



Exploring Water Patterns in the Middle East

Linking Technology, Business and Politics in the
21st Century to Fight Aridity and Shape the Region's Future

A YEAR ON

Looking Back, Thinking Forward

Project Overview
5 April 2007

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1 Background and Origins

1.1 Inception of the Idea

The Forum 2000 Foundation has been focused on the situation in the Middle East since its Annual Conference in 2000. At that time, *Václav Havel*, President of the Czech Republic, *His Royal Highness Prince Hassan bin Talal* of Jordan and *Shimon Peres*, Minister of Foreign Affairs of Israel, jointly issued a declaration supporting the peace process and decided to send a special envoy from the Forum 2000 Conference on a "fact-finding mission". His task was to assemble the opinions on the peace process expressed by both sides of the conflict and prepare materials for a high-level roundtable on the Middle East at the 2001 Annual Conference.



H.R.H. El Hassan bin Talal of Jordan, initiator and patron of the project.

The "fact-finding mission" materialized on September 10-13, 2001, in the persons of *H.E. Karel Schwarzenberg*, Member of the Board of the Forum 2000 Foundation and the contemporary Foreign Minister of the Czech Republic, and *Ivo Šilhavý*, representative of the Office of the President of the Czech Republic. During the mission they visited Jordan, Israel and Syria, where they met senior politicians and government officials including *HRH Prince Regent Faisal bin Talal*, *Zijad abu Zijad*, Palestinian Minister for Jerusalem; *Ehud Olmert*, Mayor of Jerusalem; *Abu Ala*, Chairman of the Palestinian Parliament and others.

The envoys came to the conclusion that Forum 2000 could provide a useful platform for an informal discussion among the stakeholders in the peace process and recommended the organization of a roundtable discussion. This event, entitled "*Middle East Peace: Strategy or Tactics?*", took place at Prague Castle on October 16, 2001. It was attended by *Václav Havel*; *HRH El Hassan bin Talal*; *Shimon Peres*; *Yohei Sasakawa*, President of the Nippon Foundation, Japan; *Rabbi Albert Friedlander* of the Westminster Synagogue in London; *Manuel Hassassian*, Executive Vice-President of Bethlehem University, Palestine; *Matti Wuori*, Rapporteur for Human Rights in the World of the European Parliament, Belgium; *Karel Schwarzenberg* et al.

Since these events the Forum 2000 Foundation has maintained a special focus on developments in the Middle East, and particularly with respect to Israeli-Palestinian relations. Water resources were one of the five areas that became a subject of the multilateral talks. As a member of the workgroup on water resources, the Czech Republic took an active part in the deliberations over this problem. Later, an incentive came from *HRH El Hassan bin Talal*, which indicated that water in the Middle East was an area where a platform for discussion and facilitation would be of great use. With all these factors combined, the Forum 2000 Foundation took up the

issue in 2005 as a long-term project. The outcomes of its one-year existence are presented in this document.

1.2 Significance of the Issue

The problem of scarce water resources has been key to the development of the Middle Eastern region. Due to specific conditions on the ground, water has also become a matter of international relations with vital implications for security, economy, society and the humanitarian situation. Thus it bears importance even beyond the regional borders - for the neighboring countries, Europe and the world as a whole.

If a brief assessment is done, the following observations appear to be characteristic of the regional water resources situation:

The Middle East is an extremely arid region, where 5% of the world's population is matched by only 1% of freshwater resources. It has low and rather unpredictable rainfall. Virtually all the available water resources have already been utilized to the maximum extent in the last years and decades, including building dams, drilling and pumping of groundwater and seawater desalination. Even non-renewable resources (e.g. some ancient aquifers) are being exploited. Besides, a sizeable part of acquired freshwater suffers from quality degradation as a result of pollution. Consequently, **innovative approaches and technology are crucial** to improve the water situation in the region.

Furthermore, major water resources have a trans-national character such as groundwater aquifers and river streams running across state borders. More than 50% of the total population is dependent on such resources. Thus water supplies are also a **subject of the region's international relations**.

Thus, in dealing with Middle Eastern water resources, a high level of complexity is needed. The wide variety of aspects to be addressed includes: demographic growth, food self-sufficiency, increasing consumption by industry and tourism, inefficiencies of agriculture, consumption patterns, political tensions, existing conflicts, climate change, economic regulations of water sector, lack of FDI, institutional framework, inter-state cooperation, religious and traditional repercussions concerning water, social impacts, environmental strains, and many others.



Fields in Jordan decimated by severe drought. 1999

If there was no advance in solving these issues and if the worst scenarios materialized then the region could face a **large-scale humanitarian catastrophe** eventually leading to open conflicts, economic breakdown and worldwide destabilization.

1.2.1 Particular Threats to Peace and Stability

Years ago, especially in the early nineties, predictions were made that a shortage of water would soon evolve into a severe regional crisis. The rationale for these fears rested upon the facts of rapid population growth in Arab countries (of ca. 3% annually), extensive industrialization programs and generally the increasing water consumption due to economic growth, tourism, etc. That combined would inevitably lead to wide-scale instability.

Fortunately, this view has not proved completely true. While there were not many possibilities for significantly increasing water supplies, much could be done regarding the existing consumption patterns: **industrial, commercial and domestic users were using only a minor share** of the resources, the rest being consumed by agriculture and particularly the irrigation systems. Therefore, a decrease in agriculture's consumption alone – either by decreasing the production or by boosting the efficiency – is able to counteract imminent threats of water shortage in vital areas. That may, on the other hand, damage the agriculture system itself. More importantly, though, it is in contradiction to the policy of food self-sufficiency, promoted until recently by some of the partner countries' governments. These policies are domestically highly sensitive, which is where issues connected to water notably acquire a **political dimension**.

Secondly, it was argued that the scarcity of available water would lead to **serious international tensions** and eventually armed conflicts. States viewing sufficiency of water as a crucial precondition for their future development would not shy away from defending their interests even by force. The situation was to be further escalated by climate change forecasts detrimental to water resources. Although the former came partially true and showed itself in chronic tensions between Syria and Turkey and – to a lesser extent – in Israel-Jordan and Egypt-Sudan relations, an open conflict has so far never materialized. Nevertheless, the threat is still looming and anxiety remains.

1.2.2 Challenges and Opportunities

Several points can be listed as particular challenges and/or opportunities in the field of securing water resources in an arid environment and under the conditions prevailing in the Middle East. Divided according to the respective realm, they include the following:

- *Technology and development*: decreasing water consumption by agriculture (irrigation systems, different arts of crops, distribution systems, self-sufficiency concerns); decreasing costs and environmental implications of desalination; exploring methods of massive long-distance water transportation; developing possibilities of wastewater reuse; studying meteorological forecast systems;

improving the technology of alternative energy sources (such as concentrated solar power);

- *Politics and administration*: tuning up the legal framework; efficiently designing national and local water management authorities; observing water market developments; water resources monitoring; scanning consumption patterns; linking water policies to agriculture and other sectors; facilitating trans-area and trans-border consultations of authorities (knowledge and data sharing, joint modeling); raising public awareness of water resources' central importance;
- *Business opportunities*: dozens of state or private-sponsored projects in the water sector; modern hydrological equipment; specialized computer technology and equipment (water databases, information dissemination); manpower training; the currently booming wastewater segment; industrial no-water-use appliances; great opportunities resulting from private-public partnerships.

1.3 The Organizer

The Forum 2000 Foundation was established in 1996 as a joint initiative of President Václav Havel, Japanese philanthropist Yohei Sasakawa, and Nobel Peace Prize Laureate Elie Wiesel. Since 1997, the foundation has organized nine annual Forum 2000 Conferences that have attracted a number of prominent thought leaders, former and current political leaders, business leaders and other individuals, whose common denominator is experience with bearing substantial responsibilities and accountability. In addition to the conferences, several specialized projects provide opportunities for the exchange of knowledge, experience and perspectives to promote the Foundation's mission. H.R.H. Prince El-Hassan bin Talal, Frederik Willem de Klerk, Bill Clinton, H.H. the Dalai Lama, Hans Küng, Shimon Peres, Mario Soares, Hana Suchocká, Sergey Kovalyov and Madeleine Albright are a few of those who have attended Forum 2000 events.



Annual Forum 2000 Conference, Prague, October 2006.

