EcoPeace / Friends of the Earth Middle East
ايكوبيس / جمعية أصدقاء الأرض الشرق الأوسط
אקופיס / ידידי כדור הארץ המזרח התיכון

EcoPeace

A MODERN AGREEMENT TO SHARE WATER BETWEEN ISRAELIS AND PALESTINIANS:

THE FoEME PROPOSAL

By

David B. Brooks and Julie Trottier

with

Gidon Bromberg, Nader Al Khatib and Munqeth Mehyar

and comments and critiques by Nadav Shelef and Hillel Shuval

November 2010

With the support of the European Union

Figure 1: **Illustrative Map of Water Sources**

EcoPeace / Friends of the Earth Middle East
ايكوبيس / جمعية أصدقاء الأرض الشرق الأوسط
אקופיס / ידידי כדור הארץ המזרח התיכון

EcoPeace

A MODERN AGREEMENT TO SHARE WATER BETWEEN ISRAELIS AND PALESTINIANS:

THE FoEME PROPOSAL

By

David B. Brooks and Julie Trottier

with

Gidon Bromberg, Nader Al Khatib and Munqeth Mehyar

and comments and critiques by Nadav Shelef and Hillel Shuval

November 2010

With the support of the European Union

Friends of the Earth Middle East (FoEME) is a unique organization at the forefront of the environmental peacemaking movement. As a tri-lateral organization that brings together Jordanian, Palestinian, and Israeli environmentalists, our primary objective is the promotion of cooperative efforts to protect our shared environmental heritage. In so doing, we seek to advance both sustainable regional development and the creation of necessary conditions for lasting peace in our region. FoEME has offices in Amman, Bethlehem, and Tel Aviv. FoEME is a member of "Friends of the Earth International", the largest grassroots environmental organization in the world.

Note of Gratitude

FoEME would like to recognize and thank the EU Partnership for Peace program for their support of this project. This document had been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of EcoPeace / Friends of the Earth Middle East and can under no circumstances be regarding as reflecting the position of the European Union.

For more information on FoEME or to download any of our publications please visit: **www.foeme.org**

Amman Office

PO Box 840252 - Amman, Jordan 11181
Tel 962-6-5866602/3 Fax: 962-6-5866604
Email: info@foeme.org

Bethlehem Office

PO Box 421 - Bethlehem, Palestine
Tel: 972-2-2747948 Fax: 972-2-2745968
Email: info@foeme.org

Tel-Aviv Office

HaNegev Street #8 - Tel-Aviv, 66186 Israel
Tel: 972-3-5605383 Fax: 972-3-5604693
Email: info@foeme.org

CONTENTS

Acknowledgements 4

Note on Political Geography and Metric Conversions 5

Preface By Gidon Bromberg, Nader Al Khatib, and Munqeth Mehyar 6

Executive Summary 7

Chapter 1: **Fresh Water in the Israeli-Palestinian Peace Process** 9

Chapter 2: **Geography, Hydrology and Shared Water Resources** 14

Chapter 3: **International Water Law and of Water Management Proposals for the Region** 17

Chapter 4: **The FoEME Proposal for an Israeli-Palestinian Agreement on Fresh Water** 28

Chapter 5: **Moving Fresh Water From Last to First in the Peace Process**
By Gidon Bromberg and Nader Al Khatib 37

Chapter 6 : **Conclusions** 39

References Cited 41

Annex A: **Brief Biographies of Contributors** 44

Annex B: **Responses to the FoEME Proposal**
By Nadav Shelef, Hillel Shuval, David Brooks, Julie Trottier 45

Arabic Executive Summary and Chapter 4 65

Hebrew Executive Summary and Chapter 4 77

ACKNOWLEDGMENTS

Many people contributed their time and their ideas to the material in this report. We would particularly like to mention five people who served on the advisory committee for an earlier draft: Eng. Shaul Arlossorof, Dr Karen Assaf, Jean-Marie Barat, Prof Abed Rabbo, and Prof Hillel Shuval. They were helpful even when, in many cases, they did not agree with the views we express here. We should also recognize the contribution of the Geneva Initiative which provided initial funding for the work. We must also recognize the work of many people in the Palestinian and the Israeli offices of Friends of the Earth Middle East who helped with the editing and production of the report. Finally, but in some ways most importantly, we want to thank the former Czech diplomat and current Director of the Energy-Water-Environment Programme at the London School of Economics, Pavel Seifter. He was our guide, our advisor, our critic and, at some times, our host throughout the entire process from initial conception to final editing. He was also instrumental in bringing the support of Forum 2000 to our work after other funding ran out. Though neither Jew nor Arab, neither Israeli nor Palestinian, he is true friend of peace in the region.

NOTE ON POLITICAL GEOGRAPHY AND METRIC CONVERSIONS

The reader may be puzzled by the use of different terms: future State of Palestine, West Bank and Gaza Strip, and Occupied Territories to designate what many people perceive as the same territory. These are three distinct terms that do not designate the same territory. The future state of Palestine has not emerged yet, and its borders are still being negotiated. This term refers to a state that includes a government, a defined territory, and a specific population. The West Bank and Gaza Strip are geographical terms that designate two precise territories. The West Bank designates the portion of the British Mandate over Palestine that was annexed by Transjordan when it became Jordan. This territory includes East Jerusalem. Israel occupied the West Bank, the Golan Heights, the Sinai and the Gaza Strip in 1967. Jordan relinquished all administrative ties with the West Bank in 1988. The Occupied Territories designate territories that are under Israeli Occupation. The Knesset (the Israeli Parliament) passed a law to annex East Jerusalem in 1967 and another law to annex the Golan Heights in 1981. However, it never passed a law to annex either the Gaza Strip or the West Bank apart from East Jerusalem, and it later withdrew from both the Sinai and the Gaza Strip. Consequently, Israel no longer considers East Jerusalem and the Golan Heights as occupied territories while the international community does. The choice of each term, future State of Palestine (commonly shortened to just "Palestine"), West Bank and Gaza Strip and Occupied Territories has therefore been carefully made each time it is used so that it designates a distinct reality that could be acceptable to both parties in each clause where it appears.

Water quantities are presented in litres, cubic metres and millions of cubic metres (Mcm). In English units, one litres is equal to 0.264 gallons (approximately ¼ gallon) and one cubic metre contains 264 gallons; one Mcm is equal to 811 acre-feet.

PREFACE

This report by EcoPeace / Friends of the Earth Middle East puts forward a new proposal for joint management of water shared by Israelis and Palestinians. The material was originally developed in response to the need to complete the terms of the original version of the Geneva Initiative. That Initiative was presented in December 2003 to the peoples of Israel and of Palestine by individuals outside normal diplomatic or official channels. As originally written, Article 12 in the Accord identified the need for attention to fresh water, but that Article was left empty with only the words "still to be completed." In an attempt to bring the Accord up to date, officials of the Geneva Initiative came to Friends of the Earth Middle East (FoEME) in 2007 to propose a contractual relationship under which FoEME would prepare draft material on fresh water that could be used to complete currently vacant portions of the Accord. FoEME asked for and received power to engage the analysts to do the drafting and to establish a review process for their work. As well, the Geneva Initiative agreed that the results of FoEME's work would be accepted in whole or not at all. Subsequently, FoEME engaged Dr. David B. Brooks of Canada and Dr. Julie Trottier of Canada and France to undertake drafting of the Article on fresh water, which they did over about 18 months in 2007 and 2008.

The Geneva Initiative eventually decided not to adopt the draft Article prepared by Brooks and Trottier, in favour of an alternative formulation published in 2009 (www.heskem.org.il). However, FoEME believes that the ideas and the institutions that Brooks and Trottier proposed deserve to reach a wider public. In concept, it is a modern approach to managing water that flows along, across or under a state border. Therefore, we have renamed the proposal originally prepared for the Geneva Initiative as the FoEME Proposal for Joint Management of Water Shared by Palestinians and Israelis, and we present the Proposal in Chapter 4 below in the belief that it can make a significant impact on the peace process. An earlier version of the material in that chapter can be found in the article by Brooks and Trottier in the March 2010 issue of the Journal of Hydrology (Brooks and Trottier, 2010), and a critique of their article by Shuval in the July issue (Shuval, 2010).

Though designed explicitly for Israel and a future State of Palestine, the FoEME Proposal has much wider applicability. Indeed, it should be considered for any place in the world where watershed boundaries and national, state or provincial boundaries do not coincide.

Gidon Bromberg, Nader Al Khatib and Munqeth Mehyar,
Israeli, Palestinian and Jordanian co-Directors of EcoPeace
/ Friends of the Earth Middle East
November 2010

EXECUTIVE SUMMARY

Transboundary water agreements are usually conceived as allocation agreements. In other words, water is treated as if it were a pie to be divided among the riparian states. This approach works for land, which is stable, but not for water, which not only moves along, across and under political boundaries but can be used over and over from the time it originates as precipitation until it eventually finds its way back to the sea or evaporates or seeps into a deep aquifer. Though fixed allocations are sometimes useful to avoid conflict and solve pressing problems in the short term, they are not appropriate as a way to ensure efficient, equitable, and sustainable management of shared water over the long term. Older formulations of legal regimes for allocating water, such as First-in-Time/First-in-Right, are gradually being replaced in most parts of the world. In any event, they have no justification in this region after more than 50 years of military occupation of Palestinian land. Newer approaches emphasize the duties to use shared water in ways that are reasonable and equitable, and that avoid harm to neighbouring states. The trick, of course, is to define those terms in ways that are acceptable and applicable in specific circumstances, which brings us to the focus of this report by EcoPeace / Friends of the Earth Middle East (FoEME).

The FoEME Proposal adopts a joint management structure for Israel and the current or any future government of Palestine that allows for ongoing conflict resolution concerning water use -- and does so in a way that effectively de-nationalizes and de-securitizes water uses. That is, water is shared by rules that are designed to protect the ecosystem for everyone's benefit, and then deliver water to different parties in ways that meet their needs and allow for their development without resorting to arguments of national security or beggar-thy-neighbour development.

Joint management of water is never easy, but it is particularly difficult for Israelis and Palestinians because of the many years of conflict between them, their different rates and patterns of economic development during those years, and the almost diametrically different approaches to water management they have adopted - Israel largely top down; Palestine largely bottom up.

The core of the revised approach to water shared by two sovereign peoples lies in a process of ongoing mediation and conflict resolution with the only bottom lines being the parallel needs for equity and for sustainability. Four bodies are critical to the proposal. Two senior bodies, each responsible to their respective governments, guide the process: A **Bilateral Water Commission** and a **Water Mediation Board**. Each is composed of an equal number of Israeli and Palestinian representatives plus one member from outside the region. If voting is necessary, the rules are designed to prevent either side from dominating the other. The Bilateral Water Commission would replace today's Joint Water Committee but

with responsibility for all shared water, not just Palestinian water. It makes key decisions on rates of extraction and of deliveries based on advice from a subsidiary body known as the **Office of the Science Advisors**, which is made up of staff appointed or seconded by the two governments. Should the Bilateral Water Commission find itself unable to accept a decision of the Science Advisors, or should any group or community wish to oppose a decision, the Water Mediation Board can take action. Advised by another subsidiary body, the **Local Water Management Board**, with the responsibility to advise and, if appropriate, represent local bodies, the Water Mediation Board has a wide range of tools available to guide a process of seeking resolution, including public forums and scientific investigations. In the end, the success of the process will be indicated less by the number of disputes successfully mediated but by the (less easily documented) number that are resolved by the normal give and take of negotiations that never come to the table for formal mediation.

Throughout the process, the primary goals of equity and sustainability are linked, on the one hand, to the need to protect financial capital so that the management of water is economically efficient in principle, and, on the other hand, to the need to retain social and institutional capital so that any resolution of issues related to shared water is actually implementable in practice and on both sides of the border. Though specifically applied to water shared by Israelis and Palestinians, the objectives, principles and institutional structure are relevant to any place in the world where transboundary water divides rather than unites two or more peoples. The process is therefore much more in the realm of social science and conflict resolution than of physical science and hydrology, though of course those disciplines provide the context within which any institutional design must operate. The report concludes with comments on next steps to take in order to move the FoEME proposal forward in the short term and in the long.

Israel claims to have created the first modern national water law with adoption of its Basic Law on Water in 1959. The proposal in this report is for Israelis and Palestinians to create the first modern bilateral water agreement, something that can be carried over into the Final Status Agreement between the current State of Israel and the future State of Palestine.

CHAPTER 1

FRESH WATER IN THE ISRAELI-PALESTINIAN PEACE PROCESS

Resolution of issues related to fresh water that is shared by Israel and Palestine will not alone bring about peace between the two peoples. State borders, Israeli settlements, refugees, and Jerusalem far outweigh water as divisive issues. However, in the absence of a just resolution of water issues, no peace can be complete. Further, in the absence of *sustainable* use of water by both peoples, overall social and economic development will be threatened, and so too will be stability and peace for the region.

Politics, Borders and Water

During the 1950s, President Eisenhower's special envoy, Eric Johnston, went from capital to capital in the region trying to achieve an agreement on water among the different states. These negotiations and the ensuing Johnston Plan treated water in a narrow, quantitative manner. Water, a mobile resource, was to be divided up in the same way as land, an immobile resource. The political problem concerning water was therefore defined as if it were a pie to be shared between two parties, and the political problem was limited to determining how big each portion would be. This approached paved the way for water negotiations throughout the rest of the 20th century up to and including the Oslo agreements.

Israel and the Palestinian Authority have yet to achieve an agreement concerning water. Yet, academic and development specialists have supplied them with an impressive number of studies about fresh water in the region. If the problem concerning water is simply one of determining adequate allocations for each party, how can we explain this lack of success? No one challenged the initial formulation of the water issue as a quantitative one - that is, either specific amounts or percentage shares - so, particularly after creation of the State of Israel in 1948 (Alatout, 2008), almost everyone began to search for answers to the question by looking for additional sources of water. However the pie might be sliced, more water would allow all portions to be larger. The inevitable result of this approach has been that both analysts and politicians locked themselves into a focus on supply management. Resolution of the water conflict, it was thought, would only be achieved if a technical solution brought more water to both parties. This approach carried over into the Oslo talks when water issues, defined as "water resources," were considered a technical issue and issues of water quality

separated off into separate talks on environment. It is this inappropriate definition of the problem that, we believe, is now blocking resolution of water issues that separate Israelis and Palestinians.

A New Approach

The FoEME Proposal challenges these assumptions, and therefore challenges the later developments based on those assumptions. It starts with the following observations:

- Water can not be considered as a pie to be shared and the water conflict cannot be reduced to a question of determining the right allocations for two parties. As a result of climate change, renewable water resources are likely to decrease in the Middle East, with particularly severe effects on agriculture. (Freimuth et al., 2007; FAO, 2008). Quantitative allocations that are possible today may very well be impossible in a few years simply by virtue of climate change.

- Determining once and for all the "right" allocations for the two parties is impossible because demographic change and economic development will affect demand for water in unforeseeable ways. Quantitative allocations that seem equitable now will likely be considered inequitable in a few years by one or the other party.

- Water is a mobile natural resource. Each drop is used several times between the moment it falls as precipitation and the time it reaches the sea or evaporates or evapotranspirates. During that trajectory, the quality of the water is generally degraded as it is used over and over again. A raindrop that falls on the West Bank may first resurface in a spring where it is used a first time within a Palestinian farmer-operated irrigation system based on a communal property regime. It then returns to the aquifer, probably laden with pesticide or fertilizer, and reappears in a well operated by the Palestinian Authority or an Israeli well operated by Mekorot, Israel's national water company, to supply drinking water to an Israeli or Palestinian municipality. The same cubic metre of water is accessed and used several times by different users organised to manage water differently according to their own conception of communal property regimes, public property regimes, or private property regimes.

- Every time a water drop is used, the set of actors determining how it will be used, to which purposes and how to prevent it from being contaminated is organized differently. These various polities all need to be considered in the elaboration of an agreement on sharing water.

This proposal therefore treats the conflict over water in a new manner. It is not just of concern for two central institutions, one state and one proto-state, that deploy their policies over a national territory. Instead the proposal treats the conflict as of concern for a great number of institutions that deploy their policies over a great variety of scalar levels. Instead of trying to resolve the conflict over water by determining "just" and permanent allocations of water to the two parties, it tries to integrate the various institutions that access, use and release water in the environment into a flexible framework that would allow sustainable and equitable management of the resource.

Nature of the Task

Providing for the water needs of the region requires that any method for joint management of the shared fresh water resources in Israel and Palestine must simultaneously satisfy three general goals. Management must be economically efficient, socially and politically equitable, and ecologically sustainable. Several of these terms require elaboration to ensure that they are understood in the way that they are intended in this proposed agreement, and that elaboration will be found in Chapter 4. For the moment, it is only necessary to accept that the need to satisfy all three goals simultaneously in itself requires a new approach to shared management of water.

Flexibility, not rigidity, is needed for effective joint management of shared water. The draft proposal first defines those bodies of water that are shared by the two Parties and then establishes equal rights to that water. From this basic position, the proposal provides for continuous, cooperative water management based on agreed-upon rights and responsibilities as well as ongoing monitoring and dispute resolution mechanisms.

The search to achieve the three goals will inevitably bring currently hidden or suppressed conflicts between different interest groups to the surface. To deal with these conflicts, a dispute resolution process is proposed. This process does not aim to be a judicial authority entrusted with implementing a law or a given clause in a treaty. Rather, it aims to be a permanent mediation institution with the main objective of settling disputes, as informed by appropriate investigations. However, the *bottom line is to ensure sustainability of water sources and protection of ecosystems, for, in their absence, neither equity nor efficiency can be assured for very long*. Secondary goals are to allow extensive public participation and to promote transparency of process and of results. The proposal is also designed to ensure that processes and results are resilient in the face of periodic droughts and the effects of climate change. As well, it takes into account expected population growth and economic development in Israel and in Palestine.

Premises

The draft Proposal is based on certain premises, some of which reflect the future economic and political situation. In particular, the agreement will be most easily implemented if formal borders between the existing State of Israel and the new State of Palestine have been established. However, an agreement on fresh water does not necessarily depend on those borders. In their absence, the Green Line will be taken as the border between Israel and the West Bank for the purpose of defining what water is and is not shared. In either case, the draft proposal presumes a sufficiently well developed political, administrative and financial base in Palestine to permit implementation of the agreement.

Several other premises are critical to seeing where and how to share water efficiently, equitably and sustainably:

- The whole region of Israel and Palestine is subject to climatic variability that subjects it to frequent and severe droughts, as well as occasional intense rainfalls and flooding. The need to design a regime that will be resilient to those effects is implicit in what follows, but their origin - whether natural or anthropogenic - is irrelevant.

- Since 1948, and particularly since 1967, Israel's gross domestic product has greatly exceeded that of the West Bank and Gaza. In parallel, Israelis have far surpassed Palestinians in average per capita income and in providing basic needs such as electricity, housing and employment, as well as health care, educational facilities, and overall infrastructure development.

- All Israelis (with the exception of Bedouin in unrecognized villages) are adequately supplied with fresh water for domestic use, but many Palestinians do not have access to even the necessary minimum quantities of fresh water, which are defined for our purposes as 20 litres per person-day of potable water plus another 30 litres per person-day of water of adequate quality for other household uses.

- Palestinians are far more dependent on agriculture than are Israelis, whether viewed from the perspective of local livelihoods or from the perspective of the share of gross domestic product coming from agriculture. By implication, the marginal value product of additional water on Palestinian farms is significantly greater, even with today's forms of agriculture, than on Israeli farms. Over time, the role of water in Palestine can be expected to decline, just as it has in Israel, and the FoEME proposal is designed to accommodate that shift.

- Israel has, at least since 1959 when it passed its Basic Law, on fresh water had a nearly totally centralized water management system. In contrast, Palestinian territories have mostly remained with decentralized management of water. The need to bring those highly differentiated management approaches within one institutional framework for joint management of shared water requires agencies that can relate both upward to central authorities and downward to individual communities, and react sympathetically to their differing concerns, time frames, and constituencies.

- Finally, but obviously far from least important, the contentious political situation since 1948 has influenced water use and water management. On the one hand, there is a legacy from past negotiations over water, as with the Johnston plan, and experience from more recent negotiations, as with the Oslo agreements. On the other hand, a great deal has occurred at the local level with, ironically, as many examples of cooperation over water as of distrust about water - for example, FoEME's Good Water Neighbours project (foeme.org/www/?module=projects&record_id=32).

Organization of the Report

The next two chapters provide the context against which the FoEME Proposal for joint management of water by Israelis and Palestinians must be viewed. Chapter 2 provides a short review of geographic and hydrologic conditions that influence the life of Israelis and Palestinians, and Chapter 3 follows up with a brief review of international water law as it pertains to transboundary water, as well as of various proposal managing water in the region from about 1920 to the present. Readers who are familiar with these issues can go directly to Chapter 4, the core chapter, which presents the FoEME Proposal itself, or more accurately a summary of it as more detail is available in background materials. The final chapter suggests next steps to move from Proposal to a formal Agreement between Israel and the Palestinian Authority in anticipation of the creation of a State of Palestine - in effect, how the proposal for a water agreement between Israel and the future State of Palestine can be carried forward in the political and the public arenas. Finally, Annexes A and B offer, respectively, biographical notes on the authors and a pair of academic reviews of the FoEME Proposal.

CHAPTER 2

GEOGRAPHY, HYDROLOGY AND SHARED WATER RESOURCES

This chapter first provides a brief overview of the hydrogeology of water resources in Israel and the Occupied Territories, and then specifies which of those water resources are to be designated as "shared" within the context of this proposal. Water resources that are not shared remain subject to the exclusive sovereignty of the state within which they lie.

Fresh Water in Israel and the West Bank

Reviews of the water resources available to Israelis and Palestinians appear in many places (Hillel, 1994; Lonergan and Brooks, 1994; World Bank, 2009), so only a brief summary will be given here. Figure 1 shows the region occupied by Israel and the Palestinian Authority with the 1949 armistice line, commonly called the Green Line, and the larger surface water bodies and aquifers. The ridge (where many of the oldest cities are found) separates drainage westward to the Mediterranean from drainage eastward to the rift valley. It also serves as a rain shadow with lower levels of precipitation on the eastern slope compared with those on the western slope.

See Map (Figure 1)

Aquifers

Two main aquifer systems underlie Israeli and Palestinian land: the Mountain Aquifer and the Coastal Aquifer. The Mountain Aquifer underlies the ridge mentioned just above. It is a karstic system that carries high-quality water with relatively rapid rates of flow from intakes mainly located on the West Bank in three directions, as shown on Figure 1: an eastern block that lies almost entirely under the West Bank; a northeastern block drains through springs in northern Israel to the Jordan Valley; and a western block, by far the largest, drains to the Mediterranean through springs in Israel.

