Exploring Water Patterns in the Middle East

Water Issues in the Middle East
Society, Environment, Religion: Listening to the Voice of Civil Society

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International Workshop
Draft Report

WORKSHOP SYNOPSIS

The April 2007 workshop in Prague, entitled "Water Issues in the Middle East - Society, Environment, Religion: Listening to the Voice of Civil Society," provided a space for NGO representatives to discuss and debate their role and vision with regard to water in the region. During the workshop, participants took on issues of administration, development, technology, ethics, rights, funding, regional cooperation, and strategy. The workshop also gave opportunities for building partnerships and concluded with a set of recommendations.

The workshop was structured around an introduction, two sessions and a public roundtable. While the introduction served the participants by providing time for presentations on their respective organizations, the first session directly addressed major water administration and development issues. In a special unit, Forum 2000 representatives introduced the conception of the *Gaza Solar & Water Power* project and the subsequent second session focused on the intriguing question of whether there is a specific ethos of water in the Middle East. Finally, during a public lecture, participants offered up approaches to fighting aridity in the region and answered questions from a broad audience. After the discussions, participants met for a closed session to put down a list of conclusions and recommendations for non-governmental organizations in the Middle East.

The event was organized by the Forum 2000 Foundation in the framework of its "Exploring Water Patterns in the Middle East" project and with substantial support of the Czech Ministry of Foreign Affairs and Coca Cola Czech Republic.

PARTICIPANTS

Murad Bino, Inter Islamic Network on Water Resources, Jordan

Shaul Manor, Peres Center, Israel

Isam Sabbah, Galilee Society Regional Resource and Development Center

Jan Šnaidauf, Forum 2000 Foundation, Prague

Robin Twite, Israel/Palestine Center for Research and Information, Israel/Palestine

Opening Remarks

Oldřich Černý, Executive Director of the Forum 2000 Foundation, gave the opening remarks. He stressed Forum 2000's commitment to ameliorating water issues in the Middle East and introduced the work of the Foundation.

Jan Šnaidauf, Project Coordinator of Exploring Water Patterns in the Middle East (EWaP) project, delivered a brief presentation on EWaP and its accomplishments to date. Because of the complexities of water in the region, the project has set out to map the underlying patterns of water issues in the Middle East. EWaP examines the interplay of technology, religion, politics, environment, and society within Middle Eastern water issues. It aims at sharing of know-how, experience and opinions among all stakeholders; delineating a clear picture of the issue in order to identify steps toward progress; and finally at the formulation of a plan for concerted action by all stakeholders. Šnaidauf expressed Forum 2000's belief that "the struggle for a resolution of water issues may lead to a wider, greater positive development in the Middle East." He added that "we consider ourselves to be non-biased, impartial and we believe this is a precondition for getting involved in the region and the issue."

Introduction: Points of Departure

On behalf of the Peres Center, **Shaul Manor** thanked Forum 2000 for inviting him to Prague. He noted that oil galvanized the 20th Century, and predicted that water will do the same for the 21st. The Peres Center's mission is to build peace in the region through social development and cooperation. The center adheres to a set of peace-building principles: identification of common interests; partnerships between strategic actors; communication within the region; facilitation of projects; integration of all sectors of society; study of lessons learned.

Manor spoke on the Culture of Water, an initiative that emphasizes cross-border research and cooperation on water and agricultural issues. The Culture of Water initiative housed within the center's agricultural department, the Andreas Agricultural Development Trust. To begin, Manor asked how states in the region should cope with salinity problems. "If you can't fight it," he said, "then live with it." Living with saline water and soils requires innovative approaches. Hence, the Peres Center develops and proposes new ideas for research and implementation. The center's work capitalizes on saline water resources in Ramat Hanagev, Jordan Valley and elsewhere by identifying "appropriate options for agricultural development." The Culture of Water initiative, in partnership with Ben Gurion University, has marked success in growing tomatoes, leafy vegetables, olives, apricots, loquats, citrus, and olives in arid environments.

