

Israel and water in the framework of the Arab-Israeli conflict

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Occasional paper 15 SOAS Water Issues Group

[Paper given at the Conference on *Water and the Arab-Israeli conflict* at the Center of Law at Bir Zeit University – 29 April – 1 May 1999]

‘The current peace process offers a historic opportunity for all nations in the Middle East to abandon the states of belligerency, confrontation, non-cooperation and polarization.. Water is a major issue that can be a catalyst in the peace process or can inhibit it.’ (Isaac and Sabbah 1997 p iii)

‘War over water seems neither strategically rational, hydrographically effective, nor economically viable. Shared interests along a waterway seem to consistently outweigh water's conflict-inducing characteristics. Furthermore, once cooperative water regimes are established through treaty, they turn out to be impressively resilient over time, even between otherwise hostile riparians, and even as conflict is waged over other issues. These patterns suggest that the more valuable lesson of international water is as a resource whose characteristics tend to induce cooperation, and incite violence only in the exception.’ (Wolf 1998 p 251)

Summary

Water is generally perceived as one of five high priority issues in the Arab-Israeli conflict. The five issues are Jerusalem, borders and the closely related issue of settlements, refugees and shared water resources. All these contentious issues are replete with disputed data, disputed history and disputed allocation and management options. They are also all linked in a constantly changing and often unstable web woven by actors with emotionally driven priorities. These complex circumstances make a balanced analysis of the water issue impossible to develop and impossible to convey to its stakeholders. The study will raise a number of arguments concerning water in general and in the Arab-Israeli dispute in particular. First, there is substantial evidence that while water is a fundamental resource in any political economy it does not determine socio-economic outcomes for severely water stressed political economies. Secondly, partly because of the ‘economic’ substitutability of water – virtual water and desalination - and partly because of the role played by socio-economic development in ameliorating the saliency of water shortages, water will be subordinated to other priorities in any final negotiations between the two parties. Thirdly, water will be the least difficult to settle of the five contentious issues in the Arab-Israeli dispute. Fourthly, the linkage between the issues in dispute is likely to bring about an

outcome which does not satisfy those advocating a highly principled argument based on the idea of international water rights. Fifthly it will be suggested that other underlying factors – albeit very seriously disputed factors – will enable adjustments to be made which enable compromises that will bring about agreement. A range of economic, social and political theory will be used to elaborate the arguments.

Key words: water and conflict, water and cooperation, socio-economic development, substitutability, virtual water, desalination, refreshed water, water use efficiency, value of water, Arab-Israel dispute.

Introduction

Five major issues divide Palestinians and Israelis. These are Jerusalem, borders and the closely related issue of settlements, refugees and shared water resources. All the contentious issues are replete with disputed data, disputed history and disputed allocation and management options. They are also all linked in a constantly changing and often unstable web woven by actors with emotionally driven priorities. These complex circumstances make a balanced analysis of the water issue impossible to develop and impossible to convey to its stakeholders.

The study will draw attention to a number of arguments which are not welcome to those central to negotiating over water. They will be especially strongly contended by those who have a professional stake in the science and management of water in both Arab and Israeli institutions. Five main points will be made.

First, there is substantial evidence that while water is a fundamental resource in any political economy it does not determine socio-economic outcomes for severely water stressed political economies.

Secondly, partly because of the ‘economic’ substitutability of water – by ‘virtual water’ and desalination - and partly because of the role played by socio-economic development in ameliorating the saliency of water shortages, water will be subordinated to other priorities in any final negotiations between the two parties.

Thirdly, water will be the least difficult to settle of the five contentious issues in the Arab-Israeli dispute. The intuitive claims to water of the disadvantaged party in terms of a conceptualised water right will not be met in every respect, but the volumes of water per Palestinian will increase over the coming decade following a peace accord.

Fourthly, the linkage between the issues in dispute is likely to bring about an outcome which does not satisfy those advocating a highly principled argument based on the idea of international water rights. This post negotiation outcome is normal in that those inspiring the claims of both contending parties are ideal rather than politically feasible, especially in complex, issue linked, circumstances.

Fifthly it will be suggested that other underlying factors – albeit very seriously disputed factors – will enable adjustments to be made which enable compromises that will bring about agreement. These underlying factors are at best invisible or otherwise unwelcome to most of actors and parties concerned and cannot play an explicit role in the contention over water. They are nevertheless crucial in the development of future relations within and between Palestine and Israel.