Forum 2000's goal is to identify the key issues facing civilization and explore ways in which conflicts based upon religion, culture, or ethnicity can be prevented. It provides a platform to openly discuss these vital topics and to enhance global dialogue. Through its activities Forum 2000 also promotes democracy in non-democratic countries, civil society, respect for human rights and religious, cultural and ethnic tolerance young democracies.

In respect of its rich experience in convening high-level international conferences, Forum 2000 appears well equipped to run the EWaP project. It is meetings of different groups of stakeholders in the issue (meeting within the groups as well as between them) what lies at the heart of the project's efforts and what can lead to substantial improvements in the future. Personal meetings and frank discussions facilitate mutual understanding, which finally translates into agreement.

1.4 Acknowledgements to Partners and Patrons

The project takes advantage of its membership in the **Programme for a Community of Energy, Water and Environment (EWE)**, which comprises an informal network of scholars specializing in water issues, who represent diverse institutions from European and Middle Eastern countries. The key partners within this framework are the *London School of Economics and Political Science (LSE)* and the Jordanian *Higher Council for Science and Technology (HCST)*. Most often, the cooperation takes the form of mutual information, consultation and exchange of expertise. The cooperation has been anchored by a Memorandum of Understanding signed between all three institutions and the Forum 2000 Foundation. The formation of a triangle between Amman, Prague and London appears symbolical as an expression of the bonds between 'old' and 'new' Europe and the Arab-Muslim world (or, rather, Eastern Mediterranean). Moreover, the three are comprised of a governmental, a non-governmental and an academic institution that all have different emphases and priorities. As a result, it is a suitable basis for a fruitful and multi-faceted cooperation.

At the political level, two senior world leaders have provided their support and auspices to the project: **Václav Havel**,



H.R.H. El Hassan bin Talal of Jordan (left) and President Václav Havel (right), the patrons of EWaP, talk with friends.

former President of the Czech Republic, and His Royal Highness Prince **El-Hassan bin Talal** of Jordan, President of the Club of Rome. They also took part in the initial roundtable discussion on 'Water in the Middle East: Prospects for Conflict or Co-operation?' in October 2005. It has been due to their name and support that the project was able to start at all its international engagement and, for now, the linkage to its patrons remains one of the most valuable assets of the EWaP project.

Nevertheless, none of the activities and achievements would have been possible without the generous support offered to the project by two principal donors: the *Ministry of Foreign Affairs of the Czech Republic* and

Coca-Cola Czech Republic. While the Ministry supported the Forum 2000 Foundation with two subsequent grants dedicated to the EWaP project, Coca-Cola provided for the required co-financing. To a much lower extent, the project also received a contribution from GEOTestBRNO, JSC. In a post-transformation environment like the Czech Republic, where donor infrastructures are still underdeveloped, the support by both private and public sources is extremely appreciated. Forum 2000 would like to express its great thanks to the Ministry of Foreign Affairs, Coca-Cola and other donors.

2 A Look Inside the Project

2.1 The Project at a Glance

The *Exploring Water Patterns* (EWaP) project addresses a key problem that is particularly severe in the Middle East, namely water resources. Moreover, it is of crucial importance for the region's neighbors including Europe, since water there has become a subject of international relations with **significant security, economic, social and humanitarian implications**. Dealing with Middle Eastern water resources requires a complex approach. The wide variety of aspects that must be addressed includes demographic growth, food self-sufficiency, ineffectiveness of agriculture, economic regulations of the water sector, institutional framework, inter-state co-operation, among others. If the worst-case future scenarios materialized, the region could face a **large-scale humanitarian catastrophe** eventually leading to conflicts, economic breakdown and worldwide destabilization.



Jan Šnaidauf, EWaP Coordinator, explains the complex approach of the project at an international seminar.

The Forum 2000 Foundation conducts this project in cooperation with its partners based in the Middle East and countries of the European Union. As a whole, it stands under the auspices of *HRH El Hassan bin Talal* of Jordan and *Václav Havel*, former President of the Czech Republic. The project intends to help facilitate a peaceful and sustainable resolution of tensions over water resources in the Middle East, basing on the observation that a synergy is necessary

between **science (technology), business (investment) and politics**. To that aim, the project offers opportunities for meetings among

various groups of stakeholders – representatives of governments and administrations, academics and experts, businessmen and financial officers, or civil society representatives.

The meetings are focused and results-oriented, aiming at collecting and exchanging know-how, experience and opinions in order to create a situation of common understanding. Under such conditions, as an ultimate goal, a plan for concerted action becomes possible, which must be carried out by a joint effort of all stakeholders. Such a development will support **cooperation, stability and peace in the region**.

Since the beginning of the project in late 2005, a series of events took place. They included, on the one side, three international expert workshops in Prague (Czech Republic) and Amman (Jordan) as well as six public roundtables and lectures with discussions. The groups of participants in these events included respected and renowned personalities from all over the world including professors, government ministers, organization CEOs and others. Importantly, on these occasions, representatives of the **regional conflicting parties met at a common table**.

Along with the meetings, a comprehensive *knowledge base* on the issue of Middle Eastern water resources is under construction. The Forum 2000 Foundation perceives Middle Eastern water resources as one of the areas where its activities may help bring the stakeholders and decision makers to an **agreement over a long-term vision for the future**. Thus the foundation will maintain this project as one of its core activities.

2.2 Aims

The project intends to help facilitate a peaceful and sustainable resolution of tensions over water resources in the Middle East, while putting a specific emphasis on the Syro-Palestinian region including Israel, Palestinian territories, Jordan and Syria. Its methodology is based on the assumption that a great degree of **synergy is necessary between the realms of science (technology), business (investment) and politics**. Thus each of these dimensions will be given attention before they are finally integrated into a sole approach. Besides, the impacts of water sector changes on the environment and social systems of the respective countries must be taken into account.

Having stated this premise in general, several observations should be mentioned in particular to justify the statement:

- As already articulated at the first symposium on Water in the Arab World, held at Harvard University in October 1993, an essential part of any solution to the problem must be the understanding of **water as an economic good** and the introduction of a price system. The subjection of the water sector to market principles can efficiently prevent any wasting of resources and direct them to the most needy consumers. At the same time, however, a robust regulatory and **institutional framework** must be constructed to set firm rules and protect some vulnerable elements of the local economies and populations from grave harm.
- **Responsible and sensitive political work** on the part of the region's governments and local authorities is key to achieving those aims and to explaining the necessity of the measures taken. It appears even more important in face of the fact that in Arab Islamic culture, the free availability of water has traditionally been regarded as a vested interest of all. Anyway, the economization of the water sector, even though restricted, is the point where business and investment ventures can jump in. Much has already been done and the currently **booming water markets** are rightfully expected to develop further.
- Hand in hand with that development, **science and research will be greatly challenged** in the on-going process of technological innovation and of coping



Jana Hybášková, Chair of Delegation, European Parliament, listening to Petr Jan Kalaš, Minister of Environment of the Czech Republic.

with the specific conditions of the arid Middle East. That is particularly true given the urgent necessity to combat the increasing **environmental deterioration**, caused predominantly by over-pumping of groundwater aquifers, over-damming of river flows and air pollution due to seawater desalination. Without a determined action, a disaster is looming on the horizon.

- Moreover, in the long-run, dealing with the water situation is likely once and for all to **overgrow the national borders** and so become a matter of or an incentive for a regional political-economic arrangement that might have far-reaching implications.

The project in its entirety aims at collecting and exchanging know-how, experience and opinions among all stakeholders in order to create a situation of common understanding where a **plan for concerted action** becomes possible. The plan must be carried out through a joint effort of local governments, expert forces, international institutions, companies and civil society.

The ultimate objective of these efforts can be described as follows: ensuring rational and fair water distribution, whilst maintaining the principles of equity, prosperity, autonomy and sustainability for and by all stakeholders. Working toward achieving this situation, the project will further support **cooperation, stability and peace in the region**.

Following the above aims, the project will apply a complex, integrative and multi-dimensional approach. This will comprise a **series of workshops** for different audiences with the participation of international experts coming from EU Member States as well as the Mediterranean partner countries. The participation of the latter, along with the choice of places for the organization of the workshops (i.e. part of them in Europe and part in the partner countries), are particularly important for reducing feelings of European patronage and ensuring the sense of **local ownership**.