The Coastal Aquifer is made up of a series of partially disconnected lenses in a sandstone series of rocks that dip gently from the coastal areas of Israel and the Gaza Strip toward the Mediterranean Sea. A relatively shallow aquifer, it has long been tapped to supply local communities and farms along the coastal belt. In recent years it has been subject to pollution from agricultural chemicals and to seawater infiltration as a result of over-pumping.

Coastal Rivers

A number of rivers rise in the highlands, some in the West Bank and some in Israel, and flow to the Mediterranean Sea. These rivers have been heavily exploited for local water uses and wastewater disposal. Many had become little more than open sewers, but in the last few years their value for ecological services, for recreation, and for urban amenities has come to be acknowledged. With significant funding from the Israeli government, reclamation has yielded results evident in better water quality and the return of species that had been extirpated.

Jordan River System

The Jordan River originates from three sources, the Dan Springs contributing about half the flow, and the Hasbani and the Banyas, each contributing about one-quarter of the flow. The Jordan flows from the conjunction of the three springs in Israel to Lake Tiberias (Kinneret, in Hebrew), which lies entirely within Israel according to the 1949 armistice line, and then on to the Dead Sea. Its only major tributary is the Yarmouk River, which flows from highlands to the east and which, for part of its course, marks the border between Jordan and Syria. Just northeast of its confluence with the Lower Jordan River, the Yarmouk marks the border between Israel and Jordan. The Lower Jordan River in turn mark the border between Israel and Jordan north of Bezek Stream; south of Bezek Stream, it marks the border between Jordan and the West Bank down to the Dead Sea. Water quality in the lower Jordan River was once good but is now 98% diverted and seriously degraded by sewage and runoff from agricultural fields (FoEME 2010).

Other Sources of Water

Approximately 70 percent of Israel's municipal waste water is captured, treated to secondary and in some cases tertiary levels, and reclaimed for agriculture. There are plans to expand the system until by 2020 some 20% of total water supply and 50% of irrigation water will come from treated waste water (Arlosoroff, 2007). The marginal cost (beyond collection and secondary treatment of urban sewage) is significant but well below the cost of additional fresh water. Very little of Palestine's waste water is currently reclaimed and treated for reuse, though some waste water originating in the West Bank is treated in Israeli plants.

Desalination plants located along the Mediterranean coast now supply about 300 Mcm of fresh water per year, with at least as much additional capacity coming on stream within the next five years. Already, "desal" supplies around 20 percent of Israel's potable water needs. Though expensive from both energy and capital cost perspectives, the delivered cost of desalinated water compares favourably with that of other alternatives

to provide additional drinking water. However, desal water is too expensive (and ironically too pure) for irrigation, which is by far the largest use of water for both Israelis and Palestinians. The process also has impacts on the environment, as with the release of brine, that have not been fully assessed. FoEME's position (2010) is that, though some level of desal is necessary, it should be the policy choice of last, not first, resort, with much greater attention devoted to better management of existing water supplies.

What Water is Shared and What is Not

Any agreement for joint management of water must be clear about exactly which bodies of water are shared and therefore the object of the institutional structure described in this article. Given the path that water follows from source to sink, designation of water as "shared" is necessarily a political choice. As well, it is useful to apply some rules of reason. For example, we suggest that an aquifer that lies 90% or more under one side of the border be treated as non-shared water. Special arrangements also have to be made for water treatment plants that are located on or very close to the future border between Israel and Palestine and that receive waste water from across the border.

Skipping many details, most of the water that occurs in or under Israel and Palestine other than that in the Coastal Aquifer, the Arava Valley, and some of the aquifers and rivers in the Galilee, is shared water. In particular, the Western and Northeastern blocks of the Mountain Aquifer, are shared water, as are all of the coastal rivers that rise in the highlands and that empty into the Mediterranean Sea. However, the Eastern block of the Mountain Aquifer is largely contained within the West Bank and can therefore be considered Palestinian. The Coastal Aquifer is made up of a series of partially disconnected lenses that can, using the rule of reason, be considered as either Israeli or Palestinian, but not shared. Should current research, such as that by Vengosh et al. (2005), indicate that the interconnections are significant, this position could be reconsidered.

Rules for sharing the Jordan River have to be different because of the existing Peace Treaty between Israel and Jordan. Annex 2 of that treaty not only divides the water in the river in ways that are inconsistent with the approach we propose but also totally ignores Palestinian rights to water. In order to compensate for this gap but live within the provisions of the treaty, we recognize that Jordan is one of the most water-stressed states on earth (Scott, 2003; Alkhaddar, 2005), so its allocation cannot be reduced. By implication, then, the water allocated to Israel under Annex 2 must be treated as if it were allocated jointly to Israel and Palestine. Finally, in accord with the cut-the-pie approach of the Treaty, and, admittedly in the absence of any fully rational choice, we suggest that the Israeli allocation be divided equally between Israel and the future State of Palestine.

CHAPTER 3

INTERNATIONAL WATER LAW AND OF WATER MANAGEMENT PROPOSALS FOR THE REGION

This chapter has two objectives:

- The first section will describe in very broad terms existing international law for both surface and underground water that flows along, across or under an international border.
- The second section will summarize past attempts to create an agreement for sharing the water of the Jordan valley at the international level.

International Law of Shared Water Resources

Historically, international law over shared water resources leaned toward one of two principles of sovereignty. In general, upstream states preferred the principle of absolute territorial sovereignty, which gives a state the exclusive right to use and dispose of international waters that flow through its territory. In contrast, downstream states preferred the principles of absolute territorial integrity, which implies that downstream users are to be provided with a water supply that is unaltered in terms of volume and quality. More recently, the rule of law dealing with shared water resources has been based on general goals and obligations arising from United Nations rulings or inferred from existing agreements between states. According to Rahaman (2009), they emphasize five principles and obligations inherent in joint management of shared water bodies:

- principle of reasonable and equitable utilization
- obligation not to cause significant harm
- principles of notification, consultation and negotiation
- principles of cooperation and information exchange
- peaceful settlement of disputes.

He suggests that these principles and obligations are now so widely expressed in treaties, declarations and other international instruments that they can be taken as "soft law" ("customary law") even when not explicitly stated. As Caponera (1985) notes, "reasonable and equitable" cannot be considered rules of law, but they do amount to a rejection of both historic principles: absolute territorial sovereignty and absolute territorial integrity. They also supplant or amend the increasingly outmoded "first-in-time; first-in-right" approach to determining priority in access to water.

Special Attention to Ground Water

Ground water has only been formally included within the scope of legal discussions about international drainage basins since the Helsinki Rules of 1966 (Hayton and Utton 1989). Just as with surface sources, many ground water basins extend under political boundaries. The Disi Aquifer, for example, underlies Jordan and Saudi Arabia, and the Northeast African Aquifer underlies parts of Chad, Sudan, Libya, and Egypt. Only the specific political aspects make the conflict over shared aquifers of Israel and Palestine unique. Dealing with transboundary aquifers becomes particularly difficult when a political boundary lies between the location of the aquifer outflow and its recharge area, which is exactly the case for the western and northeastern blocks of the Mountain Aquifer in Israel and the West Bank.

General principles of management for states sharing groundwater resources are similar to those related to surface water, as listed just above. However, early applications of these rules to ground water were all limited in one way or another. The International Law Association (ILA) addressed these limitations by adopting the Rules on International Groundwaters, also known as the Seoul Rules, in 1986. According to Eckstein (2005), "The Seoul Rules reinforced and expanded the Helsinki Rule that ground water is a proper subject of international law by including all types of aquifers."

Ten years later, the United Nations International Law Commission (UNILC) developed a more comprehensive set of guidelines that were adopted by the UN in 1997 as The Convention on the Law of Non-Navigational Uses of International Watercourses. Commonly called the "Watercourse Convention," It explicitly recognizes the interaction of surface and ground water, and defines as "international" any aquifer that has hydrological links to transboundary surface water, even if the aquifer itself is within one state (Eckstein and Eckstein, 2003). Despite the years of work, and overwhelming support in the General Assembly, only a few more than half of the 35 states required to bring the Watercourse Convention into force have ratified it to date.

Despite half a century of active work on international law, most analysts believe that even the Watercourse Convention fails to address all types of transboundary aquifers. In an effort

to bring this somewhat muddled situation together, the ILA reviewed everything that had happened since the Helsinki Rules were announced and made some important revisions. The result was the Berlin Rules on Water Resources published in 2004. This document goes beyond both the Helsinki Rules and the Watercourses Convention in several ways (Salman, 2007). For one thing, it applies to both domestic and transboundary freshwater resources. It also recognizes the right of affected people to some role in decision-making and requires states to protect the ecological integrity of water-based ecosystems. And, in a more subtle change, the Berlin rules shift the emphasis from the right of riparian states to a reasonable and equitable share of the water to their obligation to manage the shared water in a reasonable and equitable manner.

The UN International Law Commission (ILC) began to codify law specifically focused on transboundary aquifers in 2002. By 2008, with the support of UNESCO's International Hydrological Programme, the ILC was able to prepare a draft document with preamble and 19 articles for submission to the United Nations General Assembly. This document, if adopted, will expand the scope and force of the "Watercourse Convention" by covering all aquifer types (Stephan, 2009). In December 2008 the UN General Assembly adopted a resolution (A/RES/63/124) that encouraged states sharing an aquifer to consider the draft articles as a basis for management of the aquifer and also to consider further "the question of what form might be given to the draft articles."

Despite evident progress in the realm of international law, the Franco-Swiss agreement on the Genevese Aquifer (1977) was until recently the only treaty dealing specifically with management of a transboundary aquifer." In 2010, a second formal agreement was signed by Argentina, Brazil, Paraguay and Uruguay, the four nations overlying the huge Guarani Aquifer. Neither of these agreements is particularly comprehensive, and much is left to the decision of individual nations.

Other treaties incorporate some elements of an agreement on joint management of shared ground water. Annex 2 of the Israeli-Jordanian Peace Treaty (1994) has articles that are specific to ground water underlying the border. Also worth noting are the agreements among Chad, Egypt, Libya and Sudan for data sharing and modeling on the Nubian Sandstone Aquifer (2000), and among Algeria, Libya and Tunisia for consultation on the Northwest Sahara Aquifer System (2002).

In parallel with these efforts at the United Nations, starting in the 1980s a draft treaty for international law of aquifers was developed by an international group of specialists (Hayton and Utton 1989). Generally known as the Bellagio Draft Treaty and intended to be an unofficial codification of rules, or soft law, the draft covers many topics, among them transboundary aquifers. It incorporates a series of dispute-resolution techniques up to and including

formal arbitration or submission to the International Court of Justice. According to the late Fadia Daibes-Murad (2005, 127), who was based at the International Water Law Research Institute, the Bellagio draft treaty "presents the most advanced framework in relation to transboundary groundwater regulation, offers the best suited mechanisms and procedures for the protection, utilization and development and management of such resources." It also has the distinction of being among the first documents of its kind to recognize explicitly the need to incorporate sustainability of the resource as one of the principles for groundwater extraction (Kemper et al., 2003).

Balancing Reasonable and Equitable

The Helsinki Rules of 1966 and the ILC report of 1983 provide a long list of factors that should be considered in determining what is "reasonable and equitable." Without denying that each of these factors is relevant, nor that the list itself reflects an advance in thinking, their value is limited in the absence of priorities among them or ways to make trade-offs between them. However, in at least two areas more can be said. One is whether existing uses should have priority in standing over future needs; the other is how to balance the principle of reasonable and equitable use with the parallel principle to avoid substantial harm to other parties. Current work suggests that the choice between existing uses and future needs is being resolved in favour of the latter. Both Lautze and Giordano (2006) and Wolf (1998, 2000) have argued that most successful agreements about sharing water favour a needs-based rather than a prior-use basis.

The dilemma of balancing reasonable and equitable use with the prevention of significant harm is less tractable. Salman (2007) shows how different formulations of the text of proposed agreements seem to give priority to one or the other principle, or, as in the case of the Berlin rules, to indicate that they have equal standing. However, Brooks and Linton (forthcoming) argue that the conflicts between those two important principles can be resolved in the case of aquifers. Given that aquifers are distinguished from surface water by a) their sensitivity to pollution and b) the near impossibility of decontamination, they suggest that *for transboundary aquifers the principle of no significant harm should have priority over reasonable and equitable use*. If the goal of no significant harm is not adhered to, the goal of reasonable and equitable use will, over time, come to have less and less value.

Limits to the Usefulness of International Law

The efforts to manage water shared by Israelis and Palestinians illustrate a serious limitation to the usefulness of international law. That law considers states and the institutions they may create as the only legitimate actors on the international scene. As Israel has existed as

a state for over 60 years while a Palestinian state still has to emerge, a proposal concerning water between Israel and the future State of Palestine that would only consider international law would necessarily be unfavourable to Palestine. The Oslo Agreements did create the Palestinian Water Authority, but it appeared within an institutional landscape where many local water management institutions had been functioning for decades, if not centuries. The result today is that water is managed centrally in Israel by the state whereas only a portion of water used by Palestinians is managed by the Water Authority. Most water in Palestine is managed by a multitude of local property rights systems that have yet to be recognised formally. Using only the categories offered by international water law to propose an institutional solution to water management would both disadvantage the Palestinians in principle and likely end up being ignored in practice.

Past Water Sharing Proposals for the Jordan River Basin

The 1920s

The management of reticulation networks in Jerusalem was already the object of international politics in the 19th century. (Lemire, 2006) However, until the 1920s, the bulk of water used in the region went to irrigation and was the object of local politics only. Very intricate local property rights systems had been developed in many localities, such as Jericho, for centuries. The specific perception of water in the Jordan Basin as an international problem of quantitative allocations to various parties arose in the 1920s when the French and British government established their mandates over the remains of the Ottoman Empire.

This section will review the series of attempts to reach agreements over water resources specific to the Jordan Basin. The discussion begins with the British-Palestine Mandate of 1922, which established Palestine (excluding Trans-Jordan) as a distinct political unit. It also marked official international recognition of the historical connection of the Jewish people with the land of Palestine, and it spawned the development of a Jewish agency to assist with the administration of Palestine and, in the minds of many Zionists, implicitly provided for an independent Jewish state (although this was not part of the Mandate). Soon after, a number of national development agencies and projects were created, including the Jewish-owned Palestine Electricity Corporation, which was founded by Pinhas Rutenberg. In 1926, the Corporation was granted a 70-year concession to the waters of the Jordan and Yarmouk rivers for the purpose of generating electricity, and subsequently a dam was built at the confluence of the two rivers. It was through this concession that Arab farmers were denied the right to use the waters upstream of the junction of the two rivers for any purpose without the permission of the Electricity Corporation, permission that was never granted (Hosh and

Isaac 1992). Although the hydroelectric plant was damaged and ceased to operate following the 1948 war, Wolf (1995) says that Israel later used the Rutenberg concession to argue for a greater share of Yarmouk River water.

The 1930s

During the first half of the 1930s, the issue of fresh water was absorbed within questions about the absorptive capacity of Palestine, which became a key issue as Jewish immigration and settlement in the region and, concurrently, Arab opposition, increased (Lonergan and Brooks 1994). The first regional water supply project in Palestine was implemented in 1935-36 and involved supplying water to the western Galilee (Fishelson 1989). This project was followed by the assignment of M. Ionides by the British to be Director of Development for the East Jordan Government for the express purpose of assessing the water resource and irrigation potentials of the Jordan River Basin. The Ionides Plan contained three primary recommendations (Naff and Matson 1984; Hosh and Isaac 1992):

- That Yarmouk River floodwaters be diverted along the East Bank of the Jordan River and stored in Lake Tiberias (Kinneret);
- That these stored waters, along with a small quantity of Yarmouk River water, be diverted through a new canal (the East Ghor Canal) to provide irrigation for lands east of the Jordan River; and
- That irrigation water of the Jordan River be used primarily within the Jordan River Basin.

The 1940s

In 1938 Walter Clay Lowdermilk, a director of the US Soil Conservation Service, was sent to the region to examine the issue of land conservation. He felt that, with appropriate water management, the water available in the Jordan River basin could sustain a much larger population than existed at that time. Included in his initial idea was the formation of a regional water authority based on the Tennessee Valley Authority (TVA) in the United States. In 1944, he published his comprehensive plan for the region, entitled Palestine: Land of Promise. The plan proposed that, by exploiting unused water resources adjacent to Palestine, particularly the Litani and Yarmouk rivers, water could be diverted for irrigation throughout the Jordan Valley and south to the Negev (Lonergan and Brooks 1994). However, use of the Tennessee Valley Authority as a model had had a major defect. It precluded recognizing the social capital produced by the local property rights systems that were used to manage

irrigation water. It served to make them invisible when elaborating national water plans or when entering international negotiations concerning water.

At this same time, and shortly after its founding in 1937, Mekorot also prepared a plan for resolving the water resource problems of Palestine. Its plan proposed a "national" water resource project that focused on irrigation and hydroelectric development, and incorporated both surface water (from the Yarmouk, the Yarkon, and the Jordan, as well as springs and floodwaters) and groundwater (Fishelson 1989). The plan seems to have had an element of "chutzpah" in that it also suggested that the Mandate border be redrawn to include the headwaters of the Hasbani, Dan, and Banias rivers, eastward to include territory for a conduit along the shores of Lake Hula, and upstream on the Yarmouk to allow for a set of impoundments along the river (Fishelson 1989; Wolf 1995).

There was strong Zionist support for both the Lowdermilk and Mekorot plans, and the World Zionist Organization then asked James B. Hays, an engineer who had worked on the Tennessee Valley Authority in the United States, to draw up development plans based on Lowdermilk's ideas. Hays agreed with Lowdermilk's estimates of the absorptive capacity of Palestine and published his plan in a book entitled T.V.A. on the *Jordan*. His plan contained seven elements:

- Development of groundwater resources;
- Development of the Upper Jordan River's summer flow for irrigation of nearby lands (including diversion of the Hasbani River for irrigation, and assumed Lebanese agreement);
- Diversion of Yarmouk River waters into the Sea of Galilee and their storage there;
- The Mediterranean Sea-Dead Sea Canal that had been proposed by Blass;
- Recovery of the Jordan River's winter flow for irrigation of the coastal plain;
- Reclamation of the Hula swamps. The Hula Valley was a marshy area that was flooded by winter flow from the Jordan River; the plan was to construct a series of drainage canals to control both floodwaters and groundwater levels and convert the marsh into fertile irrigation land; and
- The use of floodwaters for irrigation in the Negev.

Although disagreement remained as to the number of people the region could absorb and the types of water projects needed to provide for population growth, the UN Partition Plan of 1947, the animosities between Arabs and Jews, and the subsequent 1948 War set the stage for inevitable conflicts over water for the next few decades.

The 1950s

The first formal plan for water management in the post-independence period in Israel was the MacDonald Report in 1951 (Wishart 1990). This report outlined the conflicts between Jordan and Israel, and proposed that all developed water remain in the Jordan Valley. The proposal also included the Hays component of diverting the Yarmouk into Lake Kinneret (Hosh and Isaac 1992). However, the Arab states were concerned over sharing a reservoir with Israel, even though it was a much cheaper alternative (Kally 1993), and favoured a plan proposed by M. Bunger, an American engineer working in Amman, which involved the construction of a high dam on the Yarmouk River that would provide water storage and hydroelectric capacity. The dam was to be built at Maqarin, and be a joint project between Jordan and Syria. The dam would also use the winter flow from the Yarmouk to generate electricity for both Syria and Jordan (with 75% going to Syria) (Wishart 1990). Construction of the dam began in 1953, but Israel raised strong objections to unilateral development of the Yarmouk, and pressured the United States to withdraw funding for the plan (Hosh and Isaac 1992).

Accepting that a unified plan might alleviate some of the developing conflicts between riparians on the Jordan, UNRWA asked the Tennessee Valley Authority (TVA) to develop such a plan. In 1952, the TVA requested Charles T. Main, Inc. to produce a "unified plan," which would combine all the work previously conducted by the parties into one combined plan. Borrowing the basic principle from the earlier Ionides and MacDonald proposals, the unified plan was based on irrigation by gravity flow within the watershed only, and also included drainage of the Hula marshes, storage of Yarmouk River water in Lake Kinneret, a Med-Dead Canal proposal, and dams on the Hasbani and Yarmouk rivers for irrigation and power (Lonergan and Brooks, 1994).

In parallel with discussions about a regional water plan, Israel proceeded with unilateral development of the Jordan River in 1953. It began construction on its National Water Carrier at a site in the demilitarized zone north of Lake Kinneret. Syria responded by sending troops to the border and, according to Cooley (1984), firing artillery shells on the construction site. Syria also protested to the United Nations, and the Security Council responded by ordering that work in the demilitarized zone be halted. Israel then moved the intake site for the National Water Carrier to Lake Kinneret, a move that, as Wolf (1995) notes, was "doubly costly" for Israel. Not only was the salinity of Lake Kinneret was higher than the Upper Jordan, which forced Israel to divert saline springs away from the lake and into the Lower Jordan, but also the water now had to be pumped up 250 m from the intake location before heading southward.

Although tensions had been temporarily relaxed by the Israeli decision to move the intake site for the National Water Carrier, the pressing need for a regional solution to problems

involving Jordan River waters and increasing pressures from Congress to resolve the issue of Palestinian refugees resulted, in late 1953, in the appointment by President Eisenhower of Eric Johnston as a special ambassador to lead a mission focusing on unified water development of the Jordan River Basin. The resulting "Johnston Plan" contained three major components:

- Water storage included components from earlier proposals for a dam near Maqarin, and a diversion structure to store winter flows Yarmouk River in Lake Kinneret.
- Water distribution focused primarily on providing water to Jordan's East Ghor Canal, which would then supply most of the surface water to the country.
- Water allocations were based on the principle that Arab states should receive enough water to meet their irrigation needs with the remaining water divided between Jordan (the Yarmouk) and Israel (the Jordan).

Not surprisingly, the Main/Johnston Plan was not acceptable to either Israel or to the Arab states. Israel argued that a regional plan should include all water sources of the region, including the Litani, and considered the allocations it was to receive under the plan insufficient. The Arab states remained concerned about the storage of Yarmouk River water in Lake Kinneret as well as the high allocation given to Israel. Accordingly, both groups prepared alternative proposals. The Israeli proposal, known as the Cotton Plan, was prepared by an American engineer, Joseph Cotton. Included in the plan was a provision for 50% of the water of the Litani River to be used for power production, and an allocation to Israel of 55% of Litani and Jordan waters (compared with 33% under the Main Plan). The Cotton Plan also allowed for the use of Jordan River water outside the watershed (for irrigation in the Negev). The Arab proposal was consistent with the Main Plan in that it required that all waters be used within the watershed, but it reduced Israel's share to 20% and did not include the Litani River. However, all of the parties recognized the need for regional cooperation for efficient utilization of water resources; the primary disagreements were on water allocations and the transfer of water outside the watershed (Lonergan and Brooks, 1994).