A range of economic, social and political theory will be used to elaborate the arguments. Reference will be made to economic theory on the value of water and on the ways in which

both Palestinians and Israelis have achieved economy strengthening improvements in the *economic returns to water*. The theory of *factor equalisation* will explain why Palestine and Israel, as well as the Middle East and North African region as a whole, has been able to address successfully the apparently impossible challenge of balancing water budgets by importing 'virtual water'. 'Virtual water' is the water embedded in water intensive commodities such as cereals which happily can be readily traded.

Water determinism is no more determining than other environmental factors: it does not determine

Water availability does not determine economic outcomes. Communities, and especially national communities, have the potential to combine extremely scarce water and other factors of production in ways that generate sustainable livelihoods. When it becomes impossible to mobilise new water to sustain livelihoods in activities that are very demanding such as agriculture new approaches requiring the use of water in activities that use little water to produce high value goods and services prove to be economically sustainable. The economies of both Palestine and Israel demonstrate the capacity of resource scarce economies to generate livelihoods beyond those in traditional rural circumstances.

Water shortages do not bring about armed conflict. Wolf (1995, 1997, 1998), on the basis of substantial archival study (United Nations FAO 1978 and 1984) has demonstrated the absence of armed conflict and the existence of hundreds of international water treaties which have endured the vagaries of real world hydropolitics. Water scarcity has been shown to be the stimulus for much anxiety, little armed conflict and many cooperative arrangements. The arguments of Homer-Dixon (1994) concerning resource capture and of Falkenmark (1996) on the strategic significance of water resources have not yet provided models which explain hydropolitics.

Water in developing economies: transforming use and accessing unconventional waters

'The economic value of the 'virtual water' embedded in wheat though technically incalculable is nevertheless of inestimable economic value to the MENA economies.'

'More water 'flows' into the Middle East each year as 'virtual water' than flows down the Nile into Egypt for agriculture' (Both quotations from Tony Allan 1997)

As an economy develops the proportional role of individual resource inputs changes. Agricultural economies are very demanding of water resources. In arid and semi-arid countries with rising populations the option of remaining dependent on a self-sufficient agricultural economy ceases once the availability of water falls below about 1000 cubic metres per head. A self-sufficient agricultural economy is possible if emphasis is shifted from low value to high value crops as lower levels of water availability are encountered. In practice it is not in agriculture that the essential economic remedies are found. The main improvements in livelihood generation are achieved outside the agricultural sector in industry and services.

Public awareness of the significance economic transformations of this sort is difficult to achieve; public acceptance usually impossible. Such economic transformations undermine

traditional approaches and conventional beliefs about secure livelihoods. These beliefs have been embedded in society for millennia.

In practice the deeply held beliefs are more important to some parts of a society; often respected 'senior' elements of a society. A simultaneous process of gradual transformation of a ever larger part of society is in practice everywhere taking place in the MENA region. The point at which the new economic interests of the majority can impact the psyche of a community is impossible to predict. Both the old beliefs about the fundamental importance of the old securities can be held at the same time as an economy's sustainability and its livelihoods are dependent on new ways of combining water, labour and investment. Politicians are aware of the social and political power of the deeply held beliefs which they know can be articulated with universal appeal. They can be made politically prominent at will without contradicting the reality of the transformed economy. Conducting negotiations over highly contended water such as the imminent complex water negotiations between Palestine and Israel is extremely difficult. They are conducted in circumstances where widely supported entitlements to traditional livelihoods are asserted by both parties. The position is seriously exacerbated by flagrant prodigal use of water by Israeli settlers on the West Bank in the midst of water scarcity faced by Palestinians in neighbouring communities.