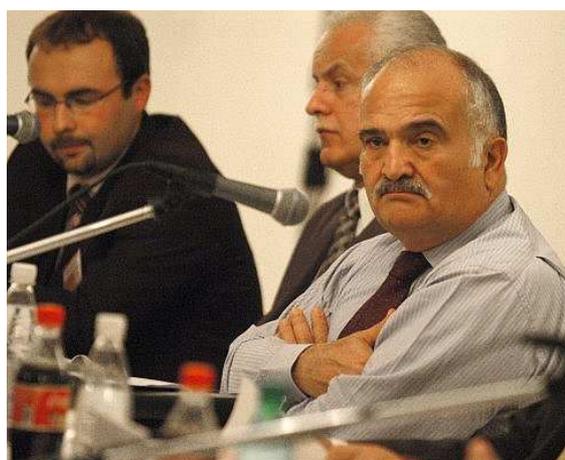
Each workshop will be accompanied by an additional seminar, where some of the workshop participants will share their expertise with representatives of the public by means of lectures and discussions. Ideally, two or more groups of participants in the seminars will be formed, one in Prague and one in a Mediterranean partner country. The group that will be geographically distant from the venue of the respective workshop will be able to follow the seminar via a videoconference and/or streaming and archiving on the Internet. The seminars will have a significant value-added effect and enable the attendees to act as multipliers.

Due to the purposefully chosen order of the workshops, each one will be able to build upon the results of the previous ones, gradually expanding the scope and finally culminating in a substantial **high-level conference** that will offer incentives for the mentioned plan of action. The participants will be required to state **concrete commitments** of their respective governments, companies, and institutions in order to accomplish tangible and measurable results leading to structural improvements.

2.3 Target Groups

Given the conception of the EWaP project, the target groups will be naturally diversified. Each workshop will focus on a different group of experts, including scientists, businessmen, officials and civil society representatives. This is essential for encompassing the wide scale of actors involved in any resolution to the water resources issue. By following the carefully established order of events (see below in 1.7), earlier target groups will provide substantial input to later ones, finally being involved once more (at a higher, more senior level) during the concluding conference.

The public comes in as an additional but no less important target group that will be addressed by the seminars accompanying each workshop. With selected workshop participants delivering lectures in their fields of expertise, the attendees of the seminars will have an opportunity to obtain a unique and rounded-off series of lessons that will enhance their knowledge of the region in general and Middle Eastern problems of water in particular. Since the workshops will take place in several different countries, the seminars will be broadcast via a videoconference and/or streamed and archived on the Internet.



Right to left: H.R.H. El Hassan bin Talal of Jordan, H.E. Khaled El-Shuraydeh, Jordanian Minister of Energy, and Jan Šnaidauf, EWaP Coordinator

Some of the listed target groups appear as natural audiences as long as water in the Middle East is concerned, especially the region's governments and civil societies. On the other hand, it can be assumed that other target groups will need specific incentives and motivation to get engaged in the project's efforts. This concerns above all private enterprises and academic or research institutions. The motivations of both groups can partly overlap and would include some of the following:

- Engagement in a socially responsible process in a field and region where the CSR approach is badly needed and will be highly appreciated
- Deeper understanding of the specific mechanisms that determine the developments of the water sectors in the Middle Eastern countries
- Building up or strengthening contacts with diverse stakeholders in the Middle East and EU Member States (including governments, enterprises, civil society and others)
- Opportunity for hands-on research and eventually the application of researched results
- Potentiality of participating in the execution of technical solutions in the region (such as hydrological devices, construction of channels, desalination process, water transportation, wastewater recycling, institutional reform, information

and communication systems, structural changes in economies, training and education etc.)

The groups participating in the accompanying seminars will presumably comprise (1) specialists for the Middle East and members of the informal “development communities” (i.e. persons with a relation to organizations engaged in foreign development cooperation) in Europe and (2) persons connected to enterprises or institutions with an intention to take part in actions initiated by the project after its conclusion. Their motivation may range from personal interest to a desire for enhancing their own qualifications for professional or business reasons.

2.4 Methods

While following its objectives, the project will apply a complex, integrative and multi-dimensional approach. As stated above, it appears essential to address many different aspect or dimensions of the problem field and, consequently, integrate them into a transparent and logically structured unified approach. Only if the basic structure is sound can there be feasible results in the end. Based on the long lasting experience that the organizer, Forum 2000 Foundation, has with organizing its large-scale Annual Conferences as well as smaller meetings, workshops and roundtables, this project endeavors to advance toward the goals using a **number of well-tuned and targeted meetings**.

This will comprise a **series of workshops** for different audiences, as follows from the given need to address all stakeholders and parties concerned: science and



Forum 2000 Conference, October 2006

technology, business and investment, governments and administrations, and civil society. Each of these actors must certainly be given an opportunity to independently assert their attitudes but they must stay in close connection to the overall framework. Furthermore, there is the observation that some of the actors can generate the necessary outputs for others, who in turn must generate these for others. Thus a kind of ‘cascading’ structure is formed,

where each workshop will build upon the outcomes of the previous ones. In this regard, the decision upon the order of the workshops clearly has a crucial importance. Before it comes to organizing new meetings, however, a sound **knowledge base** compiled from the outcomes of past studies, conferences etc. will be created to serve as the necessary background.

Subsequently, in our understanding, an **assessment of the current functioning of the water sectors** (and, eventually, markets) in the target countries must stand at the beginning, complemented by an image of the respective governments’ policies in this area and by an **evaluation of the existing water patterns** (i.e.

production, consumption, movements and recirculation). For this purpose the notion of 'virtual water' is ideally suited, since it views all economic processes as virtual movements of water. The second step, building on the general knowledge acquired at the first meeting, will be made by the workshop on technology, research and development. Its **technical findings** will be a good basis for assessing the potential environmental and social impacts at the second workshop. The **recommendations, requirements and limitations** formulated by these three events will then provide grounds for the ensuing workshop on business and investment that will therefore be able to bring about **realistic and feasible proposals for action**. Having prepared such clear and unambiguous options, it will finally depend on a political decision whether to advance them or not. Thus government officials, after providing their feedback at the last workshop, will bring the proposals to their respective domestic decision-makers in a run up to the final concluding conference.

All workshop participants should be bound together by a professional background clearly related to the issues of water resources, in spite of coming from different types of institutions. They should belong to the top experts in their areas, either nationally or internationally.

During the final conference all actors will come together in order to once more consult on the outcomes hitherto produced. As it is intended to be a high-level event, the conference will summon presidents of institutes and organizations, CEOs of relevant enterprises, members of governments of the countries concerned, i.e. those who bear responsibility and are positioned to take decisions. It is our belief that the probability of a political blockage diminishes if the situation is sufficiently clear and well understood by all parties. The conference delegates will be encouraged to take decision upon a joint plan for concerted action toward a common resolution of the problems connected to freshwater resources. It should be formulated in a way that foresees concrete measures to be taken within a specified timeframe. To minimize the risk of a party backing off from the agreed plan, the outcomes of the conference will be anchored in the final protocol that will be broadly publicized in cooperation with interested media.

Based on the evaluation of progress made after the project in accordance with the plan for concerted action, it will be decided whether there is a need for a continuation of the project in a further phase.

3 Achievements – October 2005 to March 2007

3.1 Start of the Work: “Prospects for Conflict or Cooperation?”

As a primary kick-off for the entire EWaP project, the October 2005 roundtable provided vital political impetus in the form of concise conclusions and recommendations. It provided a basis for subsequent events, leading also to a follow-up roundtable discussion in the next year.

3.1.1 The Roundtable

In recognition of the central role that water plays in politics, economy and societies of the Middle East, a special roundtable was dedicated to this outstanding topic during the Forum 2000 Annual Conference in October 2005. It took place under the title



Panel discussion on water in the Middle East as part of the Forum 2000 Annual Conference in October 2005. Left in the audience: Václav Havel.

"*Water in the Middle East: Prospects for Conflict or Cooperation?*" and its participants included most distinguished and well-known personalities, such as *His Royal Highness Prince El Hassan bin Talal* of Jordan, President of the Club of Rome; *Uzi Arad*, Head of the Institute for Policy and Strategy, Herzliya; *Bedrich Moldán*, Chairman of the Scientific Committee of the European Environment Agency, Prague; *Hillel Shuval*, Emeritus Professor of Environmental Sciences at

Hebrew University, Jerusalem; and *Jan Urban*, journalist and professor at New York University, Prague.