Manor focused his discussion on halophytes, which are organisms that thrive in saline environments, as an area of research with promising economic benefits. *Salicornia*, for example, is a leafy vegetable that grows in salt marsh ecosystems and are exported to Europe, especially France. Manor reviewed other projects where vegetables and tomatoes are grown in water ten times as saline as potable water

and showed pictures of olive trees growing in the desert with the support of an efficient water system. The final goal, in his view, is to share innovative and best practices with the region and the world. Through distance learning, the center will share their successful techniques with farm communities in Israel, Jordan and the Palestine Authority.

Discussion:

Twite - How long have the programs in your presentation been running?

Manor - The programs have been running since 2000. Also, an important part of these programs is the sharing of know-how. We bring farmers to farmers, with no intermediary.

Bino - The research you are doing on halophytes is very interesting. I would like to see more cooperation in that area. There is a NGO in Dubai doing similar work. When more scientists work in the same area they are more likely to find solutions. It boils down to the fact that you have to find ways to bring scientists and farmers together to share information.

Manor - Sharing information is one of the immediate results of, for example, this Forum 2000 event. It should also be brought to people's attention that there is a *fatwah* that allows for the use of wastewater.

Bino - The *fatwah* makes clear that it is possible to re-use wastewater, but it depends on the method of usage.

Isam Sabbah expressed his gratitude toward Forum 2000 and his pleasure at being able to represent the Galilee Society Regional Resource and Development Center. The Galilee Society "strives to achieve equitable health, environmental and socio-economic conditions for Arabs in Israel." The organization was founded in 1981 and is the "largest and longest-standing Palestinian NGO in Israel." In the past 20 years the Galilee Society has transitioned from promoting to producing technologies. The Galilee Society tries "to offer low-tech approaches to low-development areas." More than 80 percent of the Galilee Society's financial resources are sequestered for water projects.

Sabbah trimmed his discussion to an exposition of the Galilee Society R&D Center, which specializes in research related to biotechnology. "The R&D Center was established to achieve economic benefits by employing scientists and engineers residing permanently in the Galilee," he said. The center implements wastewater treatment technologies, educates youth and publishes articles. The center has completed five regional cooperation projects in the past decade and is now spearheading a regional project involving several universities and the Royal Scientific Society of Jordan, which will study, design and build a facility for treating oil mill wastewater.

A second project, the Appropriate Technology Consortium (ATC), aims to fight groundwater pollution in rural areas by establishing "low-cost, efficient, and replicable wastewater treatment and reuse systems in rural areas." ATC builds

wastewater facilities in Israel, Palestine and Egypt as well as training capabilities and resource centers for municipalities.

Discussion:

Twite - How does your work on the Dead Sea connect to what Friends of the Earth Middle East and other groups like MERC are doing?

Sabbah - The Dead Sea project is not related to the Red-Dead Sea Project; it's about errant systems, arid regions and climates.

Robin Twite of the Israel/Palestine Center for Research and Information (IPCRI) recalled his personal history about how he became involved in water issues in the region. Talking about IPCRI, he said it was unusual because it was administered by both Israelis and Palestinians, having been founded by a New Yorker who felt that the only way for Israelis and Palestinians to live together was for them to work together. IPCRI was founded in 1988 and is financed by grants and funds from large sources, i.e. USAID and World Bank.

IPCRI's water project is called Optima and involves seven countries. "The objective is to look at and compare different work, and bring scientists together." IPCRI performs scenario writing, which analyzes scientific work and "turns it into something that is readable." Twite clarified that IPCRI is a think tank; it does not produce technology (He praised Friends of the Earth for their practical accomplishments). Instead, the aim is to build up a community of professional people who are aware of each other's needs and influence policy. He also referenced GLOWA (Global Change in the Hydrological Cycle) project coordinated by the Department of Plant Ecology of the University of Tübingen, Germany, as a model for other international initiatives. Twite mentioned the beginnings of his organization in 1994 when it organized three conferences called Our Shared Environment.

Murad Bino of the Inter-Islamic Network on Water Resources (INWRDAM) gave the fourth presentation and described INWRDAM as focusing on water efficiency and use, shared experience, training, event organizing, and gender issues, especially the role of women in water management. Bino discussed INWRDAM's interest in simple grey-water systems for houses, and their long-term payoffs. The cost of a single unit is around USD 350 and, according to him, research shows that every dollar of investment brings a return of 3 dollars in savings. He warned, however, that grey-water systems are more "difficult" to manage in urban areas. He also discussed high-level treatment facilities.