Doing more with less by both improving the productive [or technical] efficiency of water use and the allocative [or economic use] of water are the major, if generally unheralded, measures which enable economies to survive worsening water resources deficits in the MENA region. (Allan 1996 and 1999, Lonergan and Brooks 1993 and 1994, Libiszewski 1995, Serageldin 1995) Israel has achieved a position where 97 per cent of its GDP is generated from activities which only use five per cent of its water. The figures appear to be remarkable but in Jordan, an economy generating a much lower level of GDP per head, has a similar profile of sectoral use of water. 93 per cent of its GDP is generated from activities which only use five per cent of its water. These economic realities are not of any political significance. The assumption which drives the public discourse are that agriculture remains the foundation of the national economy and politicians are trapped in this 'sanctioned discourse' and have to reinforce it. (Tripp 1996)

Mobilising new water is always an expensive option when existing sources have been fully utilised. For economies with high levels of economic and social adaptive capacity (Ohlsson 1998 and Turton 1999) it is possible to contemplate water re-use and the desalination of brackish and of sea water. Israel is in the position to adopt both of these approaches. Approximately 20 per cent of Israeli irrigation water is derived from the treatment of municipal water. Israeli officials and scientists have also placed themselves in a position where the desalination option can be taken up whenever the time seems economically, politically and strategically appropriate. The events of the February-April 1999 period indicate that a consensus may be emerging in Israel that the time is near.

'Infrastructure Minister Ariel Sharon on Wednesday [3 Feb 99] urged European Union ambassadors to support a major two-phase desalination project, which he says will protect Israelis, Palestinians and Jordanians from water shortages in the future.'
(Ha'aretz 3 Feb 99)

The initial phase of his proposal calls for a 50-million-cubic-meter desalination plant in Gaza for drinking water and domestic consumption; desalination of 50 million cubic meters of brackish water to supply Jordan in the Jordan Rift Valley; and desalination of 50-100 million cubic meters along the Mediterranean for use by Israel. In a second phase,

a large-scale desalination plant with a capacity of 800 million cubic meters of water would be constructed for use by all three partners.’ (Report on meeting of Minister Ariel Sharon with European Ambassadors on 3 February 1999)

The announcements of Israeli prioritisation of the desalination option in early February coincided with their recognition that the 1998-99 drought was very severe. There had been much attention in the Jordanian media throughout the normally rainy months of October to February 1998-99:

‘A severe water shortage is expected to hit several sectors during the coming summer season, the government has announced earlier this week a rationing program to tackle the water crisis.’ (Joha 1999)

‘The government on Friday said the Yarmouk River has reached its lowest level in recent history, a development that may worsen the state of drought in Jordan this summer.’ (Khatib 1999)

‘Jordan and Israel have reached a breakthrough in a water dispute which erupted last month when Israel proposed cutting water supplies to the Kingdom, officials said on Tuesday.’ (Khatib 1999)

The flurry of government announcements and media reporting in Israel in the second half of April is best explained by the proximity of the up-coming Israeli elections in May. A tough line on the Jordan-Israel water arrangements fitted well with a wish on the part of the Israeli party in power to appeal to its hawkish supporters. The timing of the announcement that desalination would be an appropriate next step for all the parties central to the Peace Process, was a considered move to gain the attention of potential international sponsors for the desalination project, when there was a palpable water emergency. It has been shown that such ‘windows of opportunity’ (Kingdon 1984) are essential triggers for shifts in policy which require both political will and the mobilisation of major technical and financial resources.

Desalinated water will be a significant contributor to the solution of Israel’s future water problems and indirectly, will play a role in the water balance of the interdependent neighbouring polities. At present only Israeli users can pay the costs of desalinated water. Although the costs are falling and in the low cost global energy regime of the end of the millennium the costs of one US dollar per cubic metre have been quoted and even lower costs, below 50 US cents have recently been cited. (World Water Council meeting in Cairo, April 1999) For the economies of Gaza and the West Bank the desalination option is not feasible. But desalination will play a very important role in the region over the coming decades.

The re-use of water is another expensive technique for providing new water. In the terrain and geological circumstances of Palestine and Israel the re-use of water first used in agriculture can never be a significant source of new water. Partly because the volumes of first use in agriculture water are declining and partly because of the groundwater circumstances of the region. The re-use of municipal water has, however, already been shown to be an appropriate supplement to those irrigating in the southern regions of Israel. The volumes of first use water in municipal uses is increasing and it has been suggested that almost all first

use water will be in municipal uses in the medium term throughout the region – Palestine-Israel-Jordan. The preceding discussion excludes soil water deriving directly from rainfall.