3.1.2 Conclusions and Recommendations

The participants' speeches and the ensuing discussion shed light on many issues related to freshwater supply and usage in respect to the political, economical, social and environmental dimensions. Basing on these insights from the discussion, a final document was created and entitled "*Water in the Middle East: Ways Ahead*". Its conclusions and recommendations (edited after the event) are the following:

1. Any approach to resolving the Middle Eastern water problems must from its beginning aim at achieving a **win-win situation** for all parties. That means ensuring rational and fair water distribution whilst maintaining the principles of equity, prosperity, autonomy and sustainability for and by all stakeholders. And ultimately, it must lead to restoring peaceful relations between the parties concerned.
2. Any such approach must be of **international nature**, taking advantage of

either existing or new supra-national structures. However, that must not prejudice the need for solid local and national institutions and authorities. The work accomplished in the past must also be taken into account, notably—in the Palestinian-Israeli case—by the multilateral working groups on water, economics and environment established in the wake of the 1991 Madrid conference. Now an even greater regional participation should be sought. Besides, the traditional and long upheld assumption that water sources would on their own become a motive for armed conflicts must be abandoned as unsubstantiated and detrimental to regional international relations.

3. Any such approach must be **practically viable**, bearing in mind the failure of some previous multilateral attempts. Better management procedures and good institutional governance are crucial in this regard, while target-oriented efforts and a 'project-fits-concept' approach are prerequisites for achieving *real* results. That will require feasibility studies with an interdisciplinary character including practical and technical aspects of projects concerned. Moreover, an appropriate 'art of leverage' openly based on profit motives must be developed to engage hesitant organizations and companies.
4. Any efforts linked to the water situation in Israeli-Palestinian relations must be truly shared by both parties and must follow a **collective and united agenda**. To avoid mistrust as well as confusion, the current water situation should be jointly assessed by Israelis and Palestinians, thus laying grounds for further negotiations. The legal basis is provided primarily by the 1997 UN Convention on Water. The discord over whether the water problem should be negotiated independently or only within the broader Peace Process recedes to the background in the face of the fact that a water crisis will emerge for both parties, irrespective of any bilateral agreements. The deep psychological effects of an equitable resolution of water issues, however, must be considered a major factor on the way to peace.
5. A complex understanding of the matter is needed to identify genuine problems. Thus it is not only the shortage of water resources or the distortions of its distribution what causes difficulties, but also certain **patterns of water usage**. This applies in particular to agricultural irrigation, where the economical return of a unit of water is extremely low compared to other sectors. Accordingly, limiting agricultural production must be taken into account and weighed against tradition or security concerns related to self-sustainability in food production.
6. **Environmental impacts** must be duly assessed, above all when introducing new projects or technologies. Beside the immediate consequences on the spot this concerns also climate change, to which the Middle East is particularly vulnerable. Great caution is required specifically in relation to non-renewable water sources, whose depletion must be prevented.
7. **Complex approaches** are needed, since all four dimensions, i.e. politics, economics, society and environment will inevitably be involved in and by any

project. In addition, technology will play a central role. This applies to proposals for reallocating water sources across national or even regional borders as well as for those establishing new facilities for freshwater production, distribution or treatment. It is as well important to look for innovative and original solutions that might be so far unexplored.

8. These conclusions should be further disseminated to decision-makers, experts and public in order to **facilitate discussion**. They must find resonance in future meetings and conferences and contribute to shaping further developments, including individual projects. The participants expressed their willingness to undertake efforts to this end.

Apart from formulating conclusions on the general level, the panel also brought up several more specific recommendations.

- I. The **political options of international support** for resolving the Middle Eastern water problems should be re-examined. This includes e.g. the possibility of involving the OECD or, in the Israeli-Palestinian space, the reinvigoration of relevant working groups under the patronage of the Quartet. Here Europe is still to assume a stronger role. Alternatively, a new and internationally viable commission on water in the Middle East is to be created with broadest possible regional participation. Inspiration may to a certain extent be drawn from the European community established in the wake of World War II in the coal and steel sector.
- II. An extensive, comprehensive and state-of-the-art **knowledge base** must underlie the formulation and implementation of policies. To this purpose the existing resources should be actively used by political actors and experts and completed by new assessments as appropriate. The inclusion of all stakeholders in creation, updates and use of such a knowledge base is essential, not only in the Palestinian-Israeli relation.
- III. The idea of a **reallocation of a part of water resources** from the relatively water-rich countries to those in severe shortage and from those in control of the resources to those without control to meet their vital human needs should be explored. Such an arrangement would allow more equitable water sharing and utilization and would symbolically promote peace without prejudicing national security, thus being in long-term interest of all parties concerned. Economical setbacks would be rather marginal since water-poor countries will have to resolutely deal with their shortage of water in the years to come under all circumstances. The more countries participate in a reallocation scheme, the more favorable consequences there will be for peaceful relations in the region.
- IV. Bold and innovative approaches with remarkable value-added aspects, which are now possible thanks to advanced technology, must be actively supported. One of these is the **Solar Water and Power Source project** developed by Trans-Mediterranean Renewable Energy Cooperation (TREC,

Hamburg/Amman) in cooperation with Communities of Water, Energy and Environment (EWE, London/Ramallah). The project fosters international cooperation, provides tangible long-term benefits in the form of cheap energy and freshwater supplies and inflicts no damage to the environment. The initial application is intended for cases such as the expected water crisis in Sana'a or the economical recovery of Gaza, involving use of adjacent fallow desert areas and cooperation with international investors, notably the European Union. If properly executed, the scheme will create a win-win situation for all and promote peace and stability. Being suitable for other locations in the Middle East and Mediterranean as well, a broader application of the project at then reduced costs is supposed to have overwhelming political and economical consequences.

3.2 Academic Insights: "Conflicting Interests and Cooperative Approaches"

For the start of the EWaP workshop series, the July workshop in Prague provided a broad theoretical overview of diverse problematic points that appear when dealing with Middle Eastern water resources.

3.2.1 Workshop Synopsis

International Workshop

"Water in the Middle East: Conflicting Interests and Cooperative Approaches"
Prague, 12-14 July 2006

The two-day workshop in Prague in July 2006 was co-organized by Forum 2000 and EWE, the *Program for a Community of Energy, Water and Environment* at the London School of Economics (LSE). The invitation to the event was accepted by many distinguished academics and researchers, including renowned professors from the United States, Israel, United Kingdom and Italy, as well as a number of other participants (see the list below).

Much of the debate during the five units of the program revolved around issues of the sustainable usage of water and energy in the Middle East. It is a field that poses some unique challenges. The Prague workshop explored some of them with contributions from key experts in the trans-boundary natural resource management arena.

The objectives of the workshop were to:

- Explore some of the deep-rooted conflicts at the core of Middle East water-related problems.
- Examine the potential of politics aimed at regional integration in the planning and management of Middle Eastern water and energy resources.

- Become acquainted with the concepts of 'virtual water' and 'liquid assets', and consider their potential policy value in the Middle East.
- Examine interrelationships between regional water and energy usage, in order to identify economic, political and environmental linkages that might promote more sustainable utilization.
- Brainstorm in order to (a) identify knowledge gaps & produce ideas about steps to be taken, and (b) offer suggestions for the EWE project's program in 2006-2008 and formulate recommendations for the Forum 2000 Foundation's EWaP project and its forthcoming events.

Among the many issues and ideas that emerged during the various sessions, two project proposals received strong support.

Firstly, to endorse Professor Franklin Fisher's Multi-Year Water Allocation System (MYWAS) model, with a view to supporting its research needs, seeking sponsorship for the model's use from relevant public and private sector actors, and identifying operational applications for it in the European Union – Middle East and North Africa (EU-MENA) region. Secondly, to commence a feasibility project for a 100 MW solar power plant that will be located in Egypt (Sinai) or Jordan (Arava). It was suggested that the private sector finance the project and that the EU countries act as a market guarantor for buying the electricity generated. For both projects it was recommended that the employment of relevant technology and expertise would involve the collaboration of EU-MENA states.



Professor Franklin Fisher,
MIT, USA

The event was organized jointly by the Forum 2000 Foundation (as part of the "Exploring Water Patterns in the Middle East" Project (EwaP) and by the Community of Energy, Water and Environment (EWE) study group (www.lse.ac.uk/collections/ewe). It continued and developed discussions that took place at an initial workshop of Forum 2000 – The Prague 2005 Panel on "Water in the Middle East: Ways Ahead".