"INWRDAM believes that Islamic concepts of water could be very useful for engaging the public," he said. "INWRDAM believes the Middle East is an area where water can be a detrimental factor for success or conflict."

Discussion:

Twite – What is the attitude of INWRDAM towards the expertise in Israel? Does INWRDAM want to share that experience?

Bino - Scientists know what is going on in the world. INWRDAM is the only organization where Israel works with Jordan, while Turkey and Syria are also members. I think INWRDAM could ease tensions in many ways.

Session 1: Position of NGOs in Administration and Development of Water Sector

Jan Šnaidauf summarized the participants' presentations and opened the floor for a discussion on administration and development of the water sector.

Isam Sabbah spoke first to the issue of NGOs in Palestine. Palestinians established NGOs to fill in the gaping absence of government bodies. "As a result of the socio-economic situation in the Arab community," he said, "the NGOs primary work has to be community work, i.e. change on that level as well as collaboration and networking."

Robin Twite began by discussing regional NGOs. "There aren't very many NGOs that make a point of working across borders," he said. "But there have to be links. We have to know each other even if we don't have good relations with each other". Twite qualified that regional NGOs do have influence, but not enough to make necessary changes. "They are good for skirmishes," he said. "They are very useful because they raise questions and publish books. Israel has, on the whole, a well developed NGO sector. NGOs in Jordan are somewhere between Israel and Palestine, being slightly more influenced by government." He continued by saying the NGOs need more funding and they need to know how to present their ideas.

Šnaidauf asked whether NGOs should act as protectors against abusers of the environment and what is the participants' view on the situation in Jordan and Palestine.

Bino said that Jordan began to develop its NGO sector in the 70s. All NGOs need some tools to be successful. They also have to be helped in order to effectively address their objectives. He cited the Global Environmental Fund (GEF) as one source of such aid and expertise.

Manor noted that the trend is toward dealing with direct, face-to-face work, e.g. with farmers, because NGOs can do it more efficiently than governments. Through trade and management associations, NGOs can reach and aid the practitioner.

Šnaidauf suggested that some people would argue that the private sector is even more effective than the NGO sector. "Where, then, is the NGO position in such a scheme," he asked.

Sabbah responded by noting the steady decrease of funds to NGOs. "The private sector is attractive because of salaries, whereas it is important to have the board of

the NGO be made up of volunteers. Nonetheless, many of the things concerned can be done better by the private sector," he said.

Manor argued that private sector involvement in the public sector should be controlled by NGOs and government.

Twite described the example of a personal small-scale solar scheme. He stressed the problem that companies do not want to support losing schemes even if there are NGOs that want to put into effect. The private sector must first be convinced that a project is financially lucrative."

Bino pointed out that water in the region's countries is public property, so the government has the right to issue management licenses. The NGO, then, can assess whether services are reaching the poor or needy. The point is that NGOs should be helped and educated to be effective.

Twite explained that NGOs must compete against each other due to a lack of funds. For this reason it can be difficult for NGOs to cooperate with each other. He added that "young people need to get involved, and not enough thinking is done as to how to get them involved."

Sabbah speculated that the private sector companies would not welcome NGOs to participate in some projects because NGOs – in their view – complicate work and confuse priorities.

Manor suggested water recycling as one area for private sector involvement. At present, the private sector is essential for build-operate-transfer schemes (BOT): the company updates the technology, improves the efficiency and sells the water to the community. But after a contracted period the company transfers the operation back to the public sector.

Šnaidauf asked whether the sale of water is problematic in the Islamic environment.

Bino replied that the concept of selling and trading water is generally allowed in Islam.

Twite added that it is rare for NGOs to perform administration in the long term; the Palestinian case is an exception to the rule. Typically, NGOs deal with the public, new ideas and advocacy. "They should not get into big ventures," he said. "I do not want to see an NGO running a desalination plant."

Bino agreed and added his opinion that NGO involvement in profitable projects goes against their fundamental mandate. He also noted that there is a difference between BOTs in the water sector and other sectors. While water is local and limited so that more control is possible, other things like cement can always be bought elsewhere if there is no local source.

