areas and develop and understanding of material flow, local economics, and political issues to support regional needs.**

Accomplishments: We visited the burn areas on October 30th. The burn areas are located in and around the villages of Beit Awwa, Dayr Samit, and Idhna (all west of Hebron).

- **Material flows & local economics:** The village of Beit Awwa is a center of thriving commerce in refurbished and off-spec merchandise, receiving about 50 truckloads a day of old goods from Israel. Scores of small businesses receive Israel's old electronics, household fixtures, furniture, and appliances for repair, selling the freshly refurbished items through small workshop storefronts that line the village. It is likely that the old goods are collected from Israel by a network of small, informal collectors who pick up unwanted items just left curbside, and sell truckloads to middlemen brokers who in turn sell them to buyers in the West Bank. This is all informal economy material flows. The 3 villages and surrounding rural areas have abundant mountains of scrap metal and other trash on roadsides and throughout the towns. It appears that there is a local economic benefit from the Israeli discards, but that waste from the process is not being responsibly managed. It also appears that the burning of cables from all kinds of waste electrical and electronic equipment (not just electronics) is an activity that occurs after refurbishment, for the few shekels that can be earned from the copper recovered – and is probably the worst pollutant source we observed from this robust repair economy. We learned that the people doing the burning “are like drug dealers,” our Green Land Society host told us – burning occurs surreptitiously in fields and olive groves, often at night; this implies the actors

know this is not a legitimate activity. The burning is causing tremendous air, water, and soil damage as well as harm to human health, as documented by the Green Land Society's research.

- **Political issues.** Through conversations and meetings, we learned that the management of electronic waste is a low-priority issue for the Palestinian Authority. We were told there is a lack of legal ability to impose laws preventing burning in this part of Palestine. It is not clear if there are even laws or regulations making open burning of waste or pollution activities a crime, and both the PA and local village officials have severely limited resources for enforcement. Cultural issues impact political choices too. We chatted with some locals about why there is so much trash of every kind, and stacks of old cars everywhere. It was explained that partly it is because Palestinians can't buy new cars so old ones are kept for spare parts, and that old cars and scrap metal are stockpiled til metal prices go up. One person observed that the concept of 'public space' in Palestinian culture is different from European culture. That is, cultural life in the West Bank centers on the home or the mosque – and the notion of keeping public areas free of trash and pollutants – for everyone's benefit – is not inherent in the larger culture.

We visited the site that the Green Land Society (GLS) has identified for a future educational center (modeled on Hiriya, see #3 below), and also visited a burn area in and adjacent to an ancient cave GLS would like to reclaim as a possible tourist site.

2) Objective: Conduct a workshop on electronic waste health and safety issues to Palestinian leaders.

Accomplishments: Anne conducted a workshop in Idhna on November 4, 2016. There were approximately 60 attendees, including the Mayor of Idhna and officials from three municipalities, one or more people from the Palestinian Ministry of the Environment, an Italian NGO, local business interests, academics and students from Al Quds University, and other members of the community. One community member has a wire chopper business that he is using to recycle some of the waste, and another member had plans to start an electronic waste recycling business. Anne presented on the health impacts of e-waste burning, with data from around the world, on electronics recycling and repair strategies, and on practical strategies to mitigate spread of hazardous chemical contamination from burning electronics. The discussion was lively (though mostly in Arabic) and appeared to provide an opportunity for GLS to conduct more training. This presentation is available upon request.

3) Objective: Gather information on the Israeli Electronic Waste Law – both its background and implementation.

Accomplishments: We read the English version of the Israeli e-waste law before the trip. In Tel Aviv, we met with Adam Teva V'Din (an Israeli environmental advocacy organization) and learned of their role in drafting and promoting Israel's Electronic Waste Law, which was passed in 2012. Anne sketched out many aspects of implementation of such laws based on her international experience with such laws. We toured Hiriya, an Israeli 3,000 TPD waste park with recycling facility, construction and debris processing operations, compost operations, RDF (refuse-derived fuel) energy generation, landfill with methane recovery, wetlands for wastewater processing, gardens, a café, and a world-class community education center (serving 1.5 million people from its green and attractive campus outside of Tel Aviv) to meet some of the other key players in Israel's recycling community. We also toured ECommunity, which is one of the two designated electronic waste recyclers under Israel's law. ECommunity is impressive in both its scale of its operation and its social enterprise model of employing special needs adults. While we learned a great deal about the history and structure of Israel's e-waste law, virtually everyone we spoke with did not believe that the law

was being successfully implemented and that the government has not collected adequate data to measure the law's effectiveness.