Using the two counterproposals, along with a recently completed hydrographic survey commissioned by the Jordanian government, Eric Johnston submitted a revised set of proposals in 1955. The revised "Unified Plan" allowed for interbasin transfer within the context of the allocations to each country and incorporated many of the engineering features of the Main Plan. However, disagreements remained over allocations and international supervision. The Arabs were in favour of direct supervision by an international body, whereas Israel preferred supervision by a small body of engineers from the region. In late 1955, Johnston

reported that "they [the riparians] have made it clear . . . that the technical and engineering aspects of the plan . . . are now satisfactory to them" and that the negotiations had reached the "one inch line" (as cited in Garbell 1965). Israel did grant formal political support to this Unified Plan, but it was never implemented, largely because the Arab states feared that their signature might be taken to imply formal recognition of Israel, which at the time was unacceptable to them (Lonergan and Brooks, 1994).

Wishart (1990) concludes that the Arab states had little to lose by not entering into the agreement. In practice, all of the riparian states unofficially accepted the Johnston Plan, with the exception of Syria, which did not reject it, but simply failed to accept it. As a result, many of the projects outlined in the Johnston Plan were subsequently undertaken unilaterally by one or another state.

It is doubtful whether either Israel or Syria would now accept the Johnston Plan because both have built their water systems in ways that give them more water than their allotments under the Johnston Plan. Any Palestinian government would also likely reject the Johnston plan because it fails to assign any explicit share of water to the Palestinians. Their water was simply included in the Jordanian share, which is not a comfortable situation for a sovereign state. The FoEME proposal also rejects the Johnston Plan, not because of inappropriate allocations but because the basic approach of quantitative allocations is misguided and because all water is treated as if available for human uses with none left for ecosystems.

1955 to 1990

Between 1955 and the beginning of the Oslo Process, there was little discussion about shared water agreements. Countries in the region continued to develop their water resources, commonly at the expense of other countries. Plans for the multipurpose dam (now called the Unity Dam) on the Yarmouk River were revived by Jordan and Syria in the early 1970s, but were again postponed when neither Jordan and Israel nor Jordan and Syria could reach agreement. The dam was finally completed in 2010.

Early 1990s to the Present

Turning to the most recent efforts to define a legally enforceable international agreement, we can now focus primarily on Israel and the Occupied Palestinian Territories. New agreements on water include:

- Interim Agreement between Israel and the Palestinian Authority on the West Bank and Gaza (the "Oslo Peace Accord"), with particular reference to Article 40 of Annex III and its associated Schedules (Numbers 8 through 11).

- Declaration on Principles for Cooperation on Water-Related Matters and New and Additional Water Resources, signed by Israel, Jordan, and the Palestinian Authority in 1996.

- Water Resources Working Group set up by the Madrid Process including, especially, the work carried out by the Executive Action Team (EXACT).

In addition, much "Second Track" (non-diplomatic) literature emerged from academic institutions and from non-governmental organizations during and even after the "Oslo period" of active Israeli-Palestinian negotiations. As one notable example, a team of Palestinian and Israeli academics plus some international development and legal experts met periodically during the last half of the 1990s to produce a model agreement for joint management of the Mountain Aquifer, which is the source of much of their drinking water (Feitelson and Haddad, 1998; 2000). At this same time, the first Israeli-Palestinian efforts to draft acceptable water-sharing plans began to be published (Assaf et al., 1993; Shuval 2007).

CHAPTER 4

THE FoEME PROPOSAL FOR AN ISRAELI-PALESTINIAN AGREEMENT ON FRESH WATER

Treaties and institutional arrangements cannot remain static. Factors like water requirements, use patterns and efficiency of management change with time, as do water management paradigms, practices and processes. [...] It may not be an easy task to formulate dynamic treaties, but one that must be considered very seriously in the coming years. (Varis, Biswas and Tortajada, 2008, p. XI)

Sensational reporting has sometimes presented water as the key problem separating Israelis and Palestinians, but borders, refugees, the status of Jerusalem, and Israeli settlements in the Occupied Territories appear far more contentious to negotiators and researchers alike. Both Wolf and Gleick have demonstrated that, time and again, riparian states collaborate over trans-boundary water bodies rather than fight over them (Wolf, 1998; Gleick, 2000). Israel and Jordan offer a case in point, as exemplified by Annex 2 of their 1994 Peace Treaty.

However, the absence of water wars does not mean that fresh water is free of conflict. For example, urban planning that allows hard surfaces on hill tops can interfere greatly with spring recharge in the adjacent valley. Cities that want water for domestic use can find themselves in conflict with farmers who want water for irrigation and for raising animals. Farmers who decide to line their earthen irrigation canals with cement can prevent infiltration into the aquifer that damages the flow of water in the wells of a nearby village. Domestic cesspits or fertilizers spread on fields can enter the aquifer and damage its quality. Individually or collectively, excessive withdrawals of water may prevent ecosystems from providing a range of services such as decontamination, vegetation and flood control. These are the real water conflicts that occur every day across the world. They need to be resolved, but all too often they are made invisible by a nationalist discourse which portrays water as part of national wealth. Certainly this is true for Israelis and Palestinians who tend to escalate the conflict to a matter of national security.

Rather than concern about international wars, the dominant issue about trans-boundary water is today, as it always has been, ensuring that shared water resources will be managed in ways that are efficient, equitable and sustainable. To achieve those broader goals requires that, in this region as elsewhere, water governance be treated less as a technical issue and

more as a political one (Feitelson, 2002; Blomquist and Ingram, 2003; Molle 2009).

As indicated above, the common approach to sharing water involves dividing the water as if it were a pie; available water is divided among riparian nations by a quantitative formula involving absolute or percentage shares. This was the approach used for the Israel-Jordan Peace Treaty and for the Oslo Agreement; it is currently reflected in proposals put forward by both the Israeli and the Palestinian negotiating teams (Lautze et al., 2005; Lautze and Kirshen, 2009). Unfortunately, though it can avoid diplomatic problems and even resolve some short-term issues, this once-and-forever approach is seriously deficient over the longer term.

This chapter will propose a different approach for joint management of shared water. Though specifically applied to water shared by Israelis and Palestinians, the objectives, principles and institutional structure are relevant to any place in the world where trans-boundary water divides rather than unites two or more peoples.

The first major section of the chapter identifies the defects of quantitative approaches to sharing water. The second section describes the objectives that our proposed agreement is designed to achieve. This preliminary material culminates in the major section where we describe the institutional structure proposed to implement a joint management system for water shared by the State of Israel and the future State of Palestine.

Defects of Quantitative Division of Shared Water Resources

Quantitative approaches to sharing water have three serious defects: securitization, rigidity, and ecological fiction. An issue becomes "securitized" when it becomes portrayed as an essential component of national security. It then leaves the realm of what is negotiable, what can be the object of compromise. Once such allocations have been fixed, changing them is perceived as a threat to national security.

Quantification also leads to rigidity. As a result of climate change, renewable water resources are likely to decrease in the Middle East, with particularly severe effects on agriculture (Freimuth, et al., 2007; FAO, 2008). Quantitative allocations that are possible today may very well be impossible in a few years simply by virtue of climate change. Further, demographic change and economic development will affect demand for water in unforeseeable ways. Quantitative allocations that seem equitable now may be considered inequitable in a few years by one or the other party.

Finally, unlike land, water is a mobile natural resource. Each drop is used several times

between the moment it falls as precipitation on the West Bank and the time it reaches the sea or evaporates or evapotranspirates. During that trajectory, the quality of the water is generally degraded. As well, the water comes to be used within different polities, each with its own structure of power determining the rules of management. It may be used a first time within a Palestinian farmer-operated irrigation system based on a communal property regime before it returns to the aquifer and reappears in an Israeli well operated by Mekorot, the Israeli national water company, to supply drinking water to an Israeli municipality or a Palestinian village. Every time, the set of actors determining how that drop of water will be used, and how to prevent it from being contaminated is organized differently. These various polities all need to be considered in the elaboration of an agreement on sharing water.

It is a key part of our thesis that fixed quantitative allocations of water, even if presented as percentage shares, work against long-term solutions. Our proposal is designed to avoid these defects as much as possible. However, our proposal does presume prior definition of final borders between the State of Israel and a future State of Palestine.

Searching For Consensus On Objectives

A literature review and discussions with water specialists on both sides of the border convinced us that consensus between the two parties could be reached on four broad objectives for shared water management:

- economically efficient water management
- socially and politically equitable (not necessarily equal) water management
- ecologically sustainable water management
- management that would be implemented in practice.

Rahaman (2009) explains how the first three of these objectives fit within the general objective of "reasonable and equitable use," which appears in almost all transboundary water agreements. The last of the four needs further explanation. An agreement can be implemented when all parties to the agreement have the institutional, social and financial means to translate it into practice. Many of the water laws adopted over the last 20 years fail this test. The Oslo agreements and the ensuing Palestinian water law were no exceptions. They created the Palestinian Water Authority as a regulating body entrusted with implementing the provisions of the agreement concerning water (Trottier 1999, 2007). That approach was appropriate for Israel, which, by its Basic Water Law of 1959, had effectively nationalized all water in the nation. However, still today, over 70% of the water actually

used by Palestinians is managed by local or farmer-based institutions. In effect, and with the support of some Palestinian officials, the Oslo Agreement imposed a carbon copy of Israeli water management institutions onto the Palestinians (World Bank, 2009). Few Palestinians even knew about this component of the Agreement, and they continued to abide by the existing grassroots institutions, which, as shown by evidence in the area (Trottier 1999) and elsewhere (Mabry, 1996; Buckles, 1999), are generally perceived as both efficient and equitable.

Proposed Institutional Structure

The institutional structure proposed for joint Israeli-Palestinian management of shared water is shown in Figure 2. It divides power over water along several axes:

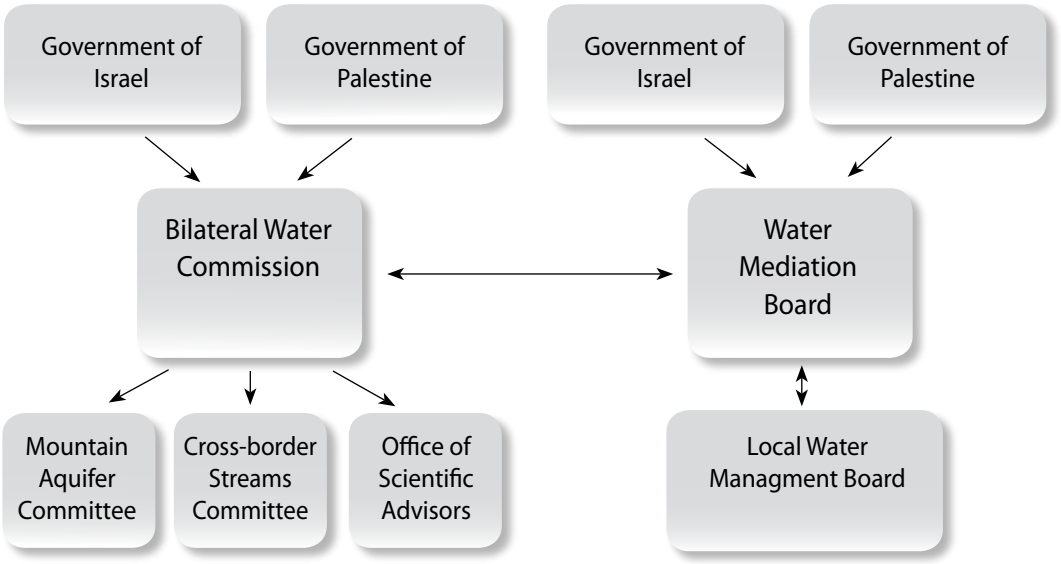


Figure 2

- between the Israeli and Palestinian governments
- among several joint Israeli-Palestinian institutions
- between scientific and political dimensions of management
- among institutions working over several scalar levels.

The structure allows for the general principles of shared water management, but goes beyond, or perhaps behind, them to emphasize equality in all rights and responsibilities related to management of shared water. Just as with the objective of equity, equality in rights and responsibilities does not mean that each party to the agreement will receive an equal volume of water. It does mean that each will have equal standing within each of the institutions for joint management of shared water bodies and equal opportunity to participate in decision-making processes.

The main management tools that in the hands of the institutions illustrated in Figure 2 are continuous monitoring and ongoing mediation. Far from being simply a modus operandi, the combination of monitoring and mediation is the basis on which decisions will be reached concerning withdrawals from each well, reservoir or spring. It has many implications, including the need for fair treatment of water users who find themselves requested to reduce their rates of extraction. For example, users of a well supplying household water might require immediate replacement with water from a different source. In contrast, users of a well supplying irrigation water might be asked to cut back at certain times of the year or to accept monetary compensation (along with technical advice) for shifting to rain-fed methods.

Continuous monitoring and mediation mechanisms will apply to all shared water, regardless of whether the system is private, communal, or public. However, mediation mechanisms will be more relevant to the existing Palestinian institutions than to Israeli ones because the latter are so centralized.

Bilateral Water Commission

The Bilateral Water Commission (BWC) will replace the existing Joint Water Committee, but will have responsibility for all shared water, not only Palestinian water (as is the case with the Joint Water Committee). It will report directly to the Israeli and Palestinian governments with a mandate that is critical, but limited. Most importantly, it will:

- Establish limits for withdrawals, standards for treatment and targets for releases of water from aquifers on the basis of the recommendations set by its advisory bodies (see below)
- Grant permits for new drilling projects on the basis of the recommendations set by the advisory bodies
- Develop extraction rates for contained aquifers, which are inherently non-renewable resources, so that their use is balanced over time against the ability of those using the water to develop alternative sources or to reduce demands for water.

The BWC can reject recommendations it receives from any of its subsidiary bodies, but it cannot issue an alternative decision on its own. Rather, should it reject a recommendation, it must explain its reasons for rejection and wait for new recommendations. If, after two exchanges, the BWC finds it impossible to reach agreement, the matter will be referred to the Water Mediation Board (see below) which is parallel to the BWC in status and which has more tools to promote a compromise and, if necessary, enough power to impose a resolution.

We suggest that the BWC be comprised of seven members, three selected by the governments of each Party, plus one member elected by the other six from any state other than the two parties. Decisions of the BWC would be made by majority rule provided that at least two members from the three selected by each Party must be in favour of any decision. This voting rule ensures that three members from one party and the non-regional member cannot form a "majority" to impose a resolution on the other party, but allows for resolution even when substantial disagreement remains.

A similarly structured sub-commission was proposed for the Mountain Aquifer because it is critically important to drinking water supply yet is probably the most vulnerable of the region's water resources. For brevity, the Mountain Aquifer Commission will not be discussed here, but a proposed model can be found in reports by Feitelson and Haddad (1998; 2000).

Water Mediation Board

The Water Mediation Board (WMB) will receive the complaints of any community or institution that argues that it is being negatively affected by either a planned water project, or an ongoing practice within another community or institution - including cases when these practices, such as urban planning, are not directly linked with water management. It will also receive complaints related to inequitable distribution of water or to inadequate water quality. And it will mediate in cases of disagreement between the BWC and any of its subsidiary bodies.

For all of the foregoing situations, the main role of the WMB will be to listen to the arguments of the parties involved in the complaint or conflict, and then to attempt conciliation. In cases when either the conciliation process fails or the alleged impact cannot be proven or disproven by the evidence at hand, the WMB will be empowered to investigate independently. Open forums or public hearings may be held, and various dispute resolution options tried. Records shall be kept and published of all public hearings, and all recommendations to and from the Water Mediation Board shall be public. Ultimately, the WMB does have the power to impose a resolution, but that power will only be used as a last resort.

Office of Scientific Advisors

The Office of the Scientific Advisors will consist of two "Senior Science Advisors," one each seconded from appropriate agencies in their respective governments, plus supporting staff. Their office will have the responsibility for reporting to the BWC on relevant issues related to water quality and water quantity and of recommending appropriate abstraction licenses and drilling limitations to the BWC. In addition to the other roles, the two Senior Science Advisors will be expected to have access to and to provide the BWC with commentary on four broad sorts of information:

- Water quantity data (including mapping)
- water quality data
- ecological limits on water withdrawals and wastewater disposal
- adequacy of supply of water of appropriate quality.

The Office of Scientific Advisors is not expected to maintain an independent database but rather to ensure accessibility of the databases maintained by the two parties. In addition to its duty to propose and monitor flow patterns and quality standards necessary to maintain the ecological health of shared watersheds, the Office must also find ways to guarantee a minimum domestic allocation, corresponding to a "human right for water," to every household in a legal community.

Local Water Management Board

The Local Water Management Board will identify and register all bodies that manage water resources locally and redistribute the water, regardless of whether they follow private or communal property regimes. The criteria used for this identification will be the existence of "rules-in-use" locally--that is the rules according to which a resource is actually managed by a group in specific situations. Those rules often differ from formal rules. They can, for example, remain oral, yet be scrupulously obeyed within a community. In effect, the process of registering local water institutions is to give them standing in subsequent interaction with the bodies described just above. A further duty of the Local Water Management Board is to assist the Water Mediation Board to ensure that local groups or institutions managing water sources in question are fully consulted during any investigation under the auspices of the WMB.

Recognizing local property rights systems is tricky. In some instances, such a process has been criticized because it projected onto local systems legal categories that were alien

to them. For example, in a case where national water law was of neo-liberal inspiration, it projected private property categories on what were, in effect, communal property concepts. Moreover, local property rights systems keep evolving. This is an important aspect of their resilience in the face of climatic, seasonal and demographic variability. Recognizing such systems has often entailed their fossilization. (Boelens, 2009)

Our proposal incorporates the lessons drawn from such experience. It proposes to incorporate local property rights institutions as dynamic entities within a dynamic system. It does not strangle them into a "once and for all" format nor does it adopt artificially created categories produced by national water law to describe what are naturally developed categories.

From Concept to Practice

It is a big step to move beyond the abstract discourse of international water law to its practical application in specific regions and with viable institutions that can successfully mediate between competing demands over shared water resources. The FoEME Proposal, as outlined in this proposal, is intended to indicate how that step could be taken. It reflects both the needs of and the trends in the world of the 21st century.

Of course, there are criticisms that can be made of the FoEME Proposal. One criticism is that it is not fully formed. To this criticism, we can only plead "guilty." A great volume of work would be needed to convert the concepts and the institutions outlined above into real processes and real agencies, and this work all remains to be done. However, it will not be done until politicians are convinced that Israelis and Palestinians are in favour of this kind of proposal, and they believe that, over the long run, both peoples will be better governed with a flexible rather than a rigid approach to management of shared water resources.

Another criticism might claim that this Proposal is too optimistic. Is it not naïve to think that too much trust implied for two peoples with such different approaches to water management and after so many years of conflict. To this criticism, FoEME can plead "not guilty." Our conclusion is that the process of developing mutual respect and appreciation in water negotiations is already the norm. In his masterful review article entitled "Criteria for equitable allocations: The heart of international water conflict," Wolf (1999) reports that almost all the international negotiations over water allocations over the past century or more have proceeded on the basis of each side recognizing the "needs" of the other side(s), rather than on a priori principles or rights. In such negotiations, each side typically recognizes the constraints binding the other side, in terms of its irrigable land, population, or the requirements of a specific project. In quite a different context, Syme et al. (1999) found that decisions in Australia that required balancing the allocation of water to environmental and to human uses found that local judgments of "fairness" (along with local participation

in decision making*)* play a distinctly greater role than considerations of economic efficiency. And of course, in the Jordan Valley we have the history of the Picnic Table Summits that managed water in the Jordan Valley during the nearly 45 years when the Jordan River was the armistice line between Israel and Jordan, yet those two states were nominally at war.

In conclusion, we have to agree that the FoEME Proposal, as described above, is untried. But it is only untried as a whole. Almost every part of it can be found in water agreements that are in operation elsewhere in the world at the national, regional or international level. What remains is to consider in Chapter 6 how to move the Proposal from concept to practice, to suggest what steps should be taken to put the FoEME Proposal firmly on the political tables on both sides of the Green Line.

CHAPTER 5

MOVING FRESH WATER FROM LAST TO FIRST IN THE PEACE PROCESS

by Gidon Bromberg and Nader Al Khatib

Dennis Ross and David Makovski, in their updated foreword to *Myths, Illusions and Peace* (Penguin, 2010), speak of the need for the Obama Administration to focus first on borders and settlements and leave the other final status issues of refugees and Jerusalem to a later stage. The authors do not mention that there exists a fifth core issue, WATER, that is both intrinsically linked to territory and whose advance can help boost political confidence building between the parties.

For the past 15 years, since the start of the Oslo process, solving the water issue has been held hostage to the lack of progress on the other core issues of the peace process. This has taken place despite the evidence that all parties agree that water issues are very solvable and will result in the Palestinians receiving a larger share of shared Israeli / Palestinian waters.

FoEME believes that advancing territory and water together as a first priority not only makes ecological sense, it also makes political sense. Water and territory in the Jordan Valley area of the West Bank would be of particular interest. According to a World Bank report of2009 , over 110,000 jobs could be created in the Palestinian economy if more water could be provided to the Palestinian agricultural sector. Most of these jobs would be created in the Jordan Valley, where less than 7,000 Israeli settlers utilize 50% of the available land while over 60,000 Palestinians must get along with just 4% of the Valley's land. Israel currently extracts from this Palestinian area over 40 million cubic meters of water for the benefit of the settlements, at the expense of Palestinian water needs. Were this water provided to Palestinian farmers together with territory, it could help create the rural sector jobs to which the World Bank report refers.

Cooperation over the allocation and management of shared waters requires intensive efforts. From FoEME's 15 years of experience in cross-border water cooperation at both the national and grassroots level, we can confidently assert that the more frequent and intensive the cooperation, the greater the understanding created and the more likely it is to produce mutually agreeable results. The breadth and depth of joint management described

in the FoEME water accord proposal is based on this experience. There is an urgent need to replace the current framework of the Joint Water Committee (JWC). The JWC has failed both peoples, first, by not providing sufficient water to the Palestinians and second, by not preventing largely Palestinian pollution of shared waters reaching Israel. A water accord based on intensive cooperation that more fairly shares water between both peoples, and between people and nature, will produce benefits for both sides. Palestinian will get more water in their homes for basic domestic purposes and more water for agriculture will rapidly create more jobs. Israelis will see greater donor support for Palestinian investments in sewage treatment and the consequent rehabilitation of coastal streams that run through key population centers in Israel such as Tel-Aviv, Netanya and Haifa Bay. Even the Jordan River under this scenario might benefit from the return of some fresh water.