3.2.2 Program:

WEDNESDAY, July 12

- Welcome remarks – Forum 2000 & EWE (Oldřich Černý, Pavel Seifter)
Venue: Ministry of Foreign Affairs of the Czech Republic
- Public Lecture Series – opening lecture: "*Managing water and energy in the Middle East; engaging science fundamentals with socially determined policy. Can the discourses converge?*" / Speaker: Tony Allan / Ensuing: moderated Q&A session
- Welcome reception (participants and invited guests)
Venue: Ministry of Foreign Affairs

THURSDAY, July 13

Title: Conflicts, Integration and Context / Venue: Hotel Pyramida

- UNIT 1: Water and Conflicting Interests
Speakers: Jan Šnidauf & Jakub Landovský / Chair & Comments: Mark Zeitoun
- UNIT 2: Water and Politics of Integration / Speaker: Eran Feitelson
- UNIT 3: The Context – Energy Old and New
Speakers: Giacomo Luciani & Gerhard Knies / Chair & Comments: Amit Mor
- Small group brainstorming: Energy / Facilitator: Amit Mor
- EWaP Public Lecture Series - Lecture No. 2
Speakers: Franklin Fisher, Hillel Shuval / Ensuing: moderated Q&A session

FRIDAY, July 14

Morning – Title: Economic Approaches / Venue: Hotel Pyramida

- UNIT 4: Liquid Assets / Speaker: Franklin Fisher / Chair & Comments: Jalal Younis
- UNIT 5: The Role of Virtual Water in Water Resource Management in the Arid Middle East / Speaker: Hillel Shuval / Tony Allan

Afternoon – Title: Brainstorming / Venue: Hotel Pyramida

- Energy – Conclusions of last day's brainstorming meeting (Amit Mor)
- Water – Issues, Knowledge Gaps / Facilitator: Eran Feitelson
- Recommendations for EWaP and EWE projects
- Summing up and closing remarks (Pavel Seifter, Jan Šnidauf)

Public Addresses

As always during Forum 2000 workshops within the "Exploring Water Patterns in the Middle East" project, the deliberations were accompanied by public lectures. These gave the interested public an opportunity to listen to and discuss the issues with some of the world's leading experts: Professors Tony Allan, Franklin Fisher and Hillel Shuval. The lectures are indicated in the program above.



Venue of EWaP Workshop.

3.2.3 Participants:

- *Prof. Tony Allan*, School of Oriental and African Studies, London (UK)
- *Dr. Urooj Amjad*, London School of Economics, London (UK)
- *Prof. Eran Feitelson*, Hebrew University, Jerusalem (IL)
- *Prof. Franklin Fisher*, Massachusetts Institute of Technology, Cambridge (US)
- *Mr. Jan Karlas*, Institute of International Relations (CR)
- *Dr. Gerhard Knies*, TREC, Hamburg (DE)
- *Mr. Jakub Landovský*, Oregon State University / TFDD, Corvallis (US)
- *Mr. Yuval Laster*, London School of Economics, London (UK)
- *Prof. Giacomo Luciani*, European University Institute, Florence (IT)

- *Dr. Michael Mason*, London School of Economics, London (UK)
- *Dr. Amit Mor*, Eco Energy Ltd., Herzliya (IL)
- *Dr. Pavel Seifter*, London School of Economics, London (CR, EWE co-ordination)
- *Dr. Khaled El-Shuraydeh*, Higher Council for Science and Technology, Amman (JO)
- *Prof. Hillel Shuval*, Hadassah Academic College, Jerusalem (IL)
- *Dr. Jan Šnidauf*, Forum 2000 Foundation, Prague (CR, EWaP co-ordination)
- *Mr. Michal Stibitz*, GeoMedia, Praha (CR)
- *Dr. Jalal Younis*, European Commission/Joint Research Centre, Ispra (IT)
- *Mr. Mark Zeitoun*, King's College, London (UK)

3.2.4 Report

The complex workshop report contains a summary of the three days of meetings that included public lectures, small group presentations, discussions and brainstorming sessions.

3.3 Talking to Those Responsible: “Current Imperatives of Water Sector Governance and Development”

The October 2006 workshop was a successful attempt to involve those directly responsible for some part of water sector administration in their respective countries. In the end it is always the authorities or official institutions that implement policies and decisions. Therefore, their participation in the project framework is essential. The participants demonstrated a great extent of willingness to cooperate and finally agreed upon a list of statements and recommendations.

3.3.1 Workshop Synopsis

International workshop

Current Imperatives of Water Sector Governance and Development in the Middle East Prague, October 8, 2006

This workshop was designed as an opportunity for senior water sector officials to meet in an unusual setting, discuss their shared problems, and arrive at a joint statement to be presented at the political roundtable ensuing later. The involved countries included Egypt, Israel, Jordan and Palestine, since all of them show similarities in respect of the necessity to struggle with political, economical and social tensions complicating the situation.

The present experts included *Dr. Amjad Aliewi*, Director-General, House of Water and Environment, Palestine; *Mr. Jacob Keidar*, Director, Multilateral Peace Talks Coordination Department and Water Issues, Ministry of Foreign Affairs, Israel; *Amb. Mohamed Rafik Khalil*, Ministry of Water Resources and Irrigation, Egypt; *Mr. Saleh Malkawi*, Director, Water Reuse & Environment Unit, Ministry for Water and Irrigation, Jordan; and *Dr. Khaled El-Shuraydeh*, Secretary-General, Higher Council for Science and Technology, Jordan.



Fayez Bataineh, Deputy Secretary-General, Jordan Valley Authority, Jordan. At EWaP workshop, 2006.

view

As an introduction, the participants delivered an overview of the situation in the water sectors of their respective countries and the related problems, which opened space for many comparisons. The following session offered an opportunity to discuss common issues as well as differences between the countries, arriving at conclusions and formulating lessons learned when dealing with the problems. Afterwards, external experts presented two concrete project proposals as an incentive for further discussion about possible solutions to water shortage. The projects concerned were Solar Water & Power Source for Gaza, presented by *Dr. Gerhard Knies* of the Trans-Mediterranean Energy Cooperation Network (TREC) in Germany, and the technical aspects of a project bringing water from the Lebanese south to the Jordan valley, as described by

Mr. Josef Janečka.

The closing session took the form of a brainstorm aimed at addressing the broader dimension of the water situation in the Middle East. The participants agreed on a common statement (see the corresponding section below) to be presented at the political roundtable on the next day during the Forum 2000 annual conference.

3.3.2 Program and Agenda

SUNDAY, October 8

- *Welcome remarks* (*Oldřich Černý*, Executive Director, Forum 2000)
- Introduction to Forum 2000's Middle East Water project and presentation of outcomes to date (*Jan Šnidauf*, Forum 2000)
- *Unit 1: Equality versus diversity* of experience from individual countries: Challenges, issues and solutions in comparison (contributions by all participants and discussion)
- *Unit 2: Lessons learned and ways forward* in Middle East water sector governance – through consensus toward conclusions? (discussion among participants)
- *Unit 3: Innovative and progressive – examples of projects* (presentations with discussion, *Gerhard Knies & Josef Janečka*)
- *Unit 4: Issues beyond the scope of water sector administration* – identify and overcome obstacles to progress and development (brainstorming session)

Workshop Agenda

The following questions were used as an incentive, around which some of the workshop's discussions later revolved.

- Regional cooperation in the water sector – is the idea meaningful if based on a collective and united agenda? What is the experience with the Arab Water Commission?

- Do water authorities make use of a connection to international investment and funding mechanisms?
- Authorities on the local and national levels: transparent management procedures, good institutional governance and sound knowledge base?
- Is there an integrated administration system including water authorities, which can make competent decisions as to water allocation in different sectors of economy (agriculture, industry, energy, households)?
- Is there reliable data to base such decisions on?
- Is the concept of virtual water as discussed in academic circles a useful and practical approach?
- Some of the non-renewable water sources (e.g. groundwater aquifers) are coming close to depletion. Is this an unavoidable situation or can the resources be preserved?
- Is the development of new water sources (such as desalination) the only solution in the long perspective or can major schemes of cross-sector water reallocation bear positive results?
- Do water administrations receive enough information about prospective projects in the water sector? Are they involved in their evaluation and the respective political-administrative decision-making?

Public lecture

The public session was entitled "*Water Sector Governance in the Middle East*" and aimed at bringing Middle Eastern water issues to the public eye, particularly the development community in the Czech Republic. Attended by scholars, students, and representatives of public and private institutions, the lecture and the following discussion provided an educational outlay of the water situation in Israel, Jordan, Palestine and Egypt.