4) Objective: Provide a lecture at the Porter School's (Tel Aviv University) Waste Management Forum.

Accomplishments: Anne was the keynote speaker at the Waste Management Forum, which had over 50 attendees. The attendees included Guy Samet, the Deputy Minister within the Israeli Ministry for the Environment, Asaf Rosenbloom from Adam Teva V'Din, the owners of MAI (the largest Israeli electronics recycling company), other waste/diversion businesspersons, and students and academic professionals in the environmental field. There was a robust discussion about the failure of the Ministry to adequately implement the Electronic Waste Law and possible strategies to effect better implementation. Afterward, the organizers of the event told us that this was the liveliest discussion they have had in the two years they have been running the Forum.

5) Objective: Receive an update and tour the constructed wetlands in the Kidron/Nar Basin.

Accomplishments: Peter met with the Mayor of Al Ubeidiyah and visited the construction site where the waste system is being built. It is adjacent to a boy's grade 7-12 school, which is adjacent to a girl's 7-12 school. At the girl's school, Peter met the school director and saw a small anaerobic digester that is in use to create gas for use in the school's kitchen. Peter then visited the location for another proposed constructed wetlands project that would service 1,500 people, roughly 3 times the size of the demonstration project. This larger project is intended to protect the water quality at the nearby Mar Saba Monastery. Peter then took in the sights (and putrid smell) of the nearby Kidron/Nar stream. (More information is below.) Follow-up meetings included an update from Richard Laster (Attorney and Prof at Hebrew University), and Colombine Peze-Heidsieck (Shurook – an organization focusing on building Palestinian infrastructure).

Other Accomplishments

- Provided a lecture on environmental issues related to scrap electronics at Al Quds University to approximately a dozen graduate students and faculty. In particular, a professor of Economics (Ibrahim Awad) was specifically interested in scrap economics and a professor of Food Science & Technology (Saleh M.S. Sawalha) was interested in uptake into food of the chemicals released by burning of scrap electronics.
- Attended a presentation at The Experimental School in Jerusalem (high school) by a UNESCO-IHE/EWB team from the Netherlands that is partnering with 3 schools (1 in Jerusalem, 1 in East Jerusalem, and 1 in the West Bank – all three in the Kidron/Nar Basin) to demonstrate different sewage treatment technologies. Attended a technical presentation by the same team at Al Quds University. From these presentations, we learned about the scope of the proposed project, which is planned to extend over 4 years, and explored possible opportunities for future collaboration.
- Connected Akram Amro to Yinon Rudich, PhD (atmospheric chemist at the Weizmann Institute). Yinon is interested in partnering with an American scientist, as well as faculty from Al Quds University, to pursue a USAID grant concerning the dispersion of pollutants from burning electronic waste. AJEEC-NISPED and Green Land Society will be involved.
- Connected Akram with Richard Laster. Richard is involved in ongoing work to reduce the amount of waste going into the Hebron River.

- Connected Akram with Colombine Peze-Heidsieck of Shurook. Shurook may be interested in supporting the proposed education center.
- SIPP briefed two faculty (Dr. Shmuel Brenner and Dr. Tareq Abu Hamed) from the Arava Institute on SIPP's activities. Dr. Brenner has been a leader in the country's environmental activities for decades and reminded us "it is very hard to decouple environmental problems from political problems here." We are hopeful that our increasing connections with Arava faculty will present an opportunity for future SIPP collaboration with the Arava Institute.
- Toured Royal, a plastics manufacturing company in Hebron that is the area's largest employer and has a commercial presence throughout the West Bank. Spoke with them about possibilities of using post-consumer plastics in their products but the contacts we spoke with were not open to this.