Manor added that the government's role as a guaranteed buyer of the water supply secures the financial position of the private company.

Bino raised issues of delivering water, subsidies and loans.

Šnaidauf asked whether the price of water should be kept affordable for the poorest farmer.

Twite believed that it depends on which community is examined. "Some farmer groups are quite powerful and exaggerate the need for subsidies. Others don't get enough," he said.

Manor expressed his conviction that farmers and government can make agreements on price.

Bino said that bringing water to the poor to fill basic human needs should be secured by the government. Other customers, such as hotels and resorts should pay the real price of water.

Šnaidauf brought agriculture into the discussion of water. "Is it more important to get new sources of water or to restructure consumption patterns through, for example, reducing agricultural production," he asked.

In response, Manor offered the case of cotton. "We grow cotton in Israel, but it doesn't make sense to irrigate water for cotton when we are water stressed. It's better to import. The trend is toward more concentrated growing areas in greenhouses because this allows for the more efficient use of water. When you do this you have to change the crops you grow. Furthermore, you have to exchange water with the city. Give more freshwater to the city and use wastewater in the fields and greenhouses. And this allows the production of agriculture to remain stable," he said.

Šnaidauf then asked whether high-technology equals unemployment for farmers and whether this was the way to go.

Twite replied that though high technology is not beneficial for all it is the correct approach. From his viewpoint, subsidized farming is bad for everyone.

Manor argued that by including more scientific minds in research, the gap between ideas and implementation would decrease. He said that "if all the know-how was implemented the end would be incredibly good. The way to achieve this is through distance-learning and the Peres Center is interested in promoting this approach."

Šnaidauf steered the conversation to the merits of low-technology. He asked the participants to consider the incentives of promoting low-tech and elaborate on its benefits -whether or not they are purely financial.

Bino noted that INWRDAM also promotes low-tech solutions.

Twite said that low-tech is just one of many approaches that should be utilized. But low-tech is implicitly designed for small rural communities and NGOs have to think creatively about how to keep these communities going. He then turned to issues of regional representation. "Also, there has to be some overarching body where the biggest NGOs can find representation and express their concerns," he said. "This is a role for an outside body, so you can go beyond local politics."

Sabbah spoke to the practicality of high-tech and the right to water. He said that governments could force industry to use high-tech, because it has the resources to do so. For domestic use, a maximum per capita use per day should be fixed for the whole region so that, importantly, equal water for all people in the region would be guaranteed, since most of that water comes from shared resources. "You can limit water use and then consider the alternatives such as wastewater technology (Israel is a pioneer in using wastewater in agriculture). So let us increase public awareness of wastewater use in agriculture," he said.

Bino disagreed with Sabbah over the principle of equal consumption for all. "It is not practical," he rejoined and continued that "domestic water is returned; it is not all lost, whereas agricultural water is lost to the ground and air. Jordan is behind Israel in technology, but not in irrigation." Then he turned the conversation to the Forum 2000 Foundation. He recommended that the foundation "take the initiative to bring people together," but he advised that "there are different levels and you have to find the right people. There are people who need to know the good side of the story."

Sabbah said that the Galilee Society emphasizes low-tech as a suitable option. "It's about appropriate technology for appropriate areas," he said. "It's not easy to make a centralized water system for rural areas because many villages are too small and too far apart, so you have to use *in situ* low-tech systems to solve the problem."

Special Presentation: Project for Gaza

Jan Šnaidauf delivered an overview presentation of **Solar Water & Power Source for Gaza**, a future-focused vision based on solar energy technologies and seawater desalination. The project is mainly promoted by Trans-Mediterranean Renewable Energy Cooperation (TREC) of Hmaburg, Germany, coordinated by Dr. Gerhard Knies. Forum 2000 provides a space and a platform for this initiative that aims to enhance energy, water and general security in the MENA region.

The implementation of the project could in the long run dissolve conflicts over water and energy between Israel and the Palestine Authority. It is believed it could also provide an opening for improved political relations, strategic energy infrastructure, ecological stability, and opportunity for the world's religions to work together.