Water: the least contentious of the big five issues

It is not the task of this study to rank the five issues over which Palestine and Israel contend in terms of difficulty. However, it is relevant to make a comment about the extent to which the apparent severity of the water issue can be ameliorated.

The water issue generates as much apparent contention as the other four issues. However, it is the one issue which has been shown to be technically and economically addressable. Water shortages have not impeded the economic development of Israel. Israel has emerged from a period of water stress with the capacity to expand its economy and operate effectively as a provider of goods and services internationally. The emulation of this experience by its neighbours, preferably with Israel's active participation, has the potential to ameliorate the impact of the water shortages of Jordan and Palestine. Only a combined effort of the international community and Israel together will significantly accelerate the socio-economic process. It was partly for this reason that Ariel Sharon raised the profile of the desalination project in mid- April 1999. (Ha'aretz 1999)

The other issues in dispute, Jerusalem, borders, settlements and refugees are not so susceptible to the same effective and often usefully politically silent solutions provided by socio-economic development.

Another reason why Israel need not be demanding in its negotiations over water is that it has shown since 1986 that it could cut allocations of water to agriculture. Between 1986 when there was a severe drought and 1991/92 when there was another Israel cut its water allocated to agriculture so that the level of total water use fell from two billion cubic meters per year to about 1.6 billion. The Israeli Water Commissioner announced another cut in 1999 of 25 per cent.. The same official argued soon after his term as Water Commissioner in 1992 that Israel would have to cut water allocations of first use water by 60 per cent over the coming years.

‘Water Commissioner Meir Ben Meir yesterday told his Jordanian counterpart that the regional drought will force Israel to cut the amount of water Israel sends to Jordan from Lake Kinneret and the Yarmukh and Jordan rivers by 60 percent.

‘The Jordanian commissioner, Dureid Muhsana, rejected the requested cutbacks.

‘Ben Meir said yesterday that water reserves had dropped to their lowest since 1980; he said that if the drought continues, with Israel getting only 40 percent of its average annual rainfall by winter's end, Lake Kinneret will shrink from 400 million cubic meters to 160 million.

‘As things now stand, Ben Meir said, he has already cut 25 percent of the water supply to farmers, and he plans further cuts as the drought continues.’ (Cohen 15 March 1999)

In practice Israel had, since 1992, allowed its water use to rise back to the two billion cubic metres per year level of the mid-1980s. This reversal of the pre-1992 position is explained by the arrival of the Peace Process in late 1992. Since then Israel has had the incentive to increase its total water use so that it can appear to be using a large volume of

prior use water out of which it has to be negotiated. In practice Israel has demonstrated that its economy can run effectively on a level of water use 400 million cubic metres per year less than the two billion per year level.

During the second year of the 1998-99 to 1999-2000 drought Israel gave very little attention to the groundwater issue. It was the desalination solution that received the major attention. The contrast with the 1986 and the 1991-1992 situations is significant when Israeli environmental activists persuaded the Israeli Government to take a much more precautionary approach. Two factors had an influence. First, the Peace Talk factor since 1992. Secondly, the economies of the Jordan River basin had a powerful environmental experience in December 1992. The exceptional rains of December 1992 restored all the groundwater storage in the West Bank and other regional aquifers. Those managing the West Bank aquifers since 1992 have been predictably affected by the unprecedented groundwater recharge of the rainy weeks of December 1992. Israel has chosen to take the levels of groundwater down assuming that there needs to be space for the recharge of other exceptional years.

Meanwhile the perception of agricultural water use has shifted in Israel. Water used in the agricultural sector is an alternative reserve to groundwater storage in the West Bank. If West Bank groundwater storage begins to approach a dangerously low level then the water use in the agricultural sector can be reduced. Israel has increased its water use in agriculture by 400 million cubic metres of water per year since 1992. Such a volume is more than that normally pumped each year from the Jordan Valley from Lake. It is as much as Israel draws from the western aquifer of the West Bank on average each year. 400 million cubic metres of water per year is a very big number for Jordan River riparians. It is a much larger number than Israel will wish to be in contention when water talks start in earnest during 2000. Whether 400 million cubic metres per year or an even larger number is negotiated depends on whether the environmental as well as the economic value of water are central to Palestinian arguments rather than water rights. The outcome of the Syria-Israel negotiations over Golan will also have an influence. But the Golan water should not be over-estimated. Israel could feasibly lose the waters of the Baniyas tributary, but this expensive water is only 25 per cent of the upper Jordan flow. And only 15 per cent of the annual 800 million cubic meters of desalinated water being envisaged as available during the coming two decades.