It was a common understanding of all speakers that while redistributing scarce resources or increasing efficiency of their usage is necessary, the only way to "solve" the severe water shortage is to find new water sources. In this context, desalination appears to be the most promising approach. The speakers also stressed the importance of private investment and outside donors into the water sector in the Middle East, since water was depicted as "the future market for investment". A correction was made to the frequently heard supposition that water can be a



The group of experts in a group photo with H.R.H. El Hassan bin Talal. EWaP workshop, Prague, October 2006.

primary source of open conflict, an idea that has not materialized to date. The water sector was quoted as one of the most pragmatic and cooperative sectors even in the regional and international scope.

The event was instrumental for increasing public awareness of the severe issues related to water shortage in the Middle East, a theme not frequently paid attention to in most European countries, where water is abundant. It also provided an insight into the future of water markets in the Middle East.

3.3.3 Participants

- *Amjad Aliawi*, House of Water and Environment, Palestine
- *Josef Janečka*, EKODO, Czech Republic
- *Jacob Keidar*, Water Issues Department, Ministry of Foreign Affairs, Israel
- *Mohamed Rafik Khalil*, Ministry of Water Resources and Irrigation, Egypt
- *Gerhard Knies*, TREC, Germany
- *Saleh Malkawi*, Ministry for Water and Irrigation, Jordan
- *Khaled El-Shuraydeh*, Higher Council for Science and Technology, Jordan

3.3.4 Concluding Statement

The following set of conclusions and recommendations was agreed upon by the group of experts during the October 2006 workshop in Prague. Noteworthy as a joint statement of a number of parties including both Israel and Palestine, the document was later presented at the high-level political roundtable on "Making Regional Politics a Stimulator for Development" (see below). Below is the content of the statement.

**Statement by the group of experts
for the high-level political panel on Middle East water resources**

The group of experts

- believes that any sustainable solution of Middle East water issues must have a regional character, in addition to bilateral and national approaches.
- states that the availability of additional water sources is essential for the region's future. Toward this aim, reuse of treated wastewater as well as application of advanced technology, such as seawater desalination using concentrated solar power, must be supported.
- encourages international donors to be involved in the implementation of projects related to the solution of Middle East water crisis.
- is convinced that groundwater sources must be protected from pollution and depletion.
- believes that good governance and participatory approaches to the development of water sector are crucial principles.
- states that integrated water resources management (IWRM) is a necessary

precondition for efficient water sector administration.

- endorses the execution of a feasibility study and the environmental impacts assessment study for the Red Sea-Dead Sea project.

Members of the group of experts: *Amjad Aliawi*, Director-General, House of Water and Environment, Palestine; *Jacob Keidar*, Director, Multilateral Peace Talks Coordination Department and Water Issues, Ministry of Foreign Affairs, Israel; *Mohamed Rafik Khalil*, Ministry of Water Resources and Irrigation, Egypt; *Saleh Malkawi*, Director, Water Reuse & Environment Unit, Ministry for Water and Irrigation, Jordan; and *Khaled El-Shuraydeh*, Secretary-General, Higher Council for Science and Technology, Jordan

3.4 Aimed at Decision-Makers: „Making Regional Politics a Stimulator for Development“

The event was conceived as a follow-up to the corresponding roundtable discussion during the conference in the preceding year. In a similarly representative high-level composition this year, the participants listened to the joint statement produced by the group of experts (see above) and reflected on diverse contemporary developments related to water resources.

3.4.1 Roundtable Synopsis

*High-level roundtable discussion in public
Middle East Water: Making Regional Politics a Stimulator for Development
Prague, October 9, 2006*

The high-level roundtable served as a finale for the events dedicated to water resources in the Middle East at the Forum 2000 annual conference in October 2006. At the same time, it was a continuation of the more general political panel from the previous year that had convened under the title "Water in the Middle East: Ways Ahead".

This year's participants included His Royal Highness *El Hassan bin Talal*, Prince of the Hashemite Kingdom of Jordan; *Dr. Jana Hybášková*, Member of the Foreign Affairs Committee of the European Parliament; His Excellency *Petr Jan Kalaš*, Minister of Environment of the Czech Republic; *Dr. Gerhard Knies*, Head of Trans-Mediterranean Energy Cooperation Network, Germany; and *Dr. Khaled El*



Participants in the EWaP political roundtable on Middle East water. From right to left: Gerhard Knies (TREC), Jana Hybášková (European Parliament), Petr Jan Kalaš (Minister of Environment), H.R.H. Elhassan bin Talal (Jordan), Khaled El Shuraydeh (Jordanian Minister of Energy), Jan Šnidauf. Prague, October 2006.

Shuraydeh, Secretary-General of the Higher Council for Science of Technology of Jordan.

In his speech, *H.R.H. El Hassan bin Talal* brought up the connection between “black gold and blue gold”, that is oil and water, thus providing a significant take-off point for the discussion about expiring natural resources, their effect upon the Middle Eastern region, and the political and other responses that this situation requires. The panel further discussed the importance of economic support for the water sector and the necessity of redirecting public resources from less strained sectors to the water sector. It also reiterated the importance of regional cooperation in water negotiations, seeing an exclusively national approach to water and oil as counterproductive.

Water was seen in a humanistic perspective, with the recognition of it as a basic human right, a precondition for survival. On the other hand, its absence may bring about inhuman conditions and contribute to the breeding grounds for unrest and terrorism. *Jana Hybášková* spoke of the sewage water contamination of many water resources and of the destruction of entire water areas in the Middle East. Political solutions and approaches to water issues were looked at, including bilateral negotiations, price policy, public and private partnerships, solar energy usage, and the Trans-Mediterranean Renewable Energy options.

The roundtable emphasized that finding a solution to water issues, including thorough water sector reforms and an improvement of governmental control of resources, is extremely important for the future of the peoples in the Middle East. It also stressed the importance of collective responsibility, and appealed to the public not to ignore this issue creating severe distress around the globe. As a particularly important part of the event, *Khaled el-Shuraydeh* presented the common statement of the group of experts that was agreed upon the previous day at the workshop on “Current Imperatives of Water Sector Governance and Development in the Middle East” (see above).

3.4.2 Participants

- *H.R.H. El Hassan bin Talal*, the Hashemite Kingdom of Jordan
- *H.E. Petr Jan Kalaš*, Minister of Environment, Czech Republic
- *Khaled El-Shuraydeh*, Higher Council for Science and Technology, Jordan
- *Jana Hybášková*, European Parliament, Czech Republic
- *Gerhard Knies*, TREC, Germany
- *Jan Šnidauf*, Forum 2000, Czech Republic (moderator)

3.5 Jump into Reality: “Needs and Opportunities”

With the Middle East mission and the subsequent workshop in Amman, the Forum 2000 EWaP project has overcome a fundamental limitation resting in its geographical confinement to Prague as the place for running all events. The workshop in Amman provided an opportunity to obtain first-hand accounts of the situation directly on the

ground. It also further established Forum 2000 as a credible institution and addressed the need to ensure the "local ownership" of EWaP.

3.5.1 Travels and Encounters

From December 8 to 12, 2006, Forum 2000's representatives embarked on a short fact-finding journey to Jordan, Palestine and Israel. They used the opportunity to meet their friends and partners from relevant local institutions (authorities, firms and NGOs) as well as find new ones. During these few days, they met with over a dozen key actors in the water sectors of the three countries. They also strived to raise local awareness of the Prague project in close relation to the conditions on the ground, thus securing a certain "local ownership" of the venture. In addition, they sought and obtained feedback on their work in this regard and new impetus for the project's continuation. Starting in Amman, the two-member delegation moved to Jerusalem and subsequently, via Ramallah, to Tel Aviv and back to Jordan.

3.5.2 Amman Workshop – Synopsis

*International workshop "Water Sector in the Near East: Needs and Opportunities"
Crowne Plaza Amman, Jordan, 16-17 December 2006*

The December 2006 workshop in Amman provided a space for discussing major issues currently facing the water sector in the region concerned. It outlined visions for future development, dealt with major pressing issues of today's situation, and discussed opportunities for partnerships with the private sector in various fields related to the region's water management and development. In addition, it brought opportunities for networking and brainstorming.

The workshop was comprised of three sessions focused on the future of the region's water resources in respect of the existing solution concepts, on partnership opportunities and on the challenges posed by managing shared water resources. After the main part of the workshop a public lecture, featuring distinguished personalities from the three Jordan valley countries, was transmitted via a videoconference to Prague where students and scholars listened to the contributions and engaged the panel with their questions. On the final day a field tour of one of the major Jordanian water facilities and an informal brainstorming session capped the whole event.