Contacts Made During Trip

Name	Organization & Notes	Website
Marco Verber	CESVI - European NGO, based in Hebron	www.cesvi.eu
Marco Caniato		
Ismail Suleiman	SAFA - recycler & makes small-scale septic tanks	www.safarecycling.com
Anton Hallak	eco tech recycling - starting electronic recycling business	
Imad Al-Rjoub	Royal	www.royal.ps
Hazam Agha, PhD	Al Quds Univ.	www.qumranpalestine.com www.alquds.edu
Jawad Hassan	Al Quds Univ., Kidron/Nar, E-waste. Hosted us in his class. Also has consulting firm Qumran Palestine	
Ibrahim Awad	Al Quds Univ.	
Saleh Sawalha	Al Quds Univ.	
Abed ALrahman Tomaizeh	Idna Municipality, Dir. of Public Relations	
Eng. Luay Qaisi, Dir. of Planning & Development	State of Palestine; PLO; Palestinian Nat'l Authority; Hebron Governate	www.hebron.plo.ps
Eng. Mohannad A. Nassar	Palestinian Polytechni U. Renewable Energy & Environment Research Unit	
Dr. Shmuel Brenner	Arava Institute (board)	
Dr. Tareq Abu Hamed	Arava Institute	http://arava.org/2016/06/new-academic-director-dr-tareq-abu-hamed/
Lina Altawna, Amran Amarni	Project Wadi Attir	www.projectwadiattir.com
Arie Rahamimoff	Kidron/Nar	www.rahamimoff.com
Nitsan Levy, PhD	Sustainability	www.envioshorg.il
Asaf RosenBlum (and Huggit)	Adam Teve v'Din, Head of Legal Dept.	www.adamteva.org.il
Leonardo Alfonso, PhD	Kidron/Nar. Dutch wastewater & water delegation	www.unesco-ihe.org
Peter van der Steen, PhD		
Hans van Bruggen, PhD		
Joktan Cohen		
Richard Laster	Kidron/Nar	
Mayor Sulieman Abdullah Al-Assa	Al Ubeidiyah	

Name	Organization & Notes	Website
Liora Meron	Kidron/Nar	
Avner Goren	Kidron/Nar, Wadi Attir	
Colombine Peze-Heidsieck	Shurook	
Yinon Rudich, PhD	Weizman Institute	www.weizmann.ac.il/EPS/People/Yinon-Rudich

Next Steps

- Connect Nidal to Akram regarding the proposed educational center.
- Tour Nidal's facility in Denver – scheduled for December 13, 2016
- Translate the R2 Standards to Hebrew (either SIPP, SERI, or Israel, AJEEC, or Adam Teva V'Din - if requested).
- Translate the R2 Standards to Arabic (either SIPP, SERI, Palestinian Authority, or Green Land Society - if requested).
- Possible webinar for Adam Teva V'Din on the R2 Standards in anticipation of possible adoption of the standards through Israel's Electronic Waste Law.
- Webinar for Green Land Society on the R2 Standards in anticipation of possible adoption of the standards by the Palestinian Authority.
- Assist AJEEC and the Green Land Society in the drafting of a policy paper.
- Make local presentations at CU and the Boulder community.
- Make local presentation for the waste management community.
- Follow-up with the Dutch team to coordinate any work in the Kidron Basin.

Day-By-Day

From the blog <http://www.facebook.com/sippprojects>

Oct 27, 2016

Anne and Peter arrived in Jerusalem today. We walked around the Old City - which felt good after our 9.5 hr flight. We met with Liora Meron and discussed possible SIPP involvement in some of the other work Liora is engaged in, and possibly meeting with a group from the Netherlands on Saturday evening.



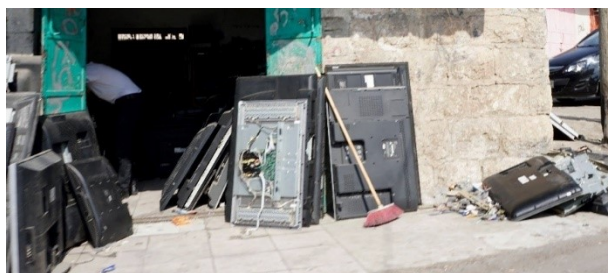
Oct 29, 2016

Met with Avner Goren (archaeologist and tour guide - www.facebook.com/Archaeologyrocks101/posts/428230260599948) for both a tour of the Old City in Jerusalem, and discussion of the Kidron Project. Avner is also the Tour Coordinator for Wadi Attir (sustainable Bedouin agricultural project in the Negev) - www.sustainabilitylabs.org/wadiattir/home/#). SIPP visited Wadi Attir last year and recommends visiting the area if you are interested in Bedouin/Israeli sustainable farming partnerships.



Oct 30, 2016

Today we toured several villages in the Hebron area. Our focus was to see several of the electronic waste burn areas, and get a better understanding of the local economy. At the burn areas - which were identified by the black patches scattered throughout the hillsides - we did not see any "smoking guns" (or smoking cathode ray tubes for that matter). One of



the burn areas was adjacent to a cave which is identified as UNESCO cultural heritage site. Dr. Amro (our guide) is very interested in cleaning up the cave and burn area and to develop tourism at the site.