The project proposes solar thermal power and desalination plants for Egypt's Sinai Desert, which would provide renewable energy and potable water for 2 to 3 million

people in Gaza. To meet projected demand, solar power collectors would cover 50 km^2 of desert. An initial analysis prescribes USD 6 to 7 billion of investment capital. The whole project could be built within roughly 15 years and incorporate advances in technology. Investment in the Gaza Solar Water & Power Source would lower the cost of solar and desalination technologies for future use in the region.

Gaza and Egypt as well as Israel, Jordan and both MENA and EU regions as a whole would reap benefits from the project. The second stage of the project will unite EU-MENA around a single energy grid delivering "energy and climate security from 2020 on." An investment proposal for the project calls on beneficiaries to create a Gaza Recovery Agency GARAGE. Donors would include private investors, MENA and EU states, World Bank, Arab Development Bank, the Middle East Quartet etc. The agency would offer "long-term purchase agreements for power and water attractive to potential investors," and sell water and energy to Gaza consumers. The GARAGE could potentially become a MENA-wide development agency.

Discussion:

Twite - Who is going to pay for this project?

Šnaidauf - It would have to be an international group of donors associated in a body (see the above indicated agency). This project is comparable to the Red Sea-Dead Sea project in scope and price.

Twite - There is a problem dealing with the Egyptian side, which is unlikely to give up the land and all the energy to the Palestinians. They will have to gain something for themselves. EWaP and its partners will have to offer the Egyptians something; otherwise they will never act on the proposal.

Šnaidauf - The project as it has been proposed foresees many benefits for the Egyptians. They will be offered several incentives, such as manufacturing of a major part of the equipment, which can take place in Egypt. They will also have management and technical control of the plant. Furthermore, the solar panels built ca. 2 meters above the ground will shade the desert, so it will become possible to use the area for agricultural purposes. The Egyptian Embassy in Prague has been informed and it forwarded the proposal to Cairo.

Twite - The technology is improving all the time, but it is a lifetime of work.

Šnaidauf - There is a plant in California, so the technology is already in use on a large scale.

Twite – Bureaucratic obstacles in Egypt and elsewhere will require Forum 2000 to work intensively and at a high level.

Session 2: Ethos of Water in the Middle East

Murad Bino gave a brief presentation on an Islamic perspective of water and ethics. He cited *Water Management in Islam*, a book he edited along with Naser I. Faruqui and Asit K. Biswas, as the main source for his talk. He stated that he would try to relate water to the socio-cultural aspects of the community. Islam, he said, is a "way of life" that includes an "eco-cosmic world vision for humanity and nature." Humanity and nature should strive toward harmony, since "nature is harnessed for the benefit of humanity."

Bino repeatedly displayed quotes from the Koran to reveal messages of conservation, balance between man and nature, decentralization, and social responsibility. He discussed shared water resources and wise consumption in the context of Islam. "I am not an Islamic expert in any way. But I do believe that we need to take the lessons from the source. Engineers need to learn the concepts behind their technologies and approaches." He showed that Islam calls for transparency and good will (Ihsan), civil participation (Shura) and quality assurance (Hisba). He added that water is allowed to be used for development regardless of quality.

Bino concluded with a slide of Islamic principles related to water: water is a social good and belongs to the community; the first priority for water use is access to drinking water; humankind is the steward of water on earth; the environment has a legitimate right to water; water conservation is central in Islam; water management requires consultation (Shura); full cost recovery is permissible for the provision of services; wastewater reuse is permissible (fatwa, 1978).

Discussion:

Šnaidauf - Has any investigation like this one been done from the point of view of Judaism?

Twite - One scholar did something similar to what Mr. Bino has done here and he came to similar conclusions.

Šnaidauf - How would you, the participants, explain your tradition with water?

Manor- I would say that water is short and so everything one does is to overcome that shortage. The solution is to develop the required technology and apply it in industry and elsewhere.

Twite - Water appears everywhere in religious and literary traditions. I don't think it's really a Middle Eastern phenomena.

Šnaidauf - But water is a big issue specifically for the Middle East. Therefore, water's appearance in the humanities is significant.

Twite - Ordinary people recognize that water is important. That is a good thing.

People are very atavistic about water because they know it's important.

Šnaidauf - What do the participants think about water as a source of conflict in the Middle East?