Muhammed Saidam, Royal Scientific Society of Jordan, presenting at EWaP workshop in Amman, December 2006.

"Exploring Water Patterns in the Middle East" project and in cooperation with the Royal Scientific Society of Jordan. The group of participants consisted of experts from the realms of politics, administration, private sector and non-governmental

organizations (see the list of participants below), and included representatives from Jordan, Palestine, Israel, Egypt and the Czech Republic.

3.5.3 Program

FRIDAY, 15 December 2006

- Welcome reception

SATURDAY, 16 December 2006

- Welcome remarks: *Jan Šnidauf*
- Introduction: Water in the Region, Major Challenges
 - *Munther Haddadin*, Former Minister of Water and Irrigation / Discussion
- Session 1: Future Visions and Solutions / Moderator: *Olga Zárubová*
 - *Mohammad Saidam* – Water Quality Monitoring & Resource Management
 - *Mohammad Mosa* – Red Sea-Dead Sea Project, Socio-economic Aspects
 - *Nidal Al-Oran* – Red Sea-Dead Sea Project, Marine Environment Aspects
 - *Josef Janečka* – Northern Solution Involving Lebanon
- Session 2: Private Sector and Partnership Opportunities / Moderator: *Jan Šnidauf*
 - *Emad Hassan*, Nexant Inc., Egypt
 - *Philippe Odievre*, LEMA Co., Jordan
- Session 3: Shared Water Resources – The Challenges / Moderator: *Bassam Hayek*
 - *Fayez Bataineh* – Planning in the Sector and Usage of Infor. Technologies
 - *Shaddad Attili* – Palestinian thinking of water for a viable Palestinian State
 - *Shimon Tal* – Resources Management
 - *Ayman Jarrar* – Water Regulation in Palestine
 - *Jakub Landovský* – Legal Issues
- Closing of day 1, brainstorming
- Public lecture with videoconference / Moderator: *Jan Šnidauf*
 - *Munther Haddadin* - Water Resources Governance and Management: the Jordanian Experience
 - *Shimon Tal* – Water Resources Management and Monitoring: the Israeli Experience
 - *Shaddad Attili* – Palestinian positions



Speakers in the public videoconference between Amman and Prague, December 2006. From right to left: Shimon Tal (Israel), Munther Haddadin (Jordan), Shaddad Attili (Palestine). On far left Bassam Hayek, Royal Scientific Society of Jordan, co-organizer of the Amman workshop.

SUNDAY, December 17, 2006

- Visit to Zai Water Treatment Plant
- Workshop round-up and closing brainstorming

Public lecture with videoconference:

To maintain the tradition of public lectures accompanying any closed-door events, Forum 2000 organized a videoconference between the workshop venue in Amman and the American Information Center in Prague. There the Czech audience was able to listen to the distant speakers' contributions and ask them questions. The speakers focused on the following issue

Munther Haddadin commenced the session with a short history of water management in Jordan. Water has been managed under one ministerial umbrella at times and under separate entities and authorities at others, he said. In the 70s, 80s and 90s Jordan had to manage the conflict with Israel while not communicating with the country, which implied the impossibility of having meetings and open agendas. Turning north, he said the current situation with Syria is not a real dispute, as it differs from the case with Israel.

Shimon Tal then explained that all three panelists live in a water-scarce region. "We understand," he said, "that we will not be able to live in this area without an efficient and wise use of water resources." He went on to say that water must be developed for the good of the country and people. Therefore, projects and actions should be executed according to government plans.



Shimon Tal, late Israeli Water Commissioner, presenting at EWaP workshop in Amman, December 2006.

As water is central to the development of all public sectors, the water sector requires planning, and any plan has to consider regional factors. In the past seven years, Israel has changed its water management policies toward developing new water resources, such as the reuse of water effluents for agricultural purposes and thereby freeing up fresh water for other uses. Israel is also pursuing desalination and in total, Tal estimated, the country should be able to increase its water resources by 55 percent. In doing so, Israel hopes to end its suffering due to shortage of water. The challenge will lie in finding methods for farmers to survive in an economic and resource environment where costs are inevitably going to rise.

"For peace and a decent life in the future," Tal ended, "we must start cooperating in the production of new water resources; this is a part of the agreement between Israel and Jordan. On the management side, we have to increase efficiency so that the ends of supply and demand meet mid-way."

Shaddad Attali believed the problem of water scarcity in the region required a political solution. While he found the concrete discussion with Mr. Tal as a representative of Israel fruitful, he indicated that in other contexts the issue would become "quite complex."

He added, though, that a new perspective was emerging in the region. Specifically, some major actors in the field believe they can take water out of the political equation by relegating it to the technological realm. Attali disagreed with Tal on

desalination as a solution to water scarcity. He also noted that "when the Palestinian state is realized, approximately 1 million refugees will likely return and they will want to drink. And we will want to settle them in the Jordan Valley on the Palestinian side."

3.5.4 Participants

Shaddad Attili, Policy Advisor Water & Environment, Negotiations Support Unit,
Palestine Liberation Organization

Fayez Bataineh, Assistant Secretary-General for Planning and Information Technology,
Jordan Valley Authority, Ministry of Water and Irrigation, Jordan

Munther Haddadin, Chairman and CEO, House of Experience, Jordan

Emad Hassan, Principal Consultant, Nexant Inc., Egypt

Bassam Hayek, Director, Environment Research Center, Royal Scientific Society of
Jordan

Nuwwar Hussein

Josef Janečka, Director, EKODO, Czech Republic

Mohammed Ayman Jarrar, Director, Regulatory Direction, Palestinian Water Authority

Jakub Landovský, Researcher, Oregon State/Charles University, USA/Czech Republic

Munqeth Mehyar, Chairman and Director for Jordan, Friends of the Earth Middle East

Mohammad Mosa, Environment Research Center, Royal Scientific Society of Jordan

Philippe Odievre, Executive Director, LEMA Co., Jordan

Nidal Al-Oran, Environment Research Center, Royal Scientific Society of Jordan

Jan Šnaidauf, Project Coordinator, Exploring Water Patterns in the Middle East,
Forum 2000 Foundation, Czech Republic

Mohamed Saidam, Environment Research Center, Royal Scientific Society of Jordan

Abdul Rahman Sultan

Shimon Tal, Executive Director, Tal Consulting, Israel

Olga Zárubová-Pfeffermannová, Lecturer, Czech University of Life Sciences

3.5.5 Report

The workshop report covers all sessions and discussions of the event in detail. It notices agreements as well as discords between the participants, thus providing a first-hand account of a variety of problematic issues. Beside this analysis, however, it also indicates promising approaches and paths towards solutions. The report is contained in Annex B.

4 Progress in 2007

4.1 Sharing What We Have Learned

Forum 2000 sees a great sense in sharing the knowledge and know-how collected during its activities. While the sharing of knowledge in closed communities is meaningful to its members, sharing with the public benefits everyone. Especially the EWaP project is a case in point, as it possesses enough resources that many interested people can appreciate, even despite today's over-supply of information coming from all sides. The knowledge base under construction and the information center are the means to this aim.

4.1.1 Knowledge Base

Since the beginning of the project the Forum 2000 Foundation has either accumulated or gained access to a considerable amount of resources with rich contents. The list below sums up the relevant categories of resources that can be found in the project's knowledge base.

Knowledge base composition:

- A. Materials from Forum 2000 events
 - Papers
 - Presentations
 - Reports and conclusions
- B. Library (ca. 30 titles as of March 2007)
- C. Papers and other publications downloaded from scientific databases (Academic Search Premier, ProQuest) and those available on the internet (Google Scholar etc.)
- D. Outcomes from events worldwide (conference reports, minutes etc.)
- E. Links to dedicated websites (TFDD and others)
- F. Links to encyclopedic entries (Wikipedia, Encarta etc.)
- G. Database of contacts
 - Institutions worldwide
 - Companies worldwide & CZ
- H. Link to a personalized news feed (RSS)

After the registering and cataloguing of the resources is finalized, they are to be made publicly available via the information center (see below).

4.1.2 Information Center

The "Information Center on Middle Eastern Water Resources" is essentially planned as an institution that should serve experts as well as the general public in the Czech

Republic and worldwide. Its operation is based upon the provision of the above



Jordan River regulation system, chart at Zai Water Treatment Plant.
Jordan, December 2006.

resources. Those parts of the knowledge base that do not have physical or legal limitations are to be made available online via Forum 2000 website (www.forum2000.cz). That includes particularly files for download (outcomes from Forum 2000's events and other events abroad), links to other websites, databases of contacts, RSS feed.