Advancing the issues of both territory and water together is mutually reinforcing. In our dry part of the world, territory without water has little value. Even without advances in negotiations over territory, FoEME's 10 years of on the ground experiences in the Good Water Neighbors project has highlighted that resolving the water issue now will help capture the hearts and minds of both peoples, as the gains here are so visual and concrete. Water issues need not and cannot wait. The FoEME proposal, though ambitious, is based on the life experiences and water reality that Israelis and Palestinians face every day.

This report presents another step in fostering public debate as to both the urgency of reaching a new water accord, and the nature of any new water accord. By publishing this report, holding conferences and giving presentations before decision makers, experts, the general public and third parties, FoEME seeks to advance the proposed water accord between Israelis and Palestinians, to the benefit of both parties.

CHAPTER 6

CONCLUSIONS

Wolf (1999) argues that, "The major barrier to water's role as an agent of peaceful relations is the lack of a widely accepted measure for equitably dividing shared resources" (1999, p. 10). We think this statement is too pessimistic. Wolf himself (citing Rothman, 1995) recognizes that, "negotiations ideally move along three stages: the adversarial stage, where each side defines its positions; the reflexive stage, where the needs of each side bringing them to their positions is addressed; and finally, to the integrative stage, where negotiators brainstorm together to address each side's underlying interests." We suggest that there is an intermediate stage between the adversarial and the reflexive. In this stage, which might be called the protective, the sides recognize the need for mutual protection, and they reach agreements on emergency measures, prior notification, and information sharing.

That sort of protective response seems to be exactly what Nader Khatib, Palestinian Director of Friends of the Earth Middle East, demands in his response to the World Bank's Assessment of Restrictions on Palestinian Water Sector Development (2009):

> *It is time to replace the failed mechanism of the Joint Water Committee, established under Oslo, with an institution where Palestinians and Israelis are true partners in both water supply and management responsibilities.*

And that is exactly what FoEME intends to accomplish with this proposal. The institutional structure described above is designed to accommodate the very different ways in which water is managed by the Israeli and Palestinian polities while, at the same time, treating them on an equal basis.

Our Proposal breaks with the double delegation model that has been so common until now. With such a model, citizens delegate decision-making to elected representatives. When dealing with scientific issues, these elected representatives then delegate decision-making to scientific experts (Callon, 2003). In contrast, we envisage a management structure for sharing water that both allows for a wider arena where non-state actors can interact, and also permits the system to react to changes in the natural regime as well as in economic and social development.

Scientists have a critical role to play in identifying alternative options for water management, but their role as scientists stops short of determining what is best in water management. Political, social, economic and environmental values differ between and within societies, and those differences lead to different preferences for water management. We do not mean that one type of institution is better than the other; each has advantages and disadvantages. We do mean that the social capital produced by each society in dealing with water management must be reflected in and built upon within one agreement.

Unfortunately for the FoEME proposal, the water establishments on both sides of the Green Line that, for now, separates Israel from the West Bank, are dominated by hydrologists, hydraulic engineers and other physical scientists, leavened by a few economists. In contrast to other social scientists and conflict resolution specialists, most of whom react favourably to our proposal, physical scientists, engineers and quantitative economists prefer something closer to the model of water as a pie that can be cut into pieces. To compound the problem, Israeli negotiators tend to invoke the now widely abandoned doctrine of First-in-Time / First-in-Right, which is now widely abandoned (Bourne, cited in Salman, 2010). Even if that doctrine is still in force in some states in western US and in the Canadian province of Alberta, it surely has no role to play in this region after nearly 45 years of military occupation. Somewhat similarly, some Palestinian negotiators argue that all of the water in the Mountain Aquifer is Palestinian because most of that water originates in rain over the West Bank. However, this claim is totally inconsistent with the entire body of modern international law on shared water resources.

In 1959 when its Basic Law on water was passed, Israel maintained that it had created the world's first modern water law. If Israeli and Palestinian negotiators can come to adopt the FoEME proposal for joint management of shared water, we believe they will have created the world's first modern water treaty.

REFERENCES CITED

Alatout, S. (2008). States of Scarcity: Water, Space and Identity Politics in Israel, 1948-59. *Environment and Planning D-Society & Space*, 26(8), 959-982.

Alkhaddar, R. M., Sheehy, W. J. S., Al-Ansari, N., 2005. Jordan's Water Resources: Supply and Future Demand, Water International 30(2), 294-303.

Arlosoroff, S., 2007. Wastewater Management, Treatment and Reuse in Israel. Zaidi, Mohammed K. (Ed.). Wastewater Reuse - Risk Assessment, Decision-Making and Environmental Security. Boston: Springer, 55-64.

Assaf, Karen, Nader al Khatib, Elisha Kally and Hillel Shuval (1993). *A Proposal for the Development of a Regional Water Master Plan - Prepared by a Joint Israeli-Palestinian Team.* Jerusalem: Israel/Palestine Center for Research and Information.

Blomquist, W., Ingram, H. M., 2003. Boundaries Seen and Unseen: Resolving Trans-boundary Groundwater Problems. Water International 28(2), 162-169.

Boelens, Rutgerd (2009). The Politics of Disciplining Water Rights. *Development and Change*, 40(2), 307-331.

Brooks, D. B., Thompson, L., El Fattal, L., 2007. Water Demand Management in the Middle East and North Africa: Observations from the IDRC

Forums and Lessons for the Future. Water International 32 (2),193-204.

Brooks, David B., and Julie Trottier (2010). Confronting Water in an Israeli-Palestinian Peace Agreement. *Journal of Hydrology,* 382, 103-114

Buckles, D. (Ed.), 1999. Cultivating Peace: Conflict and Collaboration in Natural Resource Management. Ottawa, Canada: International Development Research Centre.

Callon, M., 2003. The increasing involvement of concerned groups in R&D policies: what lessons for public powers? Rethinking the Rationales for Funding and Governance. Geuna, Aldo, Salter, Ammon J., Steinmueller, W. Edward (Eds.) Chelthenham: Edward Elgar. 30-68.

Camponara, D. (1985). Patterns of Cooperation in International Water Law: Principles and Institutions. *Natural Resources Journal*, 25, 563-587.

Cooley, J. K. (1984). The War over Water. Foreign Policy, 54 (Spring), 3-26.

Diabes-Murad, Fadia (2005) A New Legal Framework for Managing the World's Shared Groundwaters: *A Case Study from the Middle East* (London, IWA).

Eckstein, Gabriel E. (2004) Protecting a Hidden Treasure: The U.N. International Law Commission and the International Law of Transboundary Ground Water Resources, *Sustainable Development Law & Policy*, 5, pp. 5-12.

Eckstein, Gabriel E., and Yoram Eckstein (2003) A Hydrogeological Approach to Transboundary Ground Water Resources and International Law, *American University International Law Review*, 19, pp. 201-258.

Feitelson, E., 2002. Implications of the Shifts in the Israeli Water Discourse for Israeli-Palestinian Water Negotiations. Political Geography 21(3) 293-318.

Feitelson, E., Haddad, M.,1998. Identification of Joint Management Structures for Shared Aquifers: A Cooperative Palestinian-Israeli Effort. World Bank Technical Paper No. 415. Washington, DC: The World Bank.

Feitelson, E., Haddad, M. (Eds.), 2000. Management of Shared Groundwater Resources: The Israeli-Palestinian Case with an International Perspective. Ottawa: International Development Research Centre; and Boston, Massachusetts, USA: Kluwer Academic Publishers.

Fishelson, Gideon (1989). *The Middle East Conflict Viewed through Water: a Historical View*. The Armand Hammer Fund for Economic Cooperation in the Middle East, Tel Aviv University, Tel Aviv.

FAO (2008). Climate Change: Implications for Agriculture in the Near East. Rome: Food and Agriculture Organization of the Middle East, Report for 29th FAO Regional Conference for the Near East; NERC/08/INF/5.

Freimuth, L., G. Bromberg, M. Meyher and N. Al-Khatib (2007). Climate Change: *A New Threat to Middle East Security*. Amman, Bethlehem and Tel Aviv: Friends of the Earth Middle East.

Friends of the Earth Middle East (FoEME) (2010) TBC

Garbell, M.A. 1965. The Jordan Valley Plan. *Scientific American*, 212(3), 23-31.

Gleick, P. H., 2000. How Much Water Is There and Whose Is It? The World's Stocks and Flows of Water and International River Basins. The World's Water: 2000-2001. Washington, DC: Island Press.

Hayton, R. D., and A. E. Utton (1989). Transboundary Groundwaters: The Bellagio Draft Treaty. *Natural Resources Forum*, 29(3), 664-722.

Hillel, D. J., 1994. Rivers of Eden: The Struggle for Water and the Quest for Peace in the Middle East. Oxford, UK: Oxford University Press.

Hosh, L., and Jad Isaac (1992). Roots of the Water Conflict in the Middle East. Paper presented at the Conference on the Middle East Water Crisis: Creative Perspectives and Solutions, 8-9 May 1992. University of Waterloo, Waterloo, ON, Canada.

Kally, E., with Gideon Fishelson (1993). Water and Peace: Water Resources and the Arab-Israeli Peace Process. Westport, CT, USA: Praeger.

Kemper, Karin E., Eduardo Mestre, and Luiz Amore (2003) Management of the Guarani Aquifer System: *Moving Towards the Future* (Italics in original), *Water International*, 28, pp. 185-200.

Khateeb, N., 2009. Water Being Held Hostage to the Conflict, Press Release dated 20 April 2009. Bethlehem and Tel Aviv: Friends of the Earth Middle East.

Lautze, Jonathan, Meredith Reeves, Rosaura Vega and Paul Kirshen, 2005. Water Allocation, Climate Change, and Sustainable Peace: The Israeli Proposal. *Water International*, 30 (2) 197-209.

Lautze, J. and Giordano, Mark (2006). Equity in Transboundary Water Law: Valuable Paradigm or Merely Semantics? *Colorado Journal of International Environmental Law and Policy*, 17(1) 89-122.

Lautze, Jonathan, and Paul Kirshen, 2009. Water Allocation, Climate Change, and Sustainable Water Use: The Palestinian Position. *Water International*, 34 (2) 189-203.

Lonergan, S. C., Brooks, D. B., 1994. Watershed: The Role of Fresh Water in the Israeli-Palestinian Conflict. Ottawa: IDRC Books.

Mabry, J. B. (Ed.), 1996. Canals and Communities Small-Scale Irrigation Systems. Arizona Studies in Human Ecology. Tucson: University of Arizona Press.

Molle, F., 2009. Water, Politics and River Basin Governance: Repoliticizing Approaches to River Basin Management. Water International 34(1)62-70.

Rahaman, M. M., 2009. Shared Water- Shared Opportunities: Associated Management Principles, *International Water Resources Update*, 22, 15-19.

Ross D. and Makovski D., 2010. Myths, Illusions and Peace: Finding a New Direction for America in the Middle East, *Penguin Books*

Salman, Salman, M. A. (2007) The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: Perspectives on International Water Law, *International Journal of Water Resources Development*, 23, pp. 25-640.

Salman, Salman A. (2010). Downstream Riparians Can Also Harm Upstream Riparians: The Concept of Foreclosure of Future Uses. *Water International*, 35(4), 350-364.

Scott, C. A., El-Naser, H., Hagan, R. E., Hijazi, A., 2003. Facing Water Security in Jordan: Reuse, Demand Reduction, Energy, and Trans-boundary Approaches to Assure Future Water Supplies. Water International 28(2) 209-216.

Shuval, Hillel (2007). Meeting Vital Human Needs: Equitable Resolution of

Conflicts over Shared Water Resources of Israelis and Palestinians. In Hillel Shuval and Hassan Dweik (eds.), *Water Resources in the Middle East: Israeli-Palestinian Water Issues - From Conflict to Cooperation.* Berlin: Springer, 1-16.

Shuval,H. (2010). Comments on "Confronting water in the Israel-Palestinian peace agreement" by David Brooks and Julie Trottier, *Journal of Hydrology* (382/1-4,pp103-144)

Stephan, Raya Marina (Ed.) (2009) *Transboundary Aquifers: Managing a Vital Resource / The UNILC Draft Articles on the Law of Transboundary Aquifers* (Paris: UNESCO-International Hydrological Programme). Available at:

http://unesdoc.unesco.org/images/0018/001824/182431E.pdf

Trottier, J., 1999. Hydropolitics in the West Bank and Gaza Strip. Jerusalem: Palestinian Academic Society for the Study of International Affairs.

Trottier, J., 2007. A Wall, Water and Power: the Israeli Separation Fence. Review of International Studies 33, 105-127.

Varis, O., Biswas, A.K., Tortajada, C., 2008. Management of Transboundary Rivers and Lakes. Berlin: Springer-Verlag.

Vengosh, A., Wolfram, K., Marei, A., Livshitz, Y., Guttierez, A., Banna, M., Guerrot, C.,

Pankratov, I., Ranaan, H., 2005. Sources of salinity and boron in the Gaza strip: natural contaminant flow in the southern Mediterranean coastal aquifer. *Water Resources Research*, 41(1).

Wishart, D. (1989). An Economic Approach to Understanding Jordan Valley Water Disputes. *Middle East Review*, 21(4), 45-53.

——1990. The Breakdown of the Johnston Negotiations over the Jordan Waters. *Middle Eastern Studies*, 26(4), 536-546.

Wolf, Aaron T. (1995). *Hydropolitics Along the Jordan River: Scarce Water and Its Impact on the Arab-Israeli Conflict*. Tokyo: United Nation University Press.

Wolf, Aaron T., 1998. Conflict and Cooperation along International Waterways. Water Policy 2 (2), pp. 251-265; see also Trans-boundary Freshwater Dispute Database (Oregon State University, Department of Geosciences): http://terra.geo.orst.edu/users/tfdd/

Wolf, Aaron T. (1999) Criteria for Equitable Allocations: The Heart of International Water Conflict, *Natural Resources Forum*, 23, pp. 3-30.

Wolf, Aaron T. (2000) From Rights to Needs: Water Allocations in International Treaties, in Feitelson and Haddad (Eds.) *Management of Shared Groundwater Resources: The Israeli-Palestinian Case with an International Perspective* (Ottawa, IDRC Books; and Amsterdam, Kluwer Academic), pp. 27-59.

World Bank (2009). Assessment of Restrictions on Palestinian Water Sector Development, Sector Note for West Bank and Gaza. Washington, DC: International Bank for Reconstruction and Development.

ANNEX A

CONTRIBUTING AUTHORS

Principal Authors

Dr. David B. Brooks is a natural resource economist, recently retired from Canada's International Development Research Centre. He was the founding director of the Canadian Office of Energy Conservation and is now Senior Advisor on Fresh Water for Friends of the Earth Canada. He published several books including *The Role of Fresh Water in the Israeli-Palestinian Conflict* (IDRC Books 1994) and edited several books on water demand management including *Water Balances in the Eastern Mediterranean* (IDRC Books 2000). He can be reached at david.b.brooks34@gmail.com.

Dr. Julie Trottier is research professor at France's National Center for Scientific Research (CNRS). With formal studies in chemistry, politics and Islamic studies, she has focused her research for the last fifteen years on the politics of water in Israel/Palestine. She published *Water Politics in the West Bank and Gaza Strip* (PASSIA) and *Water Management, Past and Future* (Oxford University Press).

Other Authors

Gidon Bromberg is Israeli Co-Director of Friends of the Earth - Middle East. He is an attorney by training and can be reached at Gidon@foeme.org

Nader Al Khateeb is Palestinian Co-Director of Friends of the Earth - Middle East. He is a water engineer by training and can be reached at Nader@foeme.org

Comments

Nadav G. Shelef is an Assistant Professor in the Department of Political Science and the Harvey M. Meyerhoff Assistant Professor of Modern Israel Studies at the University of Wisconsin, Madison, Wisconsin, USA. He can be reached at shelef@wisc.edu

Hillel Shuval is Director of the Department of Environmental Sciences, Hadassah Academic College, and Lunenfeld-Kunen Emeritus Professor at Hebrew University Jerusalem, Israel. He can be reached at hshuval@vms.huji.ac.il

ANNEX B

RESPONSES TO THE FoEME PROPOSAL

This Annex presents two academic reviews of the FoEME Proposal for joint management of water shared by Israelis and Palestinians, along with our comments on those reviews.

Comments by Professor Nadav Shelef

These remarks were originally delivered orally as a review of the presentation by Brooks and Trottier at the Annual Meeting of the Association for Israel Studies in Toronto, Canada (May 2010). Professor Nadav has kindly prepared this written version of his comments.

A successful resolution of water disputes in the conflict between Israelis and Palestinians is required not just to promote a peaceful end to the conflict but also to enable sustainable development in the region. The FoEME Proposal as prepared by David Brooks and Julie Trottier makes an important contribution to this subject. The authors convincingly argue that the current quantitative approach of allocating water rights is problematic. Instead, they advocate for a more flexible approach that prioritizes shared management of water resources and mediation of disputes. Among the signal contributions of the proposal is its attention to incorporating a wider range of stakeholders in the water policy formation process. In doing so, the proposal seeks to de-nationalize and de-securitize water in the hope that doing so will make conflict over this vital resource more amenable to resolution. The proposal by Brooks and Trottier should be applauded for providing a framework that accounts for the politics of water. The inclusion of the politics of water makes this approach relatively more likely to succeed in managing disputes over water than those that only pay attention to the technical aspects of the question.

At the same time, the proposal as currently formulated makes a questionable assumption about the character of the relationship between Israel and the future Palestinian state and, by implication, about the politics of water in a post-agreement context. Assuming that violence is substantially reduced, the relationship between Israel and a future Palestinian state is likely to be better than that which currently exists. However, given the history of the conflict, and the economic and military imbalances that will continue to characterize the region, this relationship is unlikely to be conflict free or to be characterized by a surfeit of mutual trust. Indeed, if the past is any guide, we can count on veto players on all sides to do everything in their power to undermine any nascent trust that might emerge.

There is little reason to assume that water issues will escape the impact of this continuing atmosphere of distrust. This has a number of related implications for the evaluation and development of a shared management approach to water issues. First, water is likely to remain securitized. Brooks and Trottier rightly note that the quantitative approach to sharing water has contributed to the securitization of this resource. There is also little doubt that the categorization of water as a national security issue has made compromise and cooperation more difficult. However, it is not necessarily the case that replacing the quantitative approach with an emphasis on shared management would lead to water's de-securitization. The perception of water resources through a security lens, like the securitization of trade, housing, and the movement of labor, is a more fundamental product of the conflict between Israelis and Palestinians for self-determination and a secure national existence. As long as the sides perceive these ultimate goals to be threatened, water is likely to remain understood as a national security issue by both sides.

Second, and partly in consequence, we might also expect each side to continue to advance claims and arguments that maximize the benefits that accrue to it rather than those claims that are more widely beneficial. For example, Brooks and Trottier advance four objectives as the initial basis for the shared management approach: economic efficiency, social and political equity, ecological sustainability, and practicality. These principles are unobjectionable. They are not, however, politically neutral. As a result, each side has an incentive to appoint representatives to the proposed Bilateral Water Commission (BWC) that prioritize those objectives from which it benefits disproportionately.[1] The likely appointment of those with maximalist demands and conflicting priorities to the BWC means that a consensus that requires two of the three representatives of each side to support a decision that disproportionately benefits the other side is unlikely to emerge.

The resulting deadlock effectively pushes the decision-making authority into the hands of the proposed Water Mediation Board (WMB) despite its conceptualization as an option of last resort. Further development is needed to elaborate how this group would work and how it would be constituted. Here, importantly, the greatest advantage of the shared management approach over the quantitative one, its flexibility, also becomes a significant weakness. Without additional information, what might be lauded as flexibility from one perspective may be interpreted as uncertainty by the states involved. To the extent that the participating parties are unlikely to want to assume the additional risk (for example,

1. For preliminary support of such frame shopping in an ecological context, see Itay Greenspan and Stuart Schoenfeld. 2010. "Cooperation, Confrontation and Disregard: Building Environmental Relationships between Israel and Palestine?" Paper presented at the Association for Israel Studies Conference, May 10-12, 2010, Toronto.

that the WMB would consistently rule against it), they may be reluctant to enter into the agreement in the first place or, if an agreement is reached, to abide by it. The problems with the added uncertainty are compounded by the wide scope of influence currently envisioned for the WMB. As currently framed, its decisions are binding and its influence extends beyond narrow water issues to include broader urban planning processes. While the European Union presents at least one example of states ceding sovereignty over these kinds of issues, even in that peaceful and relatively trustful context rule enforcement is still very difficult.

The current proposal suggests that the WMB would be composed of two Israelis and two Palestinians nominated by their respective justice ministries, and one member elected by the members of the "Local Water Management Board." Given the atmosphere of distrust and likely disagreement, this last member of the WMB is likely to emerge as the pivotal voice on arbitration. (We might consider the role of Justice Anthony Kennedy in the current United States Supreme Court as a useful analogy.) Yet, despite the importance of the Local Water Management Board, its membership and decision-making rules remain too vague. For example, it is unclear who (or what) counts as water management body that is a member of the Local Water Management Board? Consider the possibility that, by virtue of its centralization, Israel's "rules-in-use" mean that it has a single water management body, while the decentralized, locally based "rules-in-use" of the future Palestinian state means that it has many more (perhaps as many as one in each village with a well). In this scenario, the Palestinians would have many more members in the Local Water Management Board and the member this body elects to the WMB is likely to reflect their interests. Alternatively, we can imagine a scenario in which the relative input of each local water management body is weighted by the size of the population it serves. In this case, Israel's centralized "rules-in-use" would give it an advantage in determining the critical fifth member of the WMB. It is difficult to envision either state agreeing to a mediation process that might be systematically biased against it. This does not mean that arbitration and mediation are not more constructive than the prevalent static quantitative approaches to the allocation of water rights. It does mean, however, that considerably more attention needs to be devoted to detailing mechanisms that are likely to convince both parties that their interests would be accommodated. Such assurances, however, would also constrain the flexibility at the heart of the proposal.

There is at least one other sense in which the greater flexibility of the shared management approach is both a strength and a weakness. It contributes to reaching an accommodation by pushing most of the actual decisions about water allocation into the future. This is useful because it allows for agreement in principle while leaving the thorny issues about allocation to a post-political agreement context. In simple terms, all of the advantages of the agreement are reaped by the parties in the short term, while its costs (payable say, in reduced water allocations) are delayed. However, the conflict resolution tactic of pushing

difficult decisions into the future also provides more space (and time) for veto-players who want to derail an agreement to operate.

Finally, the attention paid by the "shared management" approach to the practicality of its recommendations and its commitment to including a wider range of stake holders than is conventionally done point to at least one potential way of overcoming the obstacles noted above. We might think, for example, of structuring the WMB in such a way as to create cross-cutting political cleavages around water issues. For example, it might be possible to create alliances of Israeli and Palestinian farmers on some issues, say allocation, while Israeli and Palestinian environmental groups would agree on raising water prices. Such cross-cutting political alliances would both help the implementation of any decision and, because they would contribute to the de-nationalization of the water issue, promote an atmosphere conducive to the shared management paradigm.