Linkage: an unavoidable factor vis-à-vis water in the Peace Process

‘Ignoring the needs of growing numbers of neighbours provides Israel with other security risks. A thirsty neighbour is a not a good neighbour.’ (Ekstein 1999)

That there are five major issues in dispute will make the Peace Process complicated. For those Palestinians whose prime concern is water the case for basing the argument on principled notions of equity in the sense of equal shares and the consideration of basic needs there are many sources to which reference can be made. (Khassawneh 1995, Middle East Water Commission 1995, McCaffrey 1995 and 1998) Israeli’s interested in the issue of a fair approach to water sharing have also contributed to the debate. (Shuval 1994, 1995) Unfortunately principled agreements over water are the exception.

The first reason is that there are no long established principles which cope with the very diverse circumstances encountered in different river basins. Each basin is unique in its environmental endowment – geology, terrain, climate, direction of flow and volume of water.

Each basin is unique in the combination of these endowments with the particular political segmentation of the basin. Add to this the asymmetry in the economic and the military power of the riparians and the application of water sharing principles in a mutually acceptable way is impossible. The recent 1997 International Law Commission Convention (McCaffrey 1998) will take decades to become an established reference for riparians in dispute. Meanwhile the international community in general does not want international water law.

The second reason that principles focusing on water will not hold is that water has always been linked with other issues in dispute. Where relations are tense and verging on armed hostility, or where one party has a great need for one major achievement, then the tendency is for those making the final deal to compromise the water claims in order to achieve the main prize. In the case of Jordan it was the prize of peace.

The linkages are very flexible and constantly changing. The absence of satisfaction that always attends the reaching of an agreement in a multi-issue conflict is that the professionals advising both sides in the dispute pitch their bids and their expectations so that any compromise is bound to disappoint both sides.

No need to reconcile perceptions on the value of water in the short term

Mercifully the solution of 'virtual water' operates just as effectively de-emphasised and silent as it would if it were to be publicly and loudly acknowledged. *The author 1997*

Israeli economists and engineers have contributed to the prominent debate on the value of water. (Ben-Shahr et al 1989, Zeitouni et al 1994, Arlosoroff 1996) Fishelson (1994) was amongst the first to point out that water was too valuable to export in Israeli agricultural commodities. The unpublished Harvard Project has taken the argument further and argued that the hundreds of millions of cubic metres of water in dispute each year are not in economic terms to Israel worth even a trenchant never mind a hostile level of dispute.

The value of water is not regarded as a proper issue for discussion by Palestinians. They want their entitlement to the hundreds of millions of water per year which they regard as their due and are unmoved by economists contending that water values are central to the dispute. (Zarour and Isaac 1993 and 1994)

A subtlety in the matter is that both sides do not need to be equally persuaded of the usefulness of the valuing of water nor of any particular value which should be attributed for their to be a solution. All that matters is that one side perceives the sums needed to make a financial substitution for such water to be a price worth paying for the achievement of higher goals such as the stability of the region and the achievement of security. Here a linkage can be advantageous in accelerating progress towards peace even if the two sides have very different views on principle. In this case the principle of the value of water.

Conclusion

Water is one of the important issues in the Peace Process. Settlement of Palestinian-Israeli water shares in a manner which appears to be publicly equitable is a necessary pre-condition of Palestine signing up to any treaty. The purpose of this paper has been to show that the asymmetries that exist between the two parties make the contention complex. One side may demand something for reasons of remedying the injustices suffered during recent history and may gain the prize. The reason the prize could be conceded is because one economy is

substantially stronger than the other. Socio-economic development is the means by which the water problems of the region to the west of the Jordan will be ameliorated. Gaining the social adaptive capacity plus capital to enable scarce water to be part of the process to develop sound livelihoods in Palestine should be the most important goal. Both sides can contribute to that end. Palestine should in the negotiations seek the material and institutional resources to transform its economy on the basis of scarce water. These are essential and linked issues that should have a high place on the agendas of the negotiators on both sides.

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