In addition to the burn areas, we saw how the communities were dependent on taking used and excess goods (furniture, appliances, toilets, etc), refurbishing as needed, and then reselling. There were shops after shops of second-hand-stores. There were also piles and piles (mountains) of scrap metal, waiting to be sold as commodities. Our last stop was a tour of Royal, a Palestinian plastics manufacturer and recycler in Hebron. The growing company employs 600+ people and was impressive in its array of products.



Oct 31, 2016

Peter started out the day tagging along with a Dutch group at the Experimental School in Jerusalem. The Dutch team is affiliated with UNESCO and Engineers Without Borders, and funded by the Netherlands. They were looking at one Israeli school in Jerusalem, one Israeli-Arab school in East Jerusalem, and one Palestinian school in the West Bank – all three in the Kidron/Nar Basin - to team up with Hebrew Univ and Al Quds Univ (separately). The Dutch team would install small wastewater treatment systems at or near the schools. The schools would monitor the treatment systems over four years.

Later, Jawad Hassan (Al Quds Univ professor) drove Peter and Anne over to Al Quds Univ, Abu Dis campus, where Anne gave a presentation on electronic waste to graduate level students, as well as 3 faculty. Anne started out discussing waste generally, then focused on the unique issues associated with electronic waste, then distinguished formal from informal practices, especially in developing countries, and highlighted some of the many policy challenges in addressing electronic waste in the region. The presentation was well received.

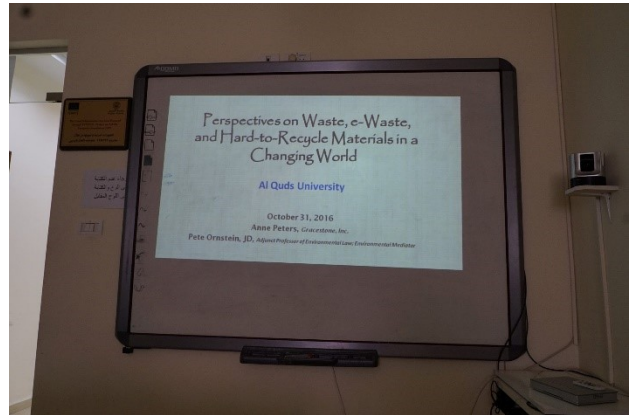
Immediately after Anne's talk, we again joined up with the Dutch group, this time at Al Quds Univ. We received a more detailed explanation of the work they are proposing, and then visited 2 potential wastewater treatment sites near campus.



Experimental School - A high school in Jerusalem.



Netherlands UNESCO/EWB Team at the Experimental



Nov 1, 2016

Busy day in Tel Aviv, and Anne hits a home run.

We met with folks at Adam Teva V'Din (Israeli enviro advocacy org), Hiriya Recycling Park, and the Waste Forum at the Porter School/Tel Aviv University. Anne was the keynote speaker at the Waste Forum, which was held in a class room that was filled to capacity. In attendance were representatives from industry (MAI), government (Israeli Environmental Industry), environmental advocacy (Adam Teva V'Din), and other waste management professionals and academics. Anne's presentation served as a catalyst for a robust discussion by the other attendees on the implementation and enforcement (or lack

thereof) of Israel's electronic waste law. The Forum's organizers commented that this was the most lively discussion they have had in the last 2 years (when the Forum started). Anne concluded with a number of insightful observations of the discussion, despite having all of the discussion translated for her from Hebrew.

Afterward, we had a sense that the level of the robust, yet constructive dialog, might lead to meaningful progress in the implementation of Israel's e-waste law.



Nov 2, 2016

Anne and Peter were on a quest to better understand the Israeli electronic waste industry. We arranged to visit one of the two electronic waste recyclers accredited under Israeli law. It was a long drive - several hours north of Jerusalem - and we arrived stiff and tired from sitting in traffic. What we saw, though, thoroughly energized us. ECommunity (<http://www.ecommunity.org.il/>) not only operates a computer waste recycling business, but it is robust social enterprise training/employing 70 special needs adults. The employees come from all walks of Israeli life, including apx 20 Palestinians, and they get trained in all manner of computer disassembly, reassembly, repair, and "up-cycling". Once they get fully trained and certified, they will get placed in industry, or remain at ECommunity, as they choose. While ECommunity is the smaller of Israel's two electronic waste recyclers, and they only handle computers, it

is a model for how social enterprise companies are able to provide meaningful work to special needs members of the larger community, and provide an important service (recycling).