Response to Shelef by Trottier

Professor's Shelef's review of the proposal reflects a careful reading and an engagement with the proposal itself which allows us to pursue its improvement. However, we do have a few reactions to it.

First of all, Professor Shelef writes that the proposal as currently formulated makes a questionable assumption about the trust that could emerge between Israel and the Future State of Palestine. We concur with him in recognizing the deep wounds both sides have been suffering within this conflict. This certainly is not conducive to a great degree of trust between them, and is precisely one of the reasons we are proposing this institutional set up. The veto players, who Professor Shalaf rightly fears will try to do everything in their power to undermine any trust that might emerge, would never have extensive powers within the proposed institutional set up. The principle of subsidiarity that guides the proposal means that decisions will systematically be made at the lowest scalar level, not at the international level. These decisions would be made on the basis of established priorities (such as priority to domestic water) that are not polemical either among Palestinians or Israelis.

Professor Shalaf rightly expects claims and arguments to be advanced that maximize the benefits that accrue those who make them. The institutional set up that is proposed here ensures that the full range of actors involved in water management would issue these claims and arguments. Among them, only a minority actually considers the national water allocation as their direct benefit. Most actors are concerned about water quantity or quality for their municipality, their agricultural exploitation or their business plans. And once such considerations are integrated, it becomes much more difficult to perceive water in nationalist terms. For example, a factory in the West Bank that engages in a subcontracting

arrangement for an Israeli company may be using water that a die-hard nationalist might consider better used by Israelis directly. But this water contributes to a production process that generates Israeli profits via the subcontracting agreements. Most importantly for our proposal is that this factory would not have to justify its use of water to the eventual Israeli nationalist who would claim that water for his side. However, this factory would have to respect quality standards for the water it would release in the environment. And this is crucial for Israel from a national perspective.

Professor Shalaf is quite realistic when he expects appointees to the Bilateral Water Commission to prioritise objectives from which their state would benefit disproportionately. This is why our proposal grants the Bilateral Water Commission powers that are far less sweeping than those of the present Joint Water Committee. Professor Shalaf fears that the Water Management Board would therefore play a systematic role in decision making. We expect indeed that in the short term, a flurry of issues would be brought to the Water Management Board. Most of these, however, would not involved conflict between Israel and Palestine. They will involve a great number of actors deploying their strategies over much smaller territories than the national territories. This is exactly what will progressively give increasing credence to the work of the Water Management Board. It will be able to call upon scientific expertise to instruct claims concerning harm done to resources (in terms of quality and quantity) which will dispel the prevalent ideas according to which the water problems are systematically caused by "the other side".

Professor Shalaf expects that perhaps as many as one water management body will emerge for each Palestinian village with a well. We actually expect many more than this. So, yes, the Local Water Management Board will undoubtedly reflect Palestinian interests far more than Israeli interests. This is fully intended in this proposal. As Professor Shalaf himself states in his comments, the military and economic imbalance between Israel and the Future State of Palestine is quite great. The Local Water Management Board serves to equilibrate the overall institutional set up that is proposed here.

One comment made by Professor Shalaf, however, is erroneous. This proposal does not in any way push most of the actual decisions about water allocation into the future. This proposal actually precludes any water allocation whatsoever in any future no matter how near of far. This proposal therefore is not a delaying tactic to settle urgent water issues while hoping trust can be built and a more peaceful situation could lead to a fairer allocation of water. It does the opposite. It precludes any consideration of allocating water on a national basis. This proposal actually builds and formalises many processes that are already occurring in the field, even though they contradict nationalist discourses. The fact is that decisions concerning water are made by a multitude of actors who have in mind their crops, their drinking water networks, their business activities, the public health of their community, etc.

Very few of these actors make decisions concerning water on the basis of overall national endowment of water. The proposed institutional set up is thus realistic instead of idealistic.

Critique by Professor Hillel Shuval

Professor Hillel Shuval prepared this critique for the Journal of Hydrology (Shuval, 2010) in response to the article published by Brooks and Trottier (2010). Page numbers refer to that publication.

First, I would like to express my appreciation for the tremendous and thoughtful efforts by David Brooks and Julie Trottier (B/T) in preparing this interesting paper. It provides extensive and valuable background information on the Palestinian-Israeli shared water resources and the history of the water issues and conflict between the two nations. It also contains many original and unconventional proposals on possible ways of reaching a final accommodation between Israel and Palestine on the vital but complex issue of managing their shared water resources. In these comments I shall only relate to a few of these proposals.

I agree with the authors that the basic point of departure of the final status water agreement must be based on the concept of two sovereign states, living side by side, with recognized and secure borders. It is assumed that the Palestinian State will be in contiguous areas of the West Bank and Gaza, the final borders of which and the fate of the Israeli settlements in those areas, will be determined by political negotiations in the final status agreement (FSA).

A Just and Rightful Reallocation of the Israeli-Palestinian Shared Water Resources

In the framework of that political agreement there must be a key article or section dealing with water: the management and sharing of the water resources between the two states to assure equitable and just use of these shared resources to meet vital human needs and sustainable development. In light of the reality that the Palestinians suffer from severe water shortages, it is understood that there will have to be a just and rightful reallocation of the Israeli and Palestinian shared water resources which will result in a reasonable and acceptable increase in the Palestinian share and an agreed upon reduction in the Israeli share. In order to fully understand the B/T proposal for allocation and reallocation of the shared water resources I have chosen the following concise description of their concept for that reallocation process that was presented in one of their earlier drafts. I have chosen this short unambiguous paragraph since it may be difficult for the reader of the article to extract the full meaning of the B/T proposal from the very long and at times complex explanations in

the text of the article. Basically their proposal for water management and reallocations are contained primarily in the paragraph on the Bilateral Water Commission (BWC) on page 24.

> *We have chosen to break with recent approaches in the allocation of water in the region. Instead of specific volumes of water going to Party A and to Party B, or specific percentages going to Party A and to Party B, we have chosen to develop an ongoing management process that will better reflect varying development patterns, ecological conditions, and even human values. This approach will, we admit from the start, be more difficult to implement, but at the same time, it will, we insist, resolve more problems. The institutional structure that we recommend is built, in significant part, around the need to manage the ongoing negotiation process for water withdrawals and releases."*

Basically what B/T are proposing is to take the process of reallocation of the shared resources out of the hands of the two national entities signing the peace agreement and to initiate an open ended process of allocation and reallocation of the shared resources which will be given over to a Bilateral Water Commission not directly or fully controlled by the partners to the peace agreement. I am convinced that neither Israel or the Palestinians can accept such a procedure which basically deprives them of their sovereignty over what they feel is their share of the water resources. When signing a final status peace agreement each side will insist on knowing the details. The Palestinians must know to what extent their share has been increased and to what extent that increase will assure meeting their vital human needs. Their leaders must be able to report to their people the improvement in their situation and their quality of life as a result of the peace treaty. Likewise, the Israelis must know to what extent their share of the water resources has been reduced, from which areas, and how they must reorganize their water distribution and management systems to meet the agreed upon shortfall. They cannot be left in the dark about such vital issues or agree to a peace treaty which ties them to new procedures which, over the years, will allocate and reallocate their water resources.

While it is true, as the authors point out, that water is not as fixed as land, the shared Israeli-Palestinian aquifers are among the most fully studied and understood of any almost any in the world. There is no chance that a peace treaty between the sides can leave the final issue of the borders to be determined and changed from time to time to:

> *… an ongoing management process that will better reflect varying development patterns, ecological conditions, and even human values.*

No two nations could ever be expected to agree to such an open ended provision concerning their borders in their final status peace treaty.

In my view neither nation should be prepared to hand over the critical issue of water allocations or reallocations to the as-yet unknown, anonymous and untested Bilateral Water Commission as proposed by B/T. Their proposal opens a Pandora's box of intolerable, intractable, unending conflicts, disputes and appeals of conflicting views on water allocations and reallocations between the two partners to the agreement that will tragically deadlock the process from the very start.

In my view the FSA concerning water must make clear statements about recognizing and respecting the water rights and human needs of each of the partners and make clear and unambiguous agreed-upon and *final* rightful water reallocations to the Palestinians to meet their immediate urgent vital human needs.

It is realized that there is great variability of water resources in the area, from year to year and possibly as a result of climate change. It should be part of the agreement that the quantity of reallocated water stated in the agreement and as agreed upon and approved at the political level in the FSA**,** will be based on the average safe yield of a specified base year and the rainfall and recharge rates of that year. In case of reduced or increased rainfall and reduced or increased safe water yields, the reallocation of water should be adjusted accordingly.

Joint Management

I fully recognize the complex interactions and interdependence of the ground and surface water resources of the area and that these shared water resources require a high degree of cooperation and bi-national management to assure their sustainability from a quantity, quality and environmental point of view and to assure efficient and equitable management.

Joint management is indeed a worthy goal, but it must be recognized that comprehensive joint management between the two nations cannot come into effect all at once. It must evolve in stages. The limited joint management between Canada and the USA on the Great Lakes took many years to evolve and does not essentially encroach on the sovereignty of either country. Full joint management as a first stage, as proposed in the B/T article, is totally unrealistic and unworkable. The FSA peace agreement should enable the development of joint management in stages, starting with a reasonable minimum degree of bi-national cooperation. The B/T article proposes a form of total, all-powerful, comprehensive joint management, which in effect has a super-governmental status with authority superior to the parliamentary authorities in Israel and Palestine. The joint management proposed essentially deprives these countries of their sovereignty over all matters of water resources management. It cannot be anticipated that Israel will be able to accept and sign a peace agreement containing a water article in which it basically totally gives up its sovereignty

over water resources which will require the approval of the Knesset to change existing laws on many detailed, important, powers presently granted to the Israel Water Authority and to the Ministries of Finance, Health, Environmental Protection, Interior, Agriculture as well as the local authorities.

The joint management must be adapted to the political-legal reality while never-the-less assuring a high level of cooperation between Israel and Palestine, particularly on matters dealing with the efficient and equitable management of the shared water resources to prevent over utilization and strict conformity to the agreed upon water reallocations, control pollution and to assure environmental sustainability. It should not have the authority to deal with reallocation of water resources which are important and sensitive political and legal issues which must be first be decided upon at the political level in the FSA. It should not have the authority to set internal water prices for the partners to the agreement which are highly sensitive social and economic issues which no country will forgo. It should not have the authority to issue licenses for the drilling of wells or the authority to determine how much water should be pumped from specific wells within the sovereign areas of each of the two states--matters which have to be agreed upon previously at the political level. It should be so drafted as to avoid attempts to give the joint management any authority that conflicts with the existing laws of either country or existing peace agreements.

The authors surprisingly neglect to mention in their acknowledgements that under their contract to prepare their study with the Friends of the Earth of the Middle East and the Geneva Initiative, two Israeli and two Palestinian advisors were appointed to work along with them. Eng. Saul Arlosoroff and I were the Israeli advisors and Dr. Keren Assaf and Professor Alfred Abu Rabu were the Palestinian advisors. We worked closely with the authors for more than a year during 2007 and 2008 and invested hundreds of hours of work in reviewing and providing detailed comments and suggestions on their several drafts. We thus gained insight into the unique and unconventional approach developed by the authors and made many proposals for modifications and changes. Since we found that we disagreed with their approach on so many points I drafted a full alternative water agreement which I submitted for their consideration. Few of our proposals were accepted by the authors, which was their prerogative since we were only advisors. In the end however, the two Israeli advisors informed the sponsors that many of the B/T key proposals such as the examples pointed out above, were in our opinion problematical, unworkable and unacceptable to us. The two Palestinian advisors did not approve the B/T proposals either. B/T submitted their draft water agreement as summarized in their article to the Geneva Initiative management for consideration at a special meeting of an Israeli- Palestinian negotiating team and a group of international experts and advisors in Annapolis sponsored by the Annapolis Peace and Justice Center held in August 2008. The joint Palestinian-Israeli Geneva Initiative management and the group of advisors did not find that the B/T draft was suitable and it was not considered.

A final Geneva Initiative Water Annex, based initially on my proposed draft and modified and improved by the Israeli-Palestinian negotiation team, of which I was a member, has meanwhile been drafted, approved and published and is available on the Geneva Initiative Website - (www.heskem.org.il).

Response to Shuval by Brooks

Dr. Hillel Shuval has written a well-worded response to our article proposing what we believe is a modern version of a water treaty, with application to water that is likely to be shared by Israel and a future State of Palestine. We gratefully acknowledge the time and the ideas that our four advisors, of whom Dr. Shuval was one, offered us - even though, in the end, we did not accept all of them. On many points we are in full agreement, including the need for a reallocation of existing water use so that more water flows to Palestinians, and for greater attention on both sides of the border to preserving water quality as well as conserving water quantity.

The main difference between our view and that of Dr. Shuval is over what will be acceptable to the negotiating teams when they finally decide that they have to make peace. He believes that they will want a narrow and fixed definition of rights to shared water; we believe that they will come to accept a broader and more flexible definition - not at first, perhaps, but as they consider the difficult situation they face in terms of both longer term socio-economic development and more immediately restoring water use to levels that are sustainable. What the future will bring is not really debatable.

We do want to respond more specifically to a few points in Dr. Shuval's critique. At no point do we suggest that the borders between Israel and the future State of Palestine can be at issue in discussions about water. To the contrary, we insist that the Final Status Agreement must define what water is shared, and what is not, and that subsequent provisions for joint management apply only to the former. Admittedly, the Bilateral Water Commission that we propose is untested - How could it be otherwise? - but we do not agree that it

> *. . . opens a Pandora's box of intolerable, intractable, unending conflicts, disputes and appeals . . . on water allocations and reallocations.*

Those disputes and conflicts are already open, and we do not see how they can be resolved any more easily in a once-and-forever-after final status agreement. Indeed, our approach is to provide a mechanism for resolving them that will, we believe, be less contentious than a political agreement that must also deal with refugees, Jewish settlements and the status of Jerusalem.

Finally, but perhaps most importantly, there is a suggestion in Dr. Shuval's approach that Israel and Palestine can each have its cake and eat the cake too. It is just not possible in our view to make an agreement about how to manage internationally shared water without, in some way, surrendering some (ideally small) part of national sovereignty. Similarly, we do not see how it is possible to create a regime for sharing water while at the same time avoid giving

> *. . . the joint management any authority which conflicts with the existing laws of either country . . ."*

In our view, a modest surrender of sovereignty and some changes to existing legal regimes are inevitable for any such agreement. In the case at hand, they are all the more so given the nearly 50 years of military occupation of large parts of what will be the future State of Palestine.

من المفهوم إلى التطبيق :

إنها لخطوة هامة في الانتقال من المفاهيم المجردة لقانون المياه الدولي إلى تطبيقاته العملية في مناطق معينة وبمشاركة مؤسسات قابلة للحياة والتي يمكن أن تتوسط بشكل ناجح بين المتطلبات المتنافسة للحصول على مصادر المياه المشتركة. إن مقترح (شبكة أصدقاء الأرض في الشرق الأوسط) كما هو مبين في هذا المقترح يهدف إلى الإشارة إلى كيفية اتخاذ مثل هذه الخطوة. فهو يعكس احتياجات عالم القرن الواحد والعشرين واتجاهاته.

وبالطبع هناك انتقادات إزاء مقترح (شبكة أصدقاء الأرض في الشرق الأوسط). وأحد الانتقادات يتعلق بكون هذا المقترح غير مكتمل ونرد على هذا الانتقاد بقولنا إننا نعترف بأننا " مذنبين" فهناك حاجة لبذل جهد كبير في سبيل تحويل المفاهيم والمؤسسات المذكورة أعلاه إلى عمليات حقيقية ومؤسسات واقعية. وكل هذا العمل بحاجة لمن ينجزه . ومع ذلك لن يتم ذلك ما لم يقتنع السياسيين أن الإسرائيليين والفلسطينيين هم مؤيدين لمثل هذا المقترح ويؤمنوا انه على المدى البعيد سيتم حكم الشعبين من خلال نظام مرن وليس جامدا بخصوص إدارة مصادر المياه المشتركة .

وهناك انتقاد آخر يدعي أن هذا المقترح متفائل جدا وانه ليس من السذاجة أن هناك الكثير من الثقة مطلوبة من شعبين لديهما اتجاهان مختلفان بخصوص إدارة المياه خاصة بعد سنوات كثيرة من الصراع. ونرد على هذا الانتقاد بقولنا أن (شبكة أصدقاء الأرض في الشرق الأوسط) "غير مذنبة" . إن استنتاجنا يستند على أن عملية تطوير الاحترام المتبادل والتقدير في مفاوضات المياه هو الأساس السائد. يذكر ولف ١٩٩٩ في مراجعته البارعة في مقالة عنوانه " المعايير للحصص العادلة : جوهر النزاع العالمي على المياه " إن تقريبا جميع المفاوضات الدولية حول حصص المياه خلال القرن الماضي أو أكثر قد استأنفت بناءا على" اعتراف" كل طرف "باحتياجات" الطرف أو الإطراف الآخرين بدلا من بداهة المبادئ أو الحقوق , ففي هذه المفاوضات يعترف كل جانب عادة بالقيود التي تقيد الجانب الآخر . وفي سياق مختلف نوعا ما فقد وجد سيم وآخرون (١٩٩٩) أن القرارات في استراليا تتطلب توازن حصص الماء مع الاستخدامات البيئية والإنسانية ووجد أن الأحكام المحلية تجاه" العدالة " (مع المشاركة المحلية في اتخاذ القرارات) لعبت دورا بارزا أكثر من اعتبارات الفاعلية الاقتصادية. وبالطبع يوجد لدينا في غور الأردن تاريخ من القمم التي عقدت على طاولات النزهات والتي تمكنت من إدارة الماء في غور الأردن خلال ما يقرب من ٤٥ عام , عندما كان نهر الأردن خط الهدنة بين إسرائيل والأردن على الرغم من كون الدولتين في حالة حرب شكليا.

وفي الختام يجب أن نوافق على أن اقتراح (شبكة أصدقاء الأرض في الشرق الأوسط) كما تم وصفه أعلاه لم تتم تجربته بعد وانه غير مجرب كوحدة كاملة . ويمكن تقريبا إيجاد كل جزء منه في اتفاقيات المياه السارية المفعول في أماكن أخرى في العالم على المستويات الوطنية والإقليمية والدولية. ما تبقى التحدث عنه في الفصل السادس هو كيفية تحويل المقترح من المفهوم إلى تطبيق عملي واقتراح الخطوات الواجب اتخاذها في وضع مقترح (شبكة أصدقاء الأرض في الشرق الأوسط) بشكل حازم على المائدة السياسية على كلا جانبي الخط الأخضر.

لرخص ضخ المياه وقيود حفر الآبار إلى اللجنة الثنائية للمياه. بالإضافة لأدوارهم الأخرى فانه من المتوقع من المستشارين الاثنين الكبار تزويد اللجنة الثنائية للمياه بتعليق على أربعة أنواع من المعلومات:

- بيانات عن كمية المياه (بما في ذلك المخططات).
- بيانات جودة المياه .
- القيود البيئية على سحب المياه والتخلص من المياه العادمة .
- ملائمة تزويد مياه ذات جودة مناسبة.

لا يتوقع من مكتب الاستشاريين العلمين الحفاظ على قاعدة بيانات مستقلة وإنما التأكد من إمكانية الوصول إلى قواعد البيانات التي يحتفظ بها الطرفين. وبالإضافة إلى واجباته في اقتراح ومراقبة طرق التدفق ومعايير الجودة الضرورية للمحافظة على الصحة البيئية لاماكن تجميع المياه المشتركة، يتوجب على المكتب أيضا أن يجد السبل لضمان حد أدنى للحصص للاستخدام المنزلي والالتزام بمبدأ" الحق الإنساني في الحصول على الماء " لكل بيت في ظل مجتمع قانوني .

مجلس إدارة المياه المحلي:

سيحدد مجلس أدارة المياه المحلي جميع اللجان والأجسام ويسجلها والتي تدير مصادر الماء محليا وتعيد توزيع الماء بغض النظر فيما إذا كانت تابعة لأنظمة ملكية خاصة أو جماعية . والمعايير المستخدمة لهذا التحديد ستكون وجود "قواعد قيد الاستخدام" محليا, أي أن القواعد تكون حسب المصدر الذي تديره بالفعل جماعة معينة في ظروف محددة. وعادة ما تختلف هذه القواعد عن القواعد الرسمية، فيمكن على سبيل المثال أن تبقى شفوية ولكن تطاع بشكل دقيق جدا داخل المجتمع. وفي الواقع فان عملية تسجيل مؤسسات المياه المحلية تهدف إلى إعطائهم استدامة في تفاعل لاحق مع اللجان والأجهزة المذكورة آنفا. وواجب آخر لمجلس إدارة المياه المحلي هو مساعدة مجلس وساطة المياه للتأكد من أن المجموعات المحلية أو المؤسسات التي تدير مصادر المياه ذات العلاقة تتم استشارتها بالكامل خلال إجراء أي تحقيق تحت رعاية مجلس وساطة المياه.

إن تحديد أنظمة حقوق الملكية المحلية أمر صعب وفي بعض الحالات تكون هذه العملية موضع انتقاد لأنها استهدفت التصنيفات القانونية للأنظمة المحلية والتي كانت غريبة بالنسبة لها. فعلى سبيل المثال في حالة كون قانون ماء وطني موضع الهام ليبرالي جديد فإنها استهدفت تصنيفات الملكية الخاصة فيما كان في الواقع مفاهيم ملكية جماعية. كما أن أنظمة حقوق الملكية المحلية في حال تطور مستمر , ويعتبر هذا الأمر جانب هام من قدرتهم على التحمل في وجه المتغيرات المناخية والفصلية والديموغرافية . إن تحديد مثل هذه الأنظمة عادة ما ينطوي على كونها متحجرة (بولنز ٢٠٠٩).

إن مقترحنا يضم الدروس والعبر التي تم تعلمها من هذه التجربة , فهو يقترح إدخال مؤسسات حقوق الملكية المحلية على أنها كيانات ديناميكية لا يسعى المقترح إلى خنقها في نموذج " مرة واحدة والى الأبد " ولا يتبنى تصنيفات تم خلقها اصطناعيا نتيجة لقانون المياه الوطني لوصف التصنيفات التي تطورت بشكل طبيعي .

من المستحيل التوصل إلى اتفاقية فانه سيتم تحويل القضية إلى مجلس وساطة الماء (انظر في الأسفل) وهو جسم موازي للجنة الثنائية للمياه في المكانة ولديه الكثير من الأدوات للتوصل إلى تسوية , إذا لزم الأمر ممارسة السلطة الكافية لفرض حل ما.

