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Source: *The Geographical Journal*, Vol. 168, No. 4, Water Wars? Geographical Perspectives (Dec., 2002), pp. 313-323

Published by: [Blackwell Publishing](#) on behalf of [The Royal Geographical Society \(with the Institute of British Geographers\)](#)

Stable URL: <http://www.jstor.org/stable/3451474>

Accessed: 17/08/2011 16:44

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# Water wars in the Middle East: a looming threat

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*This paper was accepted for publication in August 2002*

This paper explains how hydro-political dynamics and spatial variables almost triggered a water war between Israel and Lebanon because the latter was building a pump on the Wazzani Spring, a tributary of the Jordan River. The convergence of a regional drought, history of violent confrontations between the two riparians, distrust, varying development needs and territorial disputes almost culminated in a war between these east Mediterranean neighbours. While most international water disputes in the Middle East will be resolved peacefully, some are likely to trigger violent confrontations threatening political stability in the Middle East in the next few decades.

KEY WORDS: Jordan River, Hasbani River, Wazzani Spring, Water War, water scarcity, drought, history, territorial disputes, Middle East

## Introduction

There is a growing discussion over the geo-political consequences of protracted (as opposed to temporary) water 'scarcity', which I refer to as 'stress'. One school of thought argues that resource scarcity triggers technological and diplomatic innovations, not wars (Wolf 2000). Another school of thought argues that scarcity of critical resources such as water or oil would have a drag on the economy, and if the scarcity persists for any length of time in resource-dependent countries, social disruption and war are likely (Ehrlich 1972; Gleick 2000). All major conferences on the global environment such as the 1977 Mar del Plata, Argentina, and the 1992 Dublin conference, and Earth Summit, Rio de Janeiro, have discussed the idea of the basic water requirement (BWR) for humans and the ecosystem. BWR is now widely accepted by international organizations, national and local governments, and by water providers. Lundqvist and Gleick (2000) argue that unless people have access to their basic water needs, in order that they can grow their food and live a healthy and hygienic lifestyle, ecological disruption, population dislocation, 'large-scale human misery and suffering' will be the result. And this, they say, contributes 'to the risk of social and military conflict' (Lundqvist and Gleick 2000).

While most water disputes will have non-violent resolutions, Gleick argues that it is now

widely accepted that resources and environmental factors – particularly those associated with fresh water – play a tangled but definite role in local, regional, and even international disputes

Gleick (2000)

This paper presents empirical evidence for Gleick's claim by explaining the intricate hydro-political dynamics that came close to triggering a water war between Israel and Lebanon because the latter was building a pump on the Wazzani spring, a tributary of the Jordan River. The author argues that when countries reach the brink of war, a multitude of factors usually converge. In this case study, a volatile coalescence of drought, decades of dueling, distrust, development needs and territorial disputes almost culminated in an international war over a water diversion from an international watercourse. The emotionalism with which water is viewed aggravates already volatile situations.

In an address given by the United Nations, Secretary-General to the Association of American Geographers, Kofi Annan, said that environmentally

Unsustainable practices are woven deeply into the fabric of modern life. Land degradation threatens food security. Forest destruction threatens biodiversity. Water pollution threatens public health, and fierce competition for fresh water may well become a source of conflict and wars in the future. Environmental concerns are the national security issues of the future.

Annan (2001)

A Johns Hopkins University study reported that '... there is [now] a growing risk that wars will be fought over access to freshwater supplies' (*Solutions for