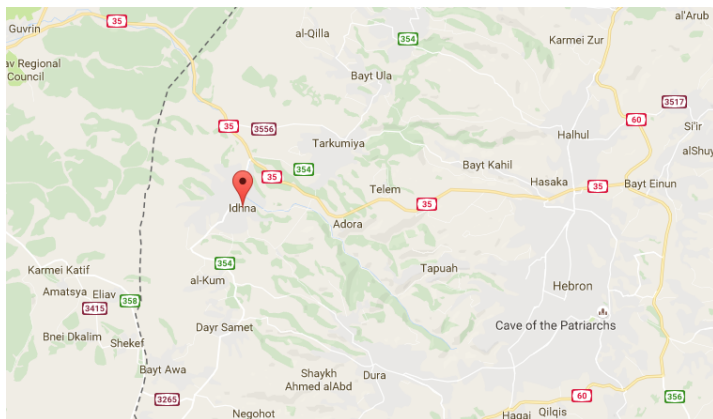
We had two other significant stops today - Dr. Yinon Rudich (Weizmann Institute) [no photo], and Dr. Shmuel Brennen (Aravah Institute - but we met him in Herzliya). We came away from both of those meetings with new ideas on possible options to address the West Bank electronic waste issues. We will discuss these ideas with our NGO partners tomorrow.



Nov 3, 2016

Today SIPP put on a workshop in Idhna, which led to a lively discussion among the government officials (including the PA Environment Ministry), academics, industry (2 small e-waste processors), an Italian NGO, and others - there were approximately 60 attendees. Idhna is a Palestinian village just west of Hebron. As Anne was giving her presentation, it was simultaneously translated in Arabic, and her presentation was frequently punctuated with questions. Afterwards, Anne and I met with the two NGOs hosting us to identify next steps to facilitate a deeper understanding of the concepts Anne described, and to move both Israeli and Palestinian societies closer to the health and safety standards followed by EU countries.

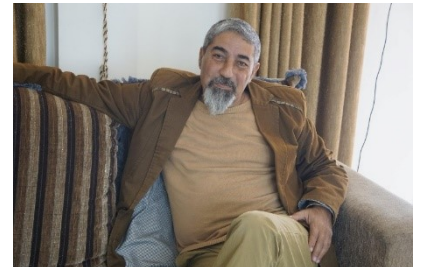
Anne flies home tomorrow while Pete has a fairly full meeting schedule on Friday, Sunday and Monday - mostly related to the Kidron Valley/Wadi Nar project.



Nov 6, 2016

Took another trip into the West Bank to 1) see (and smell) the Kidron/Nar in its polluted grandeur; and 2) see the progress being made on the constructed wetlands at a school in Al - Ubeidyeh. Ubeidyeh Mayor Suleiman Abdullah al-Asa drove us to the school hosting the future wetlands. The project is adjacent to a boy's 7-12 school, which is next door to a girl's 7-12 school. The girl's school is utilizing a biodigester to turn compost into natural gas. The construction of the wetlands is still early. A large sewage holding tank appears to be near completion and the wetlands area itself has yet to be graded and lined. Mayor Suleiman is also trying to raise funds to create another constructed wetlands apx 3X larger which would collect sewage from 1500 residences. This sewage treatment system is needed to treat the sewage that is believed to be polluting the cisterns at the Mar Saba monestary. The Kidron/Nar itself is, as expected, dirty and smelly. It was flowing at a good clip. The estimated flow is apx 16 million cubic meters/year. Many thanks to Muhammed, who was my guide for today's visit.

Kidron/Nar "river" - highly polluted from untreated sewage generated by Israeli and Palestinian communities.



Nov 7, 2016

At the airport and heading home. This has been a fully programmed visit, perhaps overly so, and has reinforced my sense that good work is being done by well-meaning people on both sides of the political (and physical) divide. It is an understatement to say that much work needs to be done - and yet we have shown that with good contacts in Israel and the West Bank, we have been able to bring policy makers to a higher level of understanding and we are confident that we can make a real and concrete difference moving forward. Much work can be done.

I met with Richard Laster and Colombine this morning (separately). Richard provided an update on everything going on with the Kidron/Nar project, and Colombine described the work Shurook is doing both in the West Bank and Gaza. Over the next few weeks, we need to digest the information we gathered and identify specific actions SIPP can take to help move the various projects forward. Some of these actions - connecting people to each other in our expanding network - is already happening and is already bearing fruit. Other work, such as encouraging both Israelis and Palestinians to adopt international electronic waste standards is a work in progress.