نحن نقترح أن تتألف اللجنة الثنائية للمياه من سبعة أعضاء تختار كل حكومة لكل طرف ثلاث أعضاء بالإضافة إلى عضو آخر ينتخبه الأعضاء الستة من أي دولة غير دولتي الطرفين. ويتم اتخاذ القرارات في اللجنة الثنائية للمياه بالأغلبية شرط أن عضوين على الأقل من الثلاث المنتخبين من كل طرف يكونان مؤيدين لأي قرار. وتضمن طريقة التصويت هذه أن ثلاث أعضاء من طرف واحد وعضو من غير المنطقة لا يمكنهم أن يشكلوا " أغلبية " في فرض حل على الطرف الآخر ولكن يسمح لوجود حل ما حتى بوجود اختلاف جذري بينهما.

وقد تم اقتراح لجنة فرعية بهيكلية مشابهة للحوض المائي الجبلي لأنه من الأهمية بمكان تزويد مياه صالحة للشرب الا انه يعتبر من أكثر مصادر المياه عرضة للزوال في المنطقة. وللاختصار لن يتم مناقشة اللجنة الفرعية للحوض الجوفي الجبلي هنا ولكن يمكن إيجاد نموذج مقترح في تقارير فيتلسون وحداد (٢٠٠٠, ١٩٩٨).

مجلس وساطة المياه:

يستلم مجلس وساطة المياه الشكاوي من أي مجتمع أو مؤسسة التي تذكر أنها تأثرت سلبيا من مشروع مياه مخطط تنفيذه أو ممارسة حالية داخل مجتمع آخر أو مؤسسة بما فيها الحالات التي تكون فيها هذه الممارسات مثل التخطيط الحضري غير المرتبط مباشرة مع إدارة المياه. كما انه سيتلقى شكاوي تتعلق بالتوزيع غير العادل للمياه أو مياه ذات جودة متدنية . كما أن المجلس سيقوم بدور الوسيط في حالات الخلاف بين اللجنة الثنائية للمياه وأي من لجانها المنبثقة عنها.

وبالنسبة لجميع الظروف المذكورة آنفا فان الدور الرئيسي لمجلس وساطة المياه هو الاستماع إلى تبريرات الأطراف المرتبطين في الشكوى أو النزاع ومن ثم المحاولة لإيجاد تسوية . وفي الحالات التي تفشل فيها عمليات التسوية أو عندما يكون الأثر المزعوم غير قابل للإثبات من خلال الأدلة المتوفرة فان مجلس وساطة المياه مخول بإجراء تحقيق مستقل, ويمكن عقد ندوات أو اجتماعات عامة وتفحص عدة خيارات من الحلول المقترحة لحل النزاع. ويجب حفظ السجلات والملفات ونشرها عن كل جلسات الاستماع العلنية وكذلك جميع التوصيات الموجهة للمجلس والصادرة عنه وفي نهاية المطاف لا يملك مجلس الوساطة للمياه الصلاحيات لفرض حل ويستخدم تلك الصلاحية فقط بعد استنفاذ كافة الخيارات.

مكتب الاستشاريين العلميين:

يتألف مكتب الاستشاريين العلميين من " مستشارين علميين كبار عدد ٢". يتم ترشيح كل واحد من الوكالات ذات العلاقة في كل حكومة بالإضافة إلى طاقم من الموظفين . ويكون المكتب مسئول عن تقديم التقارير إلى اللجنة الثنائية للمياه حول القضايا ذات العلاقة بجودة المياه وكميتها وكذلك تقديم التوصيات المناسبة

إن هذه الهيكلية تقبل المبادئ العامة لإدارة المياه المشتركة إلا أنها ربما تتجاوز أو ربما تتخلف عنها بهدف التأكيد على المساواة في جميع الحقوق والمسؤوليات المتعلقة بإدارة المياه المشتركة تماما مثل هدف الإنصاف والعدل. فان المساواة في الحقوق والمسؤوليات لا يقصد بها أن كل طرف في الاتفاقية سيحصل على كمية متساوية من الماء، كما أنها تعني أن كل طرف سيكون له موقف متساو داخل كل المؤسسات للإدارة المشتركة لأجهزة المياه المشتركة والفرص المتساوية في المشاركة في عمليات صنع القرارات .

إن أدوات الإدارة الرئيسية المتوفرة لدى المؤسسات، والمبينة في الشكل ٢ هي عبارة عن المراقبة المستمرة والوساطة المستمرة. وكأنها بعيدة عن طريقة العمل ببساطة فان المزج بين المراقبة والوساطة هو الأساس الذي يستند عليه اخذ القرارات المتعلقة بكمية سحب الماء من كل بئر أو خزان أو نبع. فلهذا الأمر تبعات كثيرة بما فيها الحاجة إلى المعالجة العادلة لمستخدمي المياه الذين يجدون أنفسهم مطالبين بتخفيض نسبة الاستهلاك . فعلى سبيل المثال ربما يتوجب على مستخدمي ماء بئر للأغراض المنزلية أن يطالبوا بإيجاد بديل فوري لتلك المياه من مصدر آخر. وعلى العكس من ذلك فان مستخدمي بئر يزود مياه الري ربما يطلب منهم التخفيض من الاستهلاك في أوقات معينة من السنة أو قبول تعويض مادي (مع نصيحة فنية) بالتحول إلى طرق ووسائل يغذيها ماء المطر. ستطبق آليات المراقبة المستمرة والوساطة على كل المياه المشتركة بغض النظر عما إذا كان النظام خاص أو جماعي أو مشاع. و مع ذلك ستكون آليات الوساطة أكثر ملائمة للمؤسسات الفلسطينية الحالية لا للمؤسسات الإسرائيلية لأنها مركزية جدا.

اللجنة الثنائية للمياه:

ستستبدل اللجنة الثنائية للمياه (ل ث م) اللجنة المشتركة للمياه الحالية ولكنها ستكون مسئولة عن جميع المياه المشتركة وليس فقط المياه الفلسطينية (كما هو الحال مع اللجنة المشتركة للمياه) وتكون مسئولة مباشرة أمام الحكومتين الإسرائيلية والفلسطينية بوجود تفويض هام ومحدد، وأهم ما ستقوم به :

- وضع قيود وحدود لضخ ومعايير المعالجة وأهداف ضخ المياه في الآبار الجوفية بناءا على التوصيات التي قدمتها لجانها الاستشارية (انظر في الأسفل).
- منح تراخيص لمشاريع حفر آبار جديدة بناء على التوصيات التي قدمتها لجانها الاستشارية.
- تطوير معدلات ضخ الابار الجوفية المحتواة والتي تعتبر بحكم طبيعتها مصادر غير متجددة لذا فان استخدامها يتوازن مع مرور الوقت مقابل قدرة أولئك الذين يستخدمون المياه لتطوير مصادر بديلة أو تقليل الطلب على الماء.

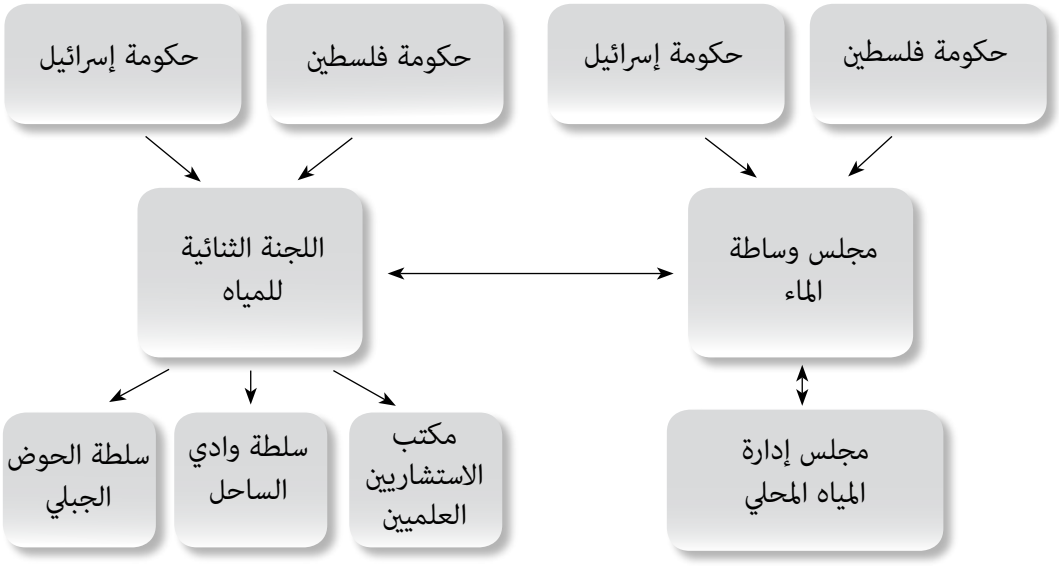
يجوز للجنة الثنائية للمياه أن ترفض التوصيات التي تتلقاها من أي من لجانها التابعة والمنبثقة عنها إلا أنها غير قادرة على اتخاذ قرار بديل لوحدها وإذا قررت رفض أي من التوصيات فيتوجب عليها تفسير الأسباب لرفضها أو الانتظار لتلقي توصيات جديدة. وإذا وجدت (اللجنة الثنائية للمياه) بعد حالتين من الرفض انه

في الوطن . ومع ذلك لا يزال حتى اليوم ٧٠٪ من المياه المستخدمة فعليا من جانب الفلسطينيين تدار من خلال مؤسسات محلية أو زراعية. و بالفعل ومن خلال دعم بعض المسئولين الفلسطينيين فرضت اتفاقية أوسلو مؤسسات فلسطينية نسخة طبق الأصل عن مؤسسات إدارة المياه الإسرائيلية (الضفة الغربية ٢٠٠٩) وعرف القليل من الفلسطينيين عن هذا العنصر في الاتفاقية ، إلا أنهم استمروا في التقيد بالمؤسسات القاعدية الموجودة أصلا والتي كما هو مبين وثابت في المنطقة (تروتير ١٩٩٩) وأماكن أخرى (مابري ١٩٩٦ و بكلتر ١٩٩٩) يتم النظر إليها على اعتبار أنها فعالة وعادلة.

الهيكلية المؤسساتية المقترحة:

إن الهيكلية المؤسساتية المقترحة لإدارة إسرائيلية فلسطينية مشتركة للمياه المشتركة مبينة في الشكل رقم ٢ .فهي تقسم القوة حول الماء بناءا عل عدة محاور:

- بين الحكومتين الإسرائيلية و الفلسطينية
- بين عدة مؤسسات إسرائيلية - فلسطينية مشتركة
- بين الأبعاد العلمية و السياسية للادارة
- بين المؤسسات التي تعمل على عدة مستويات متدرجة.



و أخيرا وعلى العكس من الأرض، فالمياه تعتبر مصدر طبيعي متنقل ، يتم استخدام كل قطرة ماء عدة مرات منذ اللحظة التي تسقط فيها باعتبار أنها مياه مترسبة في الضفة الغربية وعندما تصل إلى البحر أو تتبخر أو تتكثف. وخلال هذا المسار فان نوعية وجودة المياه تنخفض بشكل عام, كما أن الماء يستخدم ضمن الأنظمة السياسية المختلفة. فكل من هذه الأنظمة له هيكليته الخاصة من القوة في تحديد قواعد الإدارة . ويمكن استخدامها للمرة الأولى من خلال نظام ري زراعي مدار فلسطينيا ضمن نظام الملكية المشاعية قبل أن تعود المياه إلى البئر الجوفي وتظهر مرة أخرى في بئراسرائيلي تشغله شركة ميكوروت، الشركة الوطنية الإسرائيلية للمياه، بهدف تزويد مياه الشرب إلى بلدية إسرائيلية أو قرية فلسطينية. وكل مرة تقرر مجموعة من العوامل كيفية استعمال قطرة الماء وكذلك كيفية منع القطرة من التلوث و التي تتم أيضا بطرق مختلفة. يجب أخذ جميع الأنظمة السياسية المتنوعة هذه في الاعتبار في عملية صياغة اتفاقية المياه المشتركة.

انه لعنصر أساسي في مقترحنا أن الحصص الكمية للمياه الثابتة حتى لما قدمت على أنها حصص مئوية تعمل ضد مصلحة الحلول البعيدة الأمد. إن مقترحنا مصمم لتجنب هذه العيوب قدر الإمكان. ومع ذلك فان مقترحنا يفترض مسبقا تعريف للحدود النهائية بين دولة إسرائيل و الدولة المستقبلية لفلسطين.

البحث عن إجماع على الأهداف:

لقد أقنعتنا الأدبيات السابقة والنقاشات مع اختصاصي الماء على كلا الجانبين من الحدود أن الإجماع بين الطرفين يمكن أن يتم التوصل إليه بناءا على أربعة أهداف عامة بالنسبة لإدارة المياه المشتركة.

- إدارة مياه فعالة اقتصاديا
- إدارة مياه فعالة اجتماعيا و سياسيا و ليس بالضرورة متساوية
- إدارة مياه مستدامة بيئيا
- إدارة يمكن تنفيذها عمليا

يشرح رحمان ٢٠٠٨ كيف يمكن ملائمة الأهداف الثلاث الأولى مع الهدف العام (الاستخدام العادل والمنطقي) والذي يظهر تقريبا في جميع اتفاقيات المياه عبر الحدود. أما الهدف الرابع فهو بحاجة إلى مزيد من الشرح. يمكن تنفيذ اتفاقية عندما تتوفر لدى جميع الأطراف في الاتفاقية السبل و الوسائل المؤسساتية والاجتماعية والمالية لترجمتها عمليا. فالكثير من قوانين المياه التي تم تبنيها على مدى عشرين عام تفشل في هذا الامتحان. كما أن اتفاقيات أوسلو وقانون المياه الفلسطيني الذي تبعها لا تعتبر استثنائية. فقد خلقوا سلطة المياه الفلسطينية كجسم تنظيمي عهد إليه تنفيذ أحكام الاتفاقية المتعلقة بالماء (تروتير ١٩٩٩ ، ٢٠٠٧) و كان ذلك المسار مناسبا لإسرائيل والتي من خلال قانون الماء الأساسي في عام ١٩٥٩ قد أممت بشكل فعال جميع المياه

التأكد من أنه سيتم إدارت مصادر المياه المشتركة بطرق فعالة وعادلة ومستدامة . وليتسنى تحقيق هذه الأهداف الأوسع يتوجب في هذه المنطقة كما هو الحال في أي مكان آخر أن تتم معاملة إدارة الماء على أنها مسـألة أقل فنية وأكثر سياسية (فيتلسون ٢٠٠٢ و بلومكويس و انجرام ٢٠٠٣ و مول ٢٠٠٩).

كما ذكر آنفا نجد أن الاتجاه السائد نحو مشاركة المياه هو تقسيم الماء كما لو أنها كانت كعكة، حيث يتم تقسيم المياه المتوافرة بين الأمم المتشاطئة بناءا على صيغة كمية تشمل على حصص مطلقة أونسب مئوية. لقد كان ذلك النهج المستخدم في معاهدة السلام الإسرائيلية- الأردنية وبالنسبة لاتفاقية أوسلو. وتنعكس حاليا في المقترحات التي يعرضها فريقي التفاوض الإسرائيلي والفلسطيني (لوتزي وآخرون ٢٠٠٥، لوتزي و كيرشن ٢٠٠٩) ولسوء الحظ وعلى الرغم من قدرة المقترحات على تجنب المشاكل الدبلوماسية وحتى حل بعض المسائل القصيرة الأمد فان هذا النهج لمرة واحدة عاجز تماما عند تطبيقه على الأمد البعيد.

يقترح هذا الفصل نهج مختلف للإدارة المشتركة للمياه المشتركة. وبالرغم من تطبيق الأهداف والمبادئ والهيكلية المؤسساتية بشكل خاص على المياه المشتركة بين الإسرائيليين والفلسطينيين ، إلا أنه يمكن تطبيقها على أي مكان في العالم تكون فيه المياه عبر الحدود مقسمة ولا تعمل على توحيد شعبين أو أكثر.

يحدد القسم الرئيس الأول بهذا الفصل عيوب المناهج الكمية لمشاركة الماء و يصف القسم الثاني الأهداف التي صممت اتفاقيتنا المقترحة لتحقيقها وتتوج هذه الأسس والمواد الأولية في القسم الرئيس حيث يتم وصف الهيكلية المؤسساتية المقترحة لتنفيذ نظام الإدارة المشتركة للمياه المشتركة بين دولة إسرائيل ودولة فلسطين المستقبلية.

عيوب التقسيم الكمي لمصادر المياه المشتركة:

إن الأساليب الكمية للمياه المشتركة تعاني من ثلاث عيوب خطيرة: الأمن والثبات والخيال البيئي. فقد تصبح قضية ما " أمنية " عندما يتم النظر إليها على أنها مكون أساسي للأمن القومي. إذ أنها تتحول من مجال ما يمكن التفاوض عليه و ما يمكن أن يكون مصدر للتسوية. فعندما يتم تحديد مثل هذه الحصص فان تغييرها يعتبر تهديدا للأمن القومي.

إن نهج الكميات يؤدي إلى الثبات ونتيجة للتغيرات المناخية فانه من المحتمل أن تقل مصادر المياه المتجددة (FAO. ٢٠٠٨) في الشرق الأوسط مع حدوث آثار كارثية على الزراعة (فريموث و آخرون ٢٠٠٧).

إن الحصص الكمية الممكنة اليوم يمكن أن تكون مستحيلة بعد عدد قليل من السنين ويعود ذلك ببساطة إلى التغيرات المناخية . كما أن التغير الديموغرافي والتطور الاقتصادي سيؤديان إلى التأثير على الطلب على المياه بطرق لا يمكن التنبؤ بها. فالحصص الكمية التي تبدو منصفة حاليا يمكن أن تعتبر غير عادلة بعد عدد قليل من السنين في نظر طرف أو طرف آخر.

الفصل الرابع

مقترح أصدقاء الأرض في الشرق الأوسط لاتفاقية إسرائيلية فلسطينية حول الماء الصالح للشرب

> لا يمكن للمعاهدات و الترتيبات المؤسساتية أن تبقى ثابتة ، فعوامل مثل متطلبات الماء و أنماط الاستهلاك و فعالية الإدارة تتغير مع الوقت كما تتغير هياكل إدارة المياه و الممارسات و العمليات ... . ربما لن يكون من السهل صياغة معاهدات ديناميكية ، و إنما صياغة معاهدة لتعتبر في غاية الأهمية للسنوات القادمة (فاريس و بيسواس و تورتاجادا ٢٠٠٨ ص ٩) .

لقد أظهرت تقارير حساسة أحيانا الماء على أنه المشكلة الرئيسية التي تفصل بين الإسرائيليين والفلسطينيين، إلا أن الحدود و اللاجئين و مكانة القدس و المستوطنات الإسرائيلية في المناطق المحتلة تبدو كأنها أكثر ميلا للنزاع منها إلى المفاوضين و الباحثين. فقد بين كل من (ولف و غليك) أكثر من مرة أن الدول المتشاطئة تتعاون حول المياه الحدودية بدلا من القتال حولها. (ولف ١٩٩٨ ، غايك ٢٠٠٠) وتعرض إسرائيل و الأردن حالة في الصميم ، كما تم الإشارة إليها في الملحق الثاني لمعاهدة السلام بينهما في عام ١٩٩٤.

مع ذلك فان غياب حروب حول الماء لا يعني أن الماء الصالح للشرب يخلو من النزاعات . فعلى سبيل المثال إن تخطيط المدن و الذي يسمح بوجود أسطح صلبة على قمم التلال يمكن أن يتدخل بشكل كبير في مخزون الينابيع في الوادي المقابل . فالمدن التي تحتاج إلى الماء للاستعمال المنزلي يمكن أن تجد أنفسها في نزاع مع المزارعين الذين يحتاجون الى الماء للزراعة و تربية الماشية ، فالمزارعين الذين قرروا تغطية قنوات الري بطبقة من الاسمنت يمكن أن يساهم قرارهم في الحد من تسرب المياه إلى الآبار الجوفية وهو الأمر الذي يؤذي انسياب الماء في آبار القرى المجاورة . كما أن الحفر الامتصاصية أو الأسمدة المنتشرة في الحقول يمكن أن تصل إلى الآبار الجوفية والتأثير على نوعية مياهها. و يمكن لضخ الماء فرديا أو جماعيا و بشكل مفرط أن يؤدي إلى منع الأنظمة البيئية من توفير عدد من الخدمات مثل إزالة التلوث والتحكم بالمزروعات والفيضانات ، فهذه عبارة عن نزاعات المياه الحقيقية التي تحدث كل يوم في سائر أنحاء العال. فهي بحاجة إلى إيجاد حلول لها، إلا أنها في كثير من الأحيان تحصل على القليل من الاهتمام في الحوار الوطني و الذي يظهر الماء كجزء من الثروة الوطنية. ومن المؤكد أن هذا الأمر ينطبق على الإسرائيليين و الفلسطينيين الذين يتجهون إلى تضخيم النزاع ليصبح قضية تتعلق بالأمن الوطني.

بدلا من التركيز على الحروب الدولية فإن المسألة السائدة حول المياه الحدودية اليوم كما هو الأمر دائما هو

من السيطرة على الأخر. فاللجنة الثنائية للماء ستستبدل اللجنة المشتركة للمياه الحالية وتكون مسئولة عن كل مصادر المياه المشتركة وليس المصدر الفلسطيني لوحده. وتتخذ قرارات رئيسية حول نسب الضخ والتسليم بناء على النصائح والمشورة في جسم مهم يسمى "مكتب الاستشاريين العلميين" ويتألف من طاقم معين أو مقترح من الحكومتين. وإذا وجدت اللجنة الثنائية للماء أنها غير قادرة على قبول قرار الاستشاريين العلميين أو أن هناك مجموعة أو لجنة تعارض القرار عندها يبدأ عمل مجلس الوساطة للماء. بناء على مشورة جسم استشاري آخر فأن مجلس إدارة الماء المحلي المسئول عن تقديم المشورة وإذا كان ملائما يكون ممثلا للمجالس المحلية الأخرى، فان لدى مجلس الوساطة للماء عدة وسائل لتنفيذ عملية البحث المحلي عن حل بما في ذلك المنتديات العامة والتحقيقات العلمية. وفي نهاية المطاف سيتم الإشارة بشكل اقل بخصوص نجاح العملية ليس من خلال عدد النزاعات التي تم حلها من خلال جهود الوساطة ولكن من خلال الأعداد (التي من الصعب توثيقها) والتي تم حلها من خلال عملية المفاوضات المبنية على التنازل والكسب والتي لا يمكن أن تصل أبدا طاولة مفاوضات الوساطة الرسمية.

ومن خلال هذه العملية فان الأهداف الأولية للمساواة والاستدامة تصبح مرتبطة من جانب واحد بالحاجة إلى حماية رأس المال بحيث تكون إدارة الماء فعالة اقتصاديا من حيث المبدأ ومن الجانب الأخر ترتبط بالحاجة إلى المحافظة على رأس المال المؤسساتي والاجتماعي بحيث يكون أي حل للقضايا المتعلقة بالماء المشترك قابل للتنفيذ عمليا وعلى كلا الجانبين من الحدود. وبالرغم من الأهداف والمبادئ والهيكلية المؤسساتية التي تم تطبيقها بشكل خاص على المياه المشتركة بين الإسرائيليين والفلسطينيين إلا انه يمكن تطبيقها على أي مكان في العالم تكون فيه المياه عبر الحدود مقسمة ولا تعمل على توحيد شعبين أو أكثر. إذا فالعملية هي أكثر باتجاه العلوم الاجتماعية وحل النزاعات من أن تكون باتجاه العلوم الفيزيقية والهيدرولوجية. على الرغم من أن هذه الأنظمة توفر بالفعل السياق الذي سيعمل فيه أي تصميم مؤسساتي، ينتهي التقرير بعدد من التعليقات حول الخطوات القادمة الواجب اتخاذها في سبيل تحريك مقترح (أصدقاء الأرض في الشرق الأوسط) إلى الأمام على المديين القصير و البعيد.

تدعي إسرائيل أنها سنت القانون الوطني الحديث الأول للماء من خلال تبني القانون الأساسي للماء في ١٩٥٩. إن المقترح الوارد في هذا التقرير موجه لكل من الإسرائيليين والفلسطينيين لصياغة أول اتفاقية ثنائية حديثة للمياه. وهو الأمر الذي يمكن تمريره إلى اتفاقية الحل النهائي بين الدولة الحالية إسرائيل والدولة المستقبلية فلسطين.

ملخص تنفيذي

عادة ما تعتبر اتفاقيات الماء عبر الحدود على أنها اتفاقيات حصص . أي انه يتم التعامل مع الماء كما لو أنه كان كعكة تتقاسمها دول مشاطئة. ويسري هذا الأمر على الأراضي التي تعتبر ثابتة وانما لا يسري على المياه والتي ليست تتحرك فقط عبر وتحت الحدود السياسية للدول وإنما يمكن استغلالها أكثر من مرة منذ لحظة تكونها كرواسب حتى تجد طريقها باتجاه البحر أو تتبخر أو تصب في آبار جوفية عميقة. وعلى الرغم من كون الحصص الثابتة مفيدة أحيانا لتجنب النزاع وإيجاد حلول لمشاكل مستعجلة على المدى القصير الا إنها تعتبر طريقة غير ملائمة لضمان إدارة فعالة وعادلة ومستدامة للمياه المشتركة على المدى البعيد. فالمعادلات والصيغ القديمة للأنظمة الشرعية حول حصص توزيع المياه مثل "الأول فالأول له الحق" قد تم استبدالها تدريجيا في معظم أجزاء العالم . وعلى كل حال لا يوجد سبب لاستمرارها في هذه المنطقة بعد مرور أكثر من خمسين عاما من الاحتلال العسكري الإسرائيلي للأراضي الفلسطينية، فالاتجاهات الأحدث تشدد على مسؤوليات استعمال الماء المشترك بطرق منطقية وعادلة وتعمل على تجنب إلحاق الأذى بالدول المجاورة. فالنقطة المركزية هنا هي في تحديد هذه الشروط بطرق تكون قابلة للتطبيق والقبول في ظروف معينة مما ينقلنا هذا الأمر إلى جوهر اهتمام هذا التقرير الصادر عن ايكوبيس / أصدقاء الأرض في الشرق الأوسط.

إن مقترح شبكة أصدقاء الأرض في الشرق الأوسط يتبنى هيكلية إدارة مشتركة بين إسرائيل والحكومة الحالية أو أي حكومة مستقبلية لفلسطين بالشكل الذي يؤدي إلى حل النزاع المستمر حول استخدام المياه ويفعل ذلك بطريقة فعالة من خلال رفع صفة الوطنية والأمن حول استخدام المياه. أي انه يتم مشاركة المياه من خلال قواعد صممت لحماية النظام البيئي في سبيل مصلحة الجميع و كذلك توصيل المياه إلى أطراف مختلفة بطرق تلبي احتياجاتهم و تسمح بتطورهم دون اللجوء إلى إفقار تنمية الجار أو نزاعات أو خلافات الأمن القومي.

لم تكن عملية الإدارة المشتركة للمياه بالعملية السهلة أبدا إلا أنها أصعب بالنسبة للإسرائيليين والفلسطينيين بسبب السنوات الطويلة من النزاع بينهما وبسبب نسبهما المختلفة وأنماط التطوير الاقتصادي خلال تلك السنوات وكذلك الاتجاهات المختلفة باتجاه إدارة المياه التي يتبناها كل طرف ، فإسرائيل اتبعت اتجاه أعلى ثم أسفل ، أما الفلسطينيين فاتبعوا اتجاه الأسفل ثم الأعلى.

إن جوهر الاتجاه المعدل حول المياه المشتركة بين شعبين ذا سيادة يقع في عملية الوساطة وحل النزاعات مع كون الخطوط الأساسية متوازية مع احتياجات العدل والإنصاف والاستدامة. وهناك أربعة أطراف تعتبر ذات أهمية بالنسبة للمقترح. جهازان رئيسيان بحيث يكون كل جهاز مسئولا أمام حكومته ويقود العملية. لجنة ثنائية للماء ومجلس الوساطة للماء. ويتألف كل جسم من عدد متساو من الممثلين الإسرائيليين والفلسطينيين بالإضافة إلى عضو أضافي من الخارج. وإذا كانت هناك حاجة إلى التصويت فان القواعد توضع لمنع أي جانب

EcoPeace / Friends of the Earth Middle East
ايكوبيس / جمعية أصدقاء الأرض الشرق الأوسط
אקופיס / ידידי כדור הארץ המזרח התיכון
EcoPeace

نهج إتفاقية حديثة لتقاسم مصادر المياه المشتركة بين الاسرائيليين و الفلسطينيين:

إقتراح مقدم من شبكة أصدقاء الأرض - الشرق الأوسط

أعده

ديفيد ب. بروكس وجولي تروتيير

بمشاركة

نادر الخطيب, جدعون برومبرج، ومنقذ مهيار

كتب الملاحظات والنقد هيلل شوفال ونداف شيليف

بدعم من الاتحاد الأوروبي

ואת המסגרות המוסדיות המשורטטים לעיל לכדי תהליכים ואפיקי פעולה אמיתיים. אולם, עבודה זו לא תיעשה עד אשר הדרגים הפוליטיים ישתכנעו כי ישראלים ופלסטינים תומכים בסוג כזה של פתרון מוצע וכי הם מאמינים שבטווח הארוך, גישה גמישה לניהול משאבי המים המשותפים, לעומת הגישה הנוקשה, תטיב עם שני העמים.

ביקורת נוספת שעלולה להישמע, שהצעה זו אופטימית מדי. האם אין היא מניחה מידה רבה מדי של אמון בין שני העמים לאחר שנות סכסוך כה רבות וכאשר כל צד מחזיק בגישה שונה (ריכוזית לעומת מבוזרת) לניהול מים? להאשמה זו ארגון ידכ"א משיב "לא אשם". המסקנה שלנו היא, כי בנושא המים כבר קיים תהליך של בניית הערכה ואמון הדדי בדיוני שני הצדדים והוא אף מהווה את הנורמה בתחום הזה. במאמר הסקירה המצוין לעיל, "קריטריונים להקצאות שיוויוניות: לב–לבו של משבר המים הבינלאומי", מדווח וולף (Wolf, 1999) כי כמעט כל מקרי המשא ומתן הבינלאומיים בנושאי הקצאות מים בחצי המאה האחרונה התקדמו על בסיס הכרת כל צד ב"צורכי" הצד השני, ולא על בסיס עקרונות או זכויות א–פריוריות. משאים ומתנים אלה מתאפיינים בכך שכל צד מזהה את המגבלות הכובלות את הצד השני, במונחים של שטחי השקיה, גודל האוכלוסייה או צרכים הנובעים מפרויקט מוצע כלשהו. בהקשר שונה, סיים ועמיתיו (Syme et al, 1999) מצאו כי באוסטרליה, במקרים של החלטות אשר דרשו איזון בין הקצאת המים לסביבה ולשימושים אנושיים, הרי ששיפוטים מקומיים של "הוגנות" (בד בבד עם השתתפות מקומית בתהיך קבלת ההחלטות) מילאו תפקיד משמעותי הרבה יותר מאשר שיקולים של יעילות כלכלית. באזורנו אנו עדים לתקדים של "ועידות הפיקניק" (picnic table summits) שבאמצעותם ניהלו ישראל וירדן את המים בעמק הירדן במשך 45 השנים שבהן נהר הירדן היה קו שביתת הנשק בין שתי המדינות שהיו, באופן רשמי, נתונות במצב מלחמה.

לסיכום, אנו מסכימים שהצעת ידכ"א, כפי שתוארה לעיל, טרם נוסתה. אולם ההצעה לא נוסתה רק כמכלול. כמעט כל מרכיביה מהווים חלקים מהסכמי מים המצויים בשימוש פעיל ברחבי העולם, ברמה הלאומית, האזורית או הבינלאומית. נותר לשקול, כיצד להעביר את ההצעה מהרובד המושגי אל הפרקטיקה, ולהציע את הצעדים הבאים הנדרשים על מנת להניחה כהצעת עבודה של ממש בפני מקבלי ההחלטות משני צידי הקו הירוק.

איכות הנדרשים לשימור האיכות האקולוגית של אגני ניקוז של מים משותפים, המשרד חייב גם למצוא דרכים להבטיח הקצאת מים ביתית מינימלית, העולה בקנה אחד עם "זכות היסוד למים", לכל בית–אב בכל קהילה מוכרת.

ועדה לנושאי מים מקומיים (Local Water Management Board)

הועדה לנושאי מים מקומיים תזהה, תאתר ותנהל רישום של כל הגופים אשר מנהלים משאבי מים ברמה מקומית ומפיצים מים, בין אם גופים אלה פועלים על פי משטר בעלות פרטי או קהילתי. הקריטריון המשמש לזיהוי גופים אלה יהיה קיומם של "כללי–שימוש" מקומיים – כלומר, החוקים אשר לפיהם המשאב מנוהל בפועל על ידי קבוצה בתנאים ספציפיים. פעמים רבות, כללים אלה שונים מהחוקים הרשמיים. לדוגמה, ייתכן כי הכללים עצמם אינם כתובים, אלא מועברים בעל–פה והקהילה מקפידה על הציות לכללים אלה. למעשה, תהליך רישום מוסדות המים המקומיים נועד להעניק להם זכות עמידה בקשר העתידי עם הגופים שתוארו לעיל. חובה נוספת של הועדה לנושאי מים מקומיים היא לסייע למועצת הגישור בנושאי מים להבטיח כי בכל חקירה המתבצעת מטעמה, יתייעצו גם עם הקבוצות והארגונים המקומיים המנהלים את משאבי המים הנדונים.

אין זה פשוט לזהות מערכות מקומיות של זכויות קניין. היו מקרים שבהם תהליך כזה זכה לביקורת מכיוון שהוא השליך על מערכות מקומיות קטגוריות משפטיות אשר היו זרות להם. לדוגמה, במקרה שבו חוק המים הלאומי התבסס על תפיסה ניאו–ליברלית, קטגוריות של בעלות וקניין פרטי הושלכו על מה שהיו, בפועל, מסגרות קניין קהילתיות. זאת ועוד, מערכות מקומיות של זכויות קניין ממשיכות להתפתח ולהשתנות כאמצעי הסתגלות לנוכח שינויי האקלים, השינויים העונתיים ושינויים דמוגרפיים. לעיתים קרה שההכרה במערכות כאלה הביא בפועל, לקיבעון של אותן מערכות גמישות (Boelens, 2009).

ההצעה שלנו מבקשת לשלב את הלקחים שנלמדו מנסיונות קודמים אלה. היא מציעה לשלב מוסדות זכויות קניין מקומיים כישויות דינאמיות הפועלות בתוך מערכת דינאמית. היא אינה מכפיפה אותם לתוך תבנית בלתי–משתנה ("פעם–אחת–ולתמיד") ואינה מאמצת קטגוריות שנוצרו באופן מלאכותי על ידי חוק המים הלאומי לתיאור מסגרות חוקיות שנוצרו באופן אוטונומי.

מהלכה למעשה

אין זה פשוט לעבור מהדיון המופשט בחוק המים הבינלאומי ליישומו המעשי באזורים שונים בעולם, תוך הקמת מוסדות בני–קיימא שיוכלו לתווך ולגשר בהצלחה בין דרישות סותרות על משאבי מים משותפים. ההצעה של ידידי כדור הארץ–המזרח התיכון, המוצגת בראשי פרקים בדוח זה, נועדה להתוות דרך לביצוע המעבר הזה. היא משקפת הן את הצרכים והן את המגמות של העולם במאה ה–21.

ניתן להעלות מספר ביקורות ביחס להצעה של ידכ"א. ניתן לטעון שההצעה אינה מובנית ומגובשת במלואה. במקרה זה, אנו "מודים באשמה". עבודה רבה תידרש על מנת להפוך את העקרונות הכלליים

ובהיותו ככל הנראה מקור המים הרגיש ביותר באזור. לא נרחיב כאן בנושא וועדת אקוויפר ההר, אולם ניתן לעיין במודל מוצע עבורה בדוחות של פייטלסון וחדד (Feitelson and Haddad, 1998; 2000).

המועצה לגישור בנושאי מים (Water Mediation Board)

המועצה לגישור בנושאי מים תהיה הגוף שירכז ויטפל בתלונות של כל קהילה או ארגון הטוענים שהם מושפעים לרעה מפרויקט מים מתוכנן, או מפרקטיקה מתמשכת המתרחשת בקרב קהילה או ארגון אחר – ובכלל זה מקרים שבהם פרקטיקות אלה, כדוגמת תכנון עירוני, אינם קשורים ישירות לניהול מים. המועצה תשמע גם תלונות הנוגעות להפצה לא-שוויונית של מים או לאיכות מים בלתי-מספקת. בנוסף, המועצה תשמש כגוף מגשר במקרי אי-הסכמה בין הוועדה הבי-לאטרלית ומי מגופי-הסמך שלה.

בכל המצבים שהוזכרו לעיל, התפקיד המרכזי של המועצה לגישור בנושאי מים יהיה לשמוע את טיעוני הצדדים המעורבים בטענה או בסכסוך ולנסות ולגשר ביניהם. במקרים שבהם תהליך הגישור נכשל, או שההשפעה השלילית אינה ניתנת להוכחה באמצעים הקיימים, מועצת הגישור תוסמך לערוך חקירה עצמאית. היא תוכל לעשות זאת באמצעות פורומים פתוחים או שימועים ציבוריים ולנסות מגוון אפשרויות לפתרון הסכסוך. כל הנתונים והמידע בנוגע לשימועים הציבוריים יישמרו ויהיו פתוחים לציבור, וכך גם כל ההמלצות שיוגשו למועצת הגישור ושיוגשו על-ידה. בסופו של דבר, בידי המועצה לגישור בנושאי מים תהיה נתונה הסמכות לכפות החלטה, אולם יש לעשות שימוש בסמכות זו כמפלט אחרון בלבד.

משרד היועצים המדעיים (Office of Scientific Advisors)

משרד היועצים המדעיים יורכב משני "יועצים מדעיים בכירים", אחד מייצג את הרשויות הרלוונטיים בממשל הישראלי והשני מייצג את רשויות הצד הפלסטיני, ומצוות עובדים. המשרד יהיה אחראי לדווח לוועדה הבי-לאטרלית בנושאי מים על סוגיות רלוונטיות הנוגעות לאיכות המים ולכמות המים וכן להמליץ לוועדה על רשיונות הפקת מים ועל מגבלות קידוח. נוסף על תפקידיהם האחרים, מצופה משני היועצים המדעיים הבכירים להחזיק בגישה למידע בנוגע לארבעת הנושאים הבאים ולדווח עליו לוועדה הבי-לאטרלית:

- נתוני כמויות המים (כולל מיפוי)
- נתוני איכות המים
- מגבלות אקולוגיות על שאיבה וניצול מים ועל הטיפול בשפכים
- הספקת מים באיכות סבירה

משרד היועצים המדעיים אינו מצופה לנהל מאגר נתונים עצמאי, אולם מצופה ממנו להבטיח גישה למאגרי הנתונים המנוהלים על ידי שני הצדדים. נוסף על חובתו לנטר דפוסי זרימה ולהציע תקני

עלולים למצוא עצמם נדרשים לצמצם את שיעורי השאיבה. כך לדוגמה, משתמשיה של באר המספקת מים לצריכה ביתית יהיו זכאיים לתחליף מיידי ממקור מים אחר. מנגד, משתמשיה של באר המספקת מי השקיה עשויים להתבקש לצמצם את צריכת המים בתקופות שונות בשנה, או לקבל פיצוי כספי (יחד עם סיוע טכני) למעבר לשיטות השקיה במי גשמים.

ניטור מתמשך ומנגנוני גישור יחולו על כל המים המשותפים, בין אם המערכת היא פרטית, קהילתית או ציבורית. יחד עם זאת, מנגנוני גישור יהיו רלוונטיים יותר למוסדות הפלסטיניים הקיימים מאשר למוסדות הישראליים, משום שהמוסדות הישראליים כה ריכוזיים.

הוועדה הבי-לאטרלית לנושאי מים (Bilateral Water Commission)

הוועדה הבי–לאטרלית לנושאי מים תחליף את הוועדה המשותפת לנושאי מים, הפעילה כיום, אולם תישא באחריות לכל המים המשותפים, ולא רק למים הפלסטיניים (רק הם מצויים כיום באחריות הוועדה המשותפת לנושאי מים). הוועדה תדווח ישירות לממשלת ישראל ולממשלה הפלסטינית. תחומי אחריותה יהיו חיוניים, אך מוגבלים. התחומים החשובים לפעילות הוועדה הם:

- קביעת מגבלות לשאיבה, תקנים לטיפול ויעדים לשחרור, של מים מהאקוויפרים, על בסיס ההמלצות של הגופים המייעצים (ראו להלן)
- מתן אישורים לפרויקטי קידוח חדשים, על בסיס ההמלצות של הגופים המייעצים
- פיתוח שיעורי שאיבה עבור אקוויפרים כלואים (contained aquifers), שהינם מטבעם משאבים לא–מתחדשים, כך שהשימוש בהם יאוזן לאורך זמן כנגד היכולת של משתמשי המים לפתח מקורות חלופיים או לצמצם את צריכת המים.

הוועדה הבי–לאטרלית לנושאי מים רשאית לדחות המלצות שהיא מקבלת מכל אחד מגופי–הסמך שלה, אולם היא אינה יכולה להפיק החלטה חלופית לבדה. אם הוועדה דוחה המלצה כלשהיא, חובה עליה לנמק את הדחייה ולהמתין להמלצות חדשות. אם, אחרי פעמיים כאלה, הוועדה הבי–לאטרלית אינה מצליחה להגיע להחלטה, הסוגיה תועבר להמשך טיפול המועצה לגישור בנושאי מים (ראו להלן). המועצה לגישור מקבילה לוועדה הבי–לאטרלית מבחינת המעמד, אולם מחזיקה ביותר כלים לקידום פשרות וגם בכוח הנדרש לכפות פתרון, באם יהיה בכך צורך.

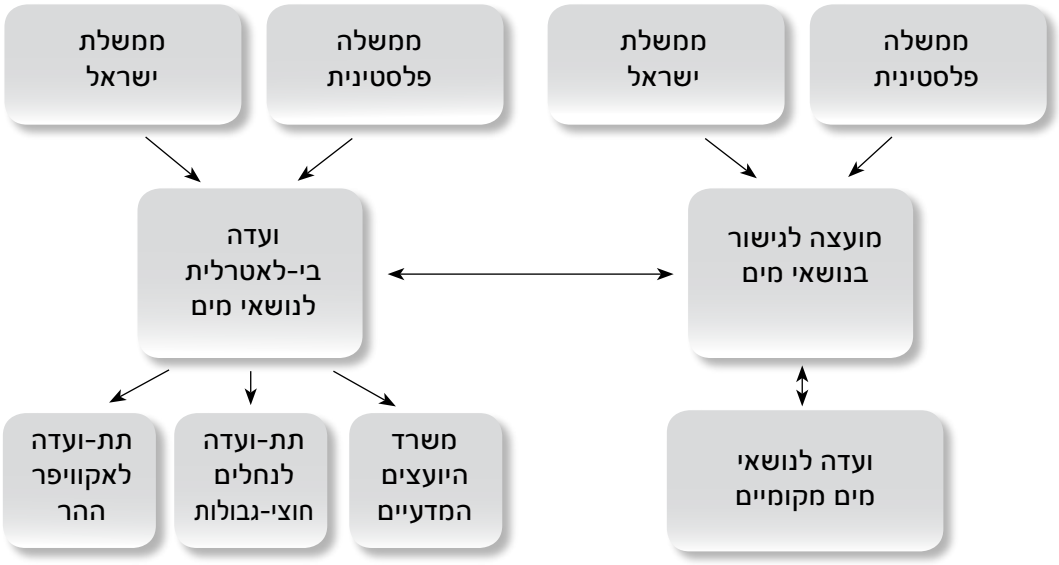
אנו מציעים שהוועדה הבי–לאטרלית לנושאי מים תהיה מורכבת משבעה חברים, מהם שלושה שייבחרו על ידי ממשלת ישראל ושלושה על ידי הממשלה הפלסטינית. חבר נוסף, ממדינה אחרת, ייבחר על ידי ששת חברי הוועדה. החלטות הוועדה הבי–לאטרלית יתקבלו על פי דעת הרוב, בכפוף לכך שלפחות שניים משלושת נציגיה של כל ממשלה תומכים בהחלטה. כללי הצבעה אלה נועדו להבטיח כי שלושת הנציגים של צד אחד, יחד עם חבר הוועדה שאינו מן האזור, לא יוכלו ליצור יחד "רוב" ולכפות החלטות על הצד השני. עם זאת, הכללים עדיין מאפשרים קבלת החלטות גם במקרים של אי–הסכמה.

תת–ועדה בהרכב דומה הוצעה עבור אקוויפר ההר, זאת בשל חשיבותו הקריטית לאספקת מי שתייה

המבנה הארגוני המוצע

המבנה הארגוני המוצע לניהול משותף ישראלי–פלסטיני של המים המשותפים מוצג בתרשים מס" 2. הוא מחלק את הסמכות על המים לאורך מספר צירים:

- בין הממשל הישראלי והפלסטיני
- בין כמה מוסדות ישראלים–פלסטיניים משותפים
- בין הממד המדעי והממד הפוליטי של הניהול
- בין מוסדות הפועלים בכמה רמות



תרשים 2

המבנה הארגוני המוצע מאפשר את מימוש העקרונות הכלליים של ניהול מים משותף, אולם הוא ממשיך מעבר לעקרונות אלה בשימו דגש על שוויון שני הצדדים מבחינת הזכויות ותחומי האחריות בניהול המים המשותפים. שוויון בזכויות ובתחומי האחריות אין פירושו כי כל צד יקבל כמות שווה של מים, אלא כי לכל אחד מהצדדים להסכם יהיה מעמד שווה בכל אחד ממוסדות הניהול המשותף של גופי המים המשותפים, והזדמנות שווה לקחת חלק בתהליכי קבלת ההחלטות.

כלי הניהול העיקריים המשמשים את המוסדות שפורטו בתרשים 2 הם ניטור מתמשך (continuous monitoring) וגישור מתמשך(ongoing mediation) . חשוב להדגיש כי לא מדובר בשיטת פעולה בלבד. השילוב בין הניטור והגישור משמש כבסיס לקבלת ההחלטות הנוגעות לשאיבת מים מכל באר, מאגר או מעיין. לשילוב זה יש השלכות רבות ובהן הצורך בהתייחסות הוגנת למשתמשי המים אשר

בצורה שונה. יש להביא בחשבון את המשטרים השונים הללו, כאשר מפתחים ומפרטים את ההסכמים לשיתוף במים.

חלק משמעותי ביותר בתזה שלנו הוא הטענה כי הקצאות כמותיות קבועות של מים, אפילו אם הן מוצגות כאחוזים, פועלות כנגד פתרונות ארוכי–טווח. הצעתנו נועדה ככל האפשר למנוע את הכשלים והחסרונות הללו. יחד עם זאת, ההצעה שלנו יוצאת מתוך הנחה כי תהיה הגדרה מוסכמת לגבי גבולות הקבע בין מדינת ישראל לבין הישות הפלסטינית העתידית.

חיפוש אחר הסכמה על היעדים

לאחר סקירת הספרות בנושא, ושיחות עם מומחי מים ישראלים ופלסטינים, אנו משוכנעים כי ניתן יהיה לבסס הסכמה בין שני הצדדים על בסיס ארבעה יעדים כלליים לניהול מים משותפים:

- ניהול מים יעיל מבחינה כלכלית
- ניהול מים שוויוני (לא בהכרח שווה), מבחינה חברתית ופוליטית
- ניהול מים בר–קיימא מבחינה אקולוגית
- ניהול אשר יוטמע ויישום בפועל

רחאמן (Rahaman, 2009) מסביר כיצד שלושת היעדים הראשונים שצוינו לעיל מתאימים למטרה הכללית של "שימוש הגיוני ושוויוני", המופיעה כמעט בכל הסכמי מים חוצי–גבולות. היעד הרביעי מצריך הסבר נפרד. הסכם ניתן ליישום כאשר לכל הצדדים להסכם יש אמצעים מוסדיים, חברתיים וכלכליים לתרגום ההסכם למציאות. רבים מבין חוקי המים שאומצו במהלך 20 השנים האחרונות נכשלים במבחן זה. הסכמי אוסלו וחוק המים הפלסטיני שנבע מהם אינם יוצאי דופן. הם יצרו את רשות המים הפלסטינית כגוף רגולטורי האמון על יישום ומימוש תנאי ההסכם הנוגעים למים (Trottier, 1999, 2007). גישה זו התאימה לישראל, אשר בהתאם לחוק המים משנת 1959 הלאימה בפועל את כל המים במדינה. יחד עם זאת, גם כיום יותר מ–70% מהמים המשמשים בפועל את הפלסטינים מנוהלים על ידי מוסדות מקומיים או אגודות חקלאיים. למעשה, ובתמיכת כמה מהבכירים הפלסטינים, הסכם אוסלו כפה על הפלסטינים העתק של מנגוני ניהול המים בישראל (World Bank, 2009). מרבית הפלסטינים כלל לא הכירו את המרכיב הזה של ההסכמים והמשיכו לפעול בהתאם להסדרים המקומיים, אשר התנהלו מחוץ למוקדי הכוח הפוליטיים. הסדרים מקומיים אלה, כפי שמראות עדויות מהאזור (Trottier, 1999) ומאזורים אחרים (Mabry, 1996; Buckles, 1999) נתפסים, ככלל, כיעילים וכשוויוניים.

הגישה הרווחת לשיתוף במים, כפי שצוין לעיל, כרוכה בחלוקת המים כאילו היו עוגה; המים הזמינים מתחלקים בין המדינות השוכנות לצד מקווי ומאגרי המים בהתאם לנוסחה כמותית המביאה לידי ביטוי חלוקת המים בכמויות אבסולוטיות או באחוזים. זו הגישה שננקטה במסגרת גיבוש הסכם השלום בין ישראל לירדן, וכן בהסכמי אוסלו; גישה זו משתקפת כיום בהצעות שגובשו הן על ידי צוות המו"מ הישראלי והן על ידי הצוות הפלסטיני (Lautze et al, 2005; Lautze & Kirshen, 2009). אולם, אף על פי שגישה זו יכולה לסייע במניעת בעיות דיפלומטיות ואפילו בפתרונות קצרי-טווח של סוגיות מסוימות, הגישה של פתרון "פעם-אחת-ולתמיד", לוקה בחסר בטווח הארוך.

פרק זה יציע גישה שונה לניהול משותף של מים משותפים. אף על פי שהדגש מושם על המים המשותפים לישראלים ולפלסטינים, המטרות, העקרונות והמבנה הארגוני המוצעים כאן רלוונטים ומתאימים לכל מקום בעולם שבו מים חוצי גבולות מהווים נקודת מחלוקת בין שני עמים או יותר.

חלקו הראשון של הפרק מזהה את החסרונות בגישות הכמותניות לחלוקת מים ולשיתוף במים. החלק השני מתאר את המטרות שהצעתנו נועדה להשיג. לאחר הצגה מקדמית זו מגיע חלקו העיקרי של הפרק ובו אנו מתארים את המבנה הארגוני המוצע ליישום מערכת ניהול משותפת למים המשותפים למדינת ישראל ולמדינת פלסטין העתידית.

חסרונות בחלוקה כמותית של משאבי מים משותפים

גישות כמותניות לשיתוף מים סובלות משלושה חסרונות משמעותיים: "ביטחוניזציה" (securitization), חוסר גמישות, ויצירת פיקציה אקולוגית (התייחסות למים כאל משאב קבוע). סוגיה כלשהיא עוברת תהליך "ביטחוניזציה" כאשר היא מוצגת כמרכיב הכרחי בביטחון הלאומי. במקרה כזה הסוגיה מפסיקה להיות חלק מהתחום הפתוח למשא ומתן ונושא לפשרה. לאחר שההקצאות נקבעו, שינויין נתפס כאיום על הביטחון הלאומי.

הפימות מוביל גם לנוקשות ולחוסר גמישות. מקורות המים המתחדשים במזרח התיכון צפויים להצטמצם כתוצאה משינויי האקלים, ולכך צפויות השלכות חמורות במיוחד על החקלאות (Freimuth, et al., 2007; FAO, 2008). בשל שינויי האקלים, הקצאות כמותיות שהינן בגדר האפשר היום עלולות בהחלט להיות בלתי-אפשריות בעוד כמה שנים. זאת ועוד, שינויים דמוגרפיים ופיתוח כלכלי ישפיעו גם הם על הביקוש למים בדרכים שלא ניתן לצפות כעת. הקצאות כמותיות שנדמות כשוויוניות כיום עלולות להיתפס כלא-שוויוניות על ידי מי מהצדדים בעוד מספר שנים.

לבסוף, בשונה מקרקע, המים הם משאב טבע נייד. כל טיפה של מים מנוצלת מספר פעמים, מרגע נפילתה על הקרקע כמשקעים בגדה המעברית ועד שהיא מגיעה לים, מתאדה או עוברת תהליך אידוי-דיות (evapotranspiration). במהלך המסלול שעוברים המים, איכותם פוחתת. כמו כן, במים נעשה שימוש במסגרת משטרים שונים, כל אחד עם מבנה כוח משלו הקובע את כללי ניהול המים. ייתכן שהשימוש הראשוני במים הוא במערכת השקיה שמפעיל חקלאי פלסטיני במסגרת של משטר רכוש משותף, לפני שהמים חוזרים לאקוויפר ומופיעים מחדש בבאר ישראלית המתופעלת על ידי "מקורות", חברת המים הלאומית של ישראל, המספקת מי שתייה לרשות מקומית ישראלית או לכפר פלסטיני. בכל שימוש, השחקנים הקובעים כיצד תנוצל אותה טיפת מים וכיצד למנוע ממנה להזדהם, מאורגנים

פרק 4

הצעת ידידי כדור הארץ המזרח התיכון להסכם ישראלי-פלסטיני בנושא מים מתוקים

אמנות ונהלים מוסדיים אינם יכולים להתקיים באופן סטטי. גורמים כמו צריכת המים, דפוסי השימוש ויעילות דפוסי הניהול משתנים לאורך זמן וכך גם התפיסות השולטות לגבי ניהול מים, הפרקטיקות והתהליכים בפועל. [...] אין זו משימה קלה לגבש אמנות דינמיות, אך זו משימה שחובה עלינו להידרש אליה בשנים הבאות.

(Varis, Biswas & Tortajada, 2008, עמ' XI).

נושא המים מוצג לפעמים בתקשורת כסוגיה המרכזית המונעת הסכם בין ישראל והרשות הפלסטינית, אולם שאלות הגבולות, הפליטים, עתידה של ירושלים וההתנחלויות מצויות במחלוקת רבה יותר, הן עבור מנהלי המשא ומתן והן בשדה המחקר. חוקרים הראו כיצד, פעם אחר פעם, מדינות השוכנות לצד מקווי מים משותפים לא נלחמות עליהם אלא משתפות פעולה בניהולם (Wolf, 1998; Gleick, 2000). ישראל וירדן מהוות דוגמה חיה לכך, כפי שניתן לראות בנספח מס" 2 להסכם השלום שנחתם בין שתי המדינות בשנת 1994.

יחד עם זאת, היעדרן של מלחמות מים אין פירושו כי מים מתוקים הם נטולי קונפליקט. לדוגמה, תכנון עירוני המתיר סלילת ופריסת משטחים קשים על פסגות ההרים יכול להוות הפרעה של ממש להתחדשות המעיינות בעמק סמוך. ערים הנזקקות למים לשימוש ביתי עלולות למצוא עצמן בקונפליקט עם חקלאים הזקוקים למים להשקיה ולגידול בעלי חיים. חקלאים המחליטים לדפן את תעלות ההשקיה שלהם בבטון עלולים למנוע חלחול מים אל האקוויפר, ובכך לפגוע בזרימת המים בבארות בכפר סמוך. בורות שופכין ביתיים או חומרי הדברה שפוזרו בשדות תבואה עלולים לחדור אל האקוויפר ולפגוע באיכות המים. באופן אישי או באופן קולקטיבי, צריכת מים מוגזמת עלולה למנוע ממערכות אקולוגיות לספק את מלוא טווח השירותים – טיהור וסילוק חומרים מזהמים, צמחייה ומניעת הצפות. אלה הם סכסוכי המים האמיתיים המתרחשים מדי יום ביומו בכל רחבי העולם. סכסוכים אלה דורשים פתרונות אך לעיתים הם מושתקים בתוך השיח הלאומי, המציג את המים כחלק מהעושר הלאומי. אין ספק כי כך המצב במקרה של הישראלים והפלסטינים, הנוטים להעלות את הקונפליקט על מים לדרגת סוגיית ביטחון לאומי.

הסוגיה המרכזית בנוגע למים חוצי גבולות איננה החשש ממלחמות בינלאומיות. הסוגיה המרכזית כיום ולמעשה מאז ומעולם, היא הצורך לוודא כי משאבי המים המשותפים ינוהלו בדרכים יעילות, שוויוניות ומקיימות (efficient, equitable, sustainable). על מנת לממש את היעדים הללו יש לדאוג כי באזור זה, כבכל אזור אחר בעולם, ניהול המים ייתפס פחות כסוגיה טכנית ויותר כסוגיה פוליטית (Feitelson, 2003; Blomquist & Ingram, 2003; Molle, 2009).

הפקת המים ואספקתם, בהתבסס על הייעוץ של גוף–סמך בשם משרד היועצים המדעיים, המורכב מצוות שמונה על ידי שתי הממשלות.

במקרים בהם הוועדה הבי–לאטראלית אינה מקבלת החלטה של היועצים המדעיים, או אם קבוצה או קהילה כלשהי תתנגד להצעה, העניין יעבור לטיפולה של המועצה לגישור בנושאי מים. גוף זה יסתמך על ייעוץ של גוף–סמך נוסף, הועדה לנושאי מים מקומיים שהינו בעל סמכויות ייעוץ, ובמקרה הצורך גם סמכויות ייצוג של ארגונים מקומיים. לרשות המועצה לגישור בנושאי מים עומד מגוון רחב של כלים להובלת תהליכי גישור ופתרון סכסוכים, ובכלל זה עריכת מפגשים ציבוריים וחקירות מדעיות. בסופו של דבר, המדד להצלחת התהליך לא יהיה מספר הסכסוכים שנפתרו בהצלחה על ידי מועצת הגישור, אלא במספר הסכסוכים אשר נפתרו בהצלחה בתהליך טבעי של משאים ומתנים שכלל לא הגיע להליך גישור רשמי.

המטרות העיקריות של קיימות ושוויוניות המגולמות בתהליך ניהול המים המוצע כאן קשורות, ראשית, לצורך בשמירה על ההון הכלכלי כך שניהול המים יהיה יעיל מבחינה כלכלית, ושנית, לצורך בשימור ההון החברתי והמוסדי של שני הצדדים המעורבים, כך שניתן יהיה ליישם בפועל כל פתרון של סוגיות הקשורות למים המשותפים משני צידי הגבול. למרות שהמודל המוצע מתייחס באופן ספציפי למים המשותפים לישראלים ולפלסטינים, המטרות, העקרונות והמבנה הארגוני מתאימים לכל מקום בעולם שבו מים חוצי–גבולות מהווים גורם מחלוקת בין שני עמים או יותר. התהליך, לפיכך, נוגע יותר לתחום מדעי החברה ופתרון סכסוכים, מאשר לתחום מדעי הטבע וההידרולוגיה –– אם כי אין ספק שדיסציפלינות אלה מספקות את ההקשר שבתוכו פועלים המוסדות השונים.

דוח זה מתייחס בסיכומו לצעדים הבאים שיש לנקוט על מנת לקדם את ההצעה של ידכ"א בטווח הקצר ובטווח הארוך. ישראל טוענת כי יצרה את חוק המים הלאומי המודרני הראשון, עם אימוץ חוק המים ב–1959. ההצעה העולה מדוח זה היא כי הישראלים והפלסטינים ייצרו את הסכם המים הבי–לאטרלי המודרני הראשון, שאותו ניתן יהיה להטמיע גם בהסכם הקבע בין מדינת ישראל לבין המדינה הפלסטינית העתידית.

תקציר מנהלים

הסכמי מים חוצי-גבולות נתפסים על פי רוב כהסכמי הקצאה, קרי, ההתייחסות למשאבי המים היא כאל "עוגה" שאת פרוסותיה יש לחלק בין המדינות השוכנות לצד מקווי ומאגרי המים (riparian states). גישה זו מתאימה לקרקע, שהינה משאב קבוע ויציב, אך אינה מתאימה למים. לא זו בלבד שהמים נעים וזורמים מעל ומתחת לגבולות המדיניים, אלא שבמים ניתן לעשות שימושים חוזרים, שוב ושוב, מרגע הופעתם כמשקעים ועד אשר הם מגיעים אל הים, מתאדים או מחלחלים אל שכבת האקוויפר. הסכמי מים על בסיס הקצאות קבועות יעילות לעתים למניעת קונפליקט ולפתרון בעיות בוערות לטווח הקצר, אך אינם מתאימים להבטחת ניהול יעיל, שוויוני וב-קיימא של מים משותפים לטווח הארוך. משטרים משפטיים שונים להקצאת מים, כדוגמת המשטר המעניק את הזכויות על המים לראשונים שזיהו וניצלו אותם (First-in-Time/First-in-Right), מוחלפים בהדרגה בכל רחבי העולם. כך או כך, למשטרים כאלה אין הצדקה באזור ישראל/פלסטין, לאחר יותר מ-40 שנות שליטה צבאית של שטחים. גישות חדשות יותר מדגישות את החובה להשתמש במים משותפים בדרכים שהן הגיוניות, שוויוניות, ומונעות גרימת נזק למדינות השכנות. האתגר, כמובן, טמון בהגדרת המושגים הללו בדרכים שתהיינה מקובלות וישימות בתנאים הייחודיים של האזור, וזהן אומנם הדגש של דוח זה מטעם ידידי כדור הארץ-המזרח התיכון (ידכ"א).

ההצעה של ידידי כדור הארץ-המזרח התיכון מאמצת מבנה של ניהול משותף, בהשתתפות הממשל בישראל, והממשל הנוכחי (או כל ממשל עתידי) בשטחים הפלסטינים. המבנה המוצע מאפשר פתרון עימותים וסכסוכים מתמשכים בכל הנוגע לשימוש במים - ועושה זאת בדרך המנתקת, בפועל, בין השימוש במים לבין שאלות לאומיות ובטחוניות. רוצה לומר, השיתוף במים נשען על כללים שנוסחו ועוצבו במטרה להגן על המערכת האקולוגית לטובת הכלל, ולספק מים לצדדים השונים בדרכים אשר עונות על צורכיהם ואשר מאפשרות את התפתחותם ללא פנייה לטיעונים של ביטחון לאומי או של פיתוח צד אחד על חשבון הצד השני.

ניהול משותף של מים אינו עניין פשוט באף אזור בעולם. אין ספק שהוא מורכב במיוחד עבור ישראלים ופלסטינים, וזאת בשל הסכסוך ארוך השנים בין שני העמים, בשל ההבדלים הכלכליים ודפוסי הפיתוח השונים שהתפתחו לאורך השנים ובשל הגישות השונות - וכמעט מנוגדות - לניהול מים שכל עם אימץ - בישראל גישה ריכוזית Top-Down ובקרב הפלסטינים גישה מבוזרת Bottom-Up.

לב-ליבה של הגישה החדשה למים משותפים לשני עמים ריבוניים מבוססת על תהליך מתמשך של גישור ופתרון סכסוכים, כשטענות היסוד הקובעות בתהליך זה הן שני צרכים מקבילים: שוויוניות (equity) וקיימות (sustainability).

הצעה זו משרטטת מבנה ארגוני ובו ארבעה גופים חיוניים למימוש העקרונות הנ"ל. שני גופים מרכזיים מובילים את התהליך: "וועדה בי-לאטרלית לנושאי מים" ו"מועצה לגישור בנושאי מים". כל גוף מורכב ממספר שווה של נציגים ישראלים ופלסטיניים, וכן מנציג נוסף שאינו מן האזור. מבנה זה נועד למנוע מצב שבו לאחד הצדדים תהיה עדיפות, למשל בעת עריכת הצבעות. הוועדה הבי-לאטרלית לנושאי מים נועדה להחליף את ועדת המים המשותפת הפועלת כיום, אולם בשונה ממנה, היא תהיה אחראית לכל המים המשותפים, ולא רק למים בצד הפלסטיני. וועדה זו תקבל החלטות עקרוניות לגבי שיעורי

EcoPeace / Friends of the Earth Middle East
ايكوبيس / جمعية أصدقاء الأرض الشرق الأوسط
אקופיס / ידידי כדור הארץ המזרח התיכון

EcoPeace

הסכם מים ישראלי – פלסטיני:

הצעת ידידי כדור הארץ – המזרח התיכון

מאת

דיויד ב. ברוקס וג'ולי טרוטייר

עם

גדעון ברומברג, נאדר אל חתיב ומונקת' מחיאר

הערות וביקורת מאת הלל שובל ונדב שלף

נובמבר 2010

בתמיכת האיחוד האירופי

תוכן עניינים

תקציר מנהלים (עברית)..... 77

פרק 4: הצעת ידכ"א - מזה"ת להסכם ישראלי-פלסטיני בנושא מים מתוקים (עברית)..... 75

ההצעה המלאה (אנגלית) 4

صفحة المحتويات

ملخص تنفيذي 65

مقترح شبكة اصدقاء الأرض الشرق الأوسط لاتفاقية مياه فلسطينية - اسرائيلية حول المياه العذبة .. 63

ألنسخة كاملة بالانجليزية 4

EcoPeace / Friends of the Earth Middle East
ايكوبيس / جمعية أصدقاء الأرض الشرق الأوسط
אקופיס / ידידי כדור הארץ המזרח התיכון

EcoPeace

הסכם מים ישראלי – פלסטיני:

הצעת ידידי כדור הארץ – המזרח התיכון

نهج إتفاقية حديثة لتقاسم مصادر المياه المشتركة بين الاسرائيليين و الفلسطينيين:

إقتراح مقدم من شبكة أصدقاء الأرض - الشرق الأوسط

מאת דיויד ב. ברוקס וג'ולי טרוטייר

أعده ديفيد ب. بروكس وجولي تروتيير

עם גדעון ברומברג, נאדר אל חתיב ומונקת' מחיאר
הערות וביקורת מאת הלל שובל ונדב שלף

بمشاركة نادر الخطيب, جدعون برومبرج، ومنقذ مهيار
كتب الملاحظات والنقد هيلل شوفال ونداف شيليف

נובמבר 2010

בתמיכת האיחוד האירופי

بدعم من الاتحاد الأوروبي

Figure 1: **Illustrative Map of Water Sources**

EcoPeace / Friends of the Earth Middle East
ايكوبيس / جمعية أصدقاء الأرض الشرق الأوسط
אקופיס / ידידי כדור הארץ המזרח התיכון
EcoPeace

הסכם מים ישראלי – פלסטיני:
הצעת ידידי כדור הארץ – המזרח התיכון

نهج إتفاقية حديثة لتقاسم مصادر المياه المشتركة بين الاسرائيليين و الفلسطينيين:
إقتراح مقدم من شبكة أصدقاء الأرض - الشرق الأوسط

מאת דיויד ב. ברוקס וג'ולי טרוטייר
أعده ديفيد ب. بروكس وجولي تروتيير

עם גדעון ברומברג, נאדר אל חתיב ומונקת' מחיאר
הערות וביקורת מאת הלל שובל ונדב שלף

بمشاركة نادر الخطيب, جدعون برومبرج، ومنقذ مهيار
كتب الملاحظات والنقد هيلل شوفال ونداف شيليف

נובמבר 2010

בתמיכת האיחוד האירופי
بدعم من الاتحاد الأوروبي