Sabbah - It's not only in the Middle East, as water conflicts occur all over the world. Water is life. We need to manage the resources jointly. This can decrease the chances for conflict.

Twite - Water is connected to baptism. It's a very old tradition, and not just a Christian one.

Public Discussion: Water and Drought in the Middle East – Solutions in the View of NGOs

Jan Šnaidauf welcomed the audience and introduced each participant. He first gave the floor to Shaul Manor.

Manor spoke on the Peres Center's agricultural department, the Andreas Agricultural Development Trust, where water is a focus of research and funding. He also mentioned a special project called Culture of Water. "The question is what to do with saline water," Manor emphasized. "It's an environmental issue, to which we have to find a solution. The solution is to utilize halophytes, i.e. plants consuming saline water. The main objective of our research is to identify those species that give us an economic value." Such an achievement can then be shared with other countries. The solution would be to find a new "cash crop" adapted to local conditions.

Murad Bino described INWRDAM as a non-profit, non-political organization partnered with 17 countries in the region. "All these countries," he said, "recognize the water scarcity within their borders. To solve the problem we need to work together to avoid conflict." Bino gave the audience a detailed picture of the role wastewater can play in the region. He stressed wastewater as an important source for use in agriculture and also to recharge aquifers. He pointed out that some poor communities cannot afford water treatment and that wastewater from the city is secure and steadily increasing. Even the private sector is interested in using and selling wastewater.

"We are saving freshwater for more efficient use. We are also preventing groundwater pollution because the grey water does not end up in a septic tank," Bino said about their approach. By means of 10 scholarships every year, INWRDAM supports young researchers in developing countries, who work on solving water issues. Commenting on the methods used he said that "we look for short-term solutions and long-term solutions. For the longer term we have to develop technologies that will give us new sources".

Robin Twite delivered an extended speech on IPCRI and its approach to working in the region. IPCRI is run jointly by Israelis and Palestinians, and it is funded through foundations. It deals with some of the final-status issues, i.e. problems to be resolved before there can be a peaceful settlement. "One of the issues is water. If people work together on issues that are a part of their survival they will learn to live together. What we are trying to do is make a water community," he said.

Twite suggested that overcoming water scarcity itself may not be the greatest challenge facing the region. Rather, the lack of trust and partnership in the region is the real fetter to progress. "Unless these problems are solved collectively they will not be solved at all. One of the biggest difficulties is fear and distrust, because there are very deep suspicions. That requires a lot of work. Although the region is small, traveling around it is hell. Although there is money and technology, things are not getting done. That's because there isn't trust between communities," he said. "Water is psychological. If you don't see and feel water, then you're destroyed as a human being," Twite concluded. He then sang several verses of "The Water is Wide" to great applause.

Isam Sabbah presented the Galilee Society's R&D center. He noted that two out of the three treatment plants in the Gaza strip are not working and that 30 to 35 percent of the population is not connected to the sewage system in the West Bank. These are challenges that must be urgently solved, according to him.

Q & A:

Audience - In your view, what is the inter-relationship between desalinated water and energy?

Bino - Energy is not the main cost of the desalination of water. The cost of 1 m^3 of desalinated water has dropped ten times in terms of energy. The necessary membranes and other technology raise the costs.

Manor - The cost of 1 m^3 depends on the size of the respective plant. Israel has completed the largest plant in the world and the cost has dropped to half a dollar.

Šnaidauf - In what regard are the stronger countries helping the weaker countries in the region?

Twite - It is, for instance, education and joint projects. We spoke about the Friends of the Earth's project called Good Waters Make Good Neighbors, which brings water education to schools. The aim is to have Israeli children and Palestinian children work together.

Audience - I work for a Czech company that has contracts dealing with water resources in the Middle East region. What is the situation of these plants that deal with salty water and are they available for use in other countries?

Manor- The Peres Center has developed one such plant and is working on others.

These plants and research are for the public and not just for our sites alone.

Šnaidauf - How can we here contribute to solving water issues in the Middle East?

Bino - INWRDAM developed low-cost technologies for commercial use. But we think that there is a good opportunity for a Czech firm to come in and do the work.

Manor- This event is one great contribution.

Jan Šnaidauf concluded the session and thanked the audience, participants and partners for their support.