Other resources are accessible at the physical location of the Information centre, i.e. the offices of Forum 2000 Foundation in Prague. These categories comprise mainly the library and articles acquired from paid databases. Anyone interested will have the opportunity to visit the information center during its fixed opening hours.

The information center will officially open in March 2007.

4.2 Involving Crucial Stakeholders: "Society, Environment, and Religion: Listening to the Voice of Civil Society"

With this workshop, Forum 2000 provides space to representatives of the kind of stakeholders that will ultimately feel the consequences of water problems most pressingly. That is, civil society and society in general, as well as the environment. It is these stakeholders who are the ultimate addressees of any measures and policies. Thus it is essential to directly listen to their attitudes and concerns.

[The event was successfully accomplished in April 2007. Details are to appear in this document in the next edition].

4.2.1 Workshop Concept

International workshop

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

Prague, March 4, 2007

The events organized in the framework of this project have to date been oriented at political, academic, administrative and economic dimensions, and have attracted a number of distinguished personalities. However, the environmental and social dimensions have been voiced less clearly. Therefore, Forum 2000 now proceeds to the next workshop, entitled "Water Issues in the Middle East - Society, Environment, Religion: Listening to the Voice of Civil Society". Its aim is to bring the point of view of non-governmental organizations into the entire picture and look for deeper connections between society, religion, environment, and water.

Being representatives of broad and diverse groups of people, civil society and non-governmental organizations represent the ultimate stakeholder in the issues connected to water resources: the population as such. Thus the interests of the population along with their attitudes and perceptions make up a fundamental stone for the complex mosaic being assembled by the Exploring Water Patterns project.



Participants:

- Ca. 8 representatives of NGOs and civil society organizations from the Near East (Jordan, Palestine, Israel, Lebanon, Syria...)
- Ca. 5 partners from the Czech Republic and neighborhood

Format: short introductory presentations, intensive discussion, formulation of conclusions

Munqeth Mehyar, Friends of the Earth Middle East, discussing at EWaP workshop in Amman, December 2006.

4.2.2 Preliminary Agenda

The following is a proposal of the workshop's agenda, which is due to change in communication with the invited participants.

1. *Social and environmental repercussions* of the current use and administration of water resources
 - Depletion of resources, pollution and degradation
 - Social inequality and water availability
 - Traditional views, religion, versus rapidly changing environment and modernization
 - Does the distribution of consumption have to be changed?
1. *Grand future projects* and their impacts (Red Sea-Dead Sea channel, Solar Water & Power Source for Gaza project)
2. *Water administration and governance model*
 - Are the current models perceived positively? What should be changed?
 - Can privatization of water-related services be helpful?
 - What is the role of civil society organizations? Monitoring the administration or sharing in decision making? Should non-governmental organizations work locally, nationally or regionally? How to work together with public institutions?
3. *Education* of people toward environmental and social responsibility? A major role for NGOs?
4. *Middle Eastern ethos of water:* tough arid environment, tumultuous historical development and Islamic tradition. An experience, an understanding and a message for the outer world?

4.3 Toward Tangible Solutions: "Solar Water & Power Source for Gaza: Palestinian-Egyptian Joint Venture"

While dealing with issues of Middle Eastern water resources and their various aspects, none of the events was dedicated to a particular vision or idea. Thus the forthcoming Cairo workshop appears as the first of its kind, as it will focus on the single promising idea of a solar water and power source for Gaza and beyond.

4.3.1 Workshop Concept

*International workshop no. 2 on "Solar Water & Power Source for Gaza": Talking to Egyptian Stakeholders and Decision-Makers
 Co-Organized by Forum 2000 Foundation, Czech Republic, and TREC, Germany
 Cairo, May 2007*

For a number of reasons, the Gaza project (see next section) can only be realized as a joint enterprise of Egypt and Palestine. A first Gaza Project Work Shop (GPWS1) followed the presentation of Dr. Gerhard Knies at the October 2006 workshop for officials in Prague. GPWS1 took place in Ramallah, December 15-19, 2006, leading to the result that Palestinian authorities, NGOs as well as scientific institutions were informed and jointly decided to pursue the idea of the project. Similarly, the main objective of the 2nd workshop (GPWS2) is to establish good contacts with Egyptian stakeholders and decision makers, inform them of the project, and seek a basic Palestinian-Egyptian agreement to commit to the project. Hence, GPWS2 will take place in Cairo.

4.3.2 Gaza Project Information

The following slides produced by TREC shed light on the conception and idea of the *Solar Water & Power Source for Gaza*.

Summary of technical properties the Gaza SW&PS

1. **SW&PS will produce for 2 - 3 Million inhabitants**
 - water for life
 - power for productivity
 - cooling for quality of life
 - with long-term stable costs.
2. **SW&PS can be built from existing technology**, within about 15 years. (technology may improve during this time)
3. Collectors are to be located on nearby **Egyptian grounds**.
4. As "by-product" costs for solar technology and solar steam will be brought down further to the benefit of other places in MENA
5. **Production lines** for concentrating collectors can be set up in **Palestine and Egypt**.

Basic parameters for the size of SW&PS

Population in 2005	Expected in 2015	In 2025	In 2035
1.4 Mio.	2.0 Mio.	2.6 Mio.	3.3 Mio.
From Palestinian Central Bureau of Statistics		Assuming 3.0% ann. Growth	Assuming 2.0% ann. Growth

Demand	Per capita /yr	for 2.5 Million inhabitants
Power	4000 kWh	10 TWh electricity/y
Water	300 m ³	> 0.7 billion m³ water/y

Required solar energy collector size (5 km² for 1 TWh/year):
→ 50 km² for collectors

4.3.3 Preliminary Agenda

Foreseen course (rough draft):

5. *Introduction and presentation* of the project

- Overall idea and scenario
 - Project in detail
 - Benefits for main stakeholders (Egypt, Palestine)
 - Benefits for the region (Jordan, Israel)
 - Possible drawbacks
6. *Issue areas:*
- Issue area 1: technical feasibility – technologies used, challenges
 - Issue area 2: Potential strategies for implementation (demo plants, studies)
 - Issue area 3: financial feasibility – cost estimate, funding scenarios
 - Issue area 4: long-term sustainability – economic and political environment
7. *Ways ahead* – promoting the idea and its benefits, addressing the stakeholders' interests, creating political momentum, securing involvement of international organizations



From right to left: Gerhard Knies (TREC, Germany), responsible for the Solar Water & Power Source for Gaza project, in a lively discussion with Petr Jan Kalaš, Czech Minister of Environment.

5 Vision for the Future

In spite of the past achievements described above, the efforts so far dedicated to the EWaP project would turn in vain unless a follow-up is realized. However, a clear idea as to where and how the project can best contribute and be complementary to a number of other initiatives is a required precondition for a continuation. The Forum 2000 Foundation perceives Middle Eastern water resources as one of the areas where its activities may help bring the stakeholders and key decision makers to an **agreement over their own long-term vision for the future.**

Moreover, any progress in the issue of water resources can only be accomplished through a joint endeavor of the stakeholders from all of the related countries. A



Zai water treatment plant, Jordan, December 2006. Caring for freshwater supply and working against drought.

result of such an endeavor may take up the form of a plan for concerted action that will lead to tangible improvements of the situation. It is the EWaP meetings where the possibilities for a plan of such kind have been and will further be explored. The **participation of both main conflicting parties** of the region (Israelis and Palestinians) in the project's workshops gives the hope that the efforts aim at a realistic objective.

In more general terms, any common progress in the field of water will support **international cooperation in the region**, fostering **stability** and—essentially—coming closer to **peace.**

Water is a field that bears a crucial importance for the region. At the same time, it is an issue where an agreement at least at the technical level appears easier than in other cases. Therefore, a scenario can be envisaged where water becomes a **starting point for a broader peace-oriented process.** In this context other relevant issues that may serve the same aim could be energy and, eventually, the environment. Therefore, in the long-term view, a limited cooperation on several key issues might be able to transform into a self-sustainable mechanism automatically progressing toward peace. A reference can be made to Europe's Coal and Steel Community of the 1950s.

With a view to the above considerations, the Forum 2000 Foundation will maintain the Exploring Water Patterns project as one of its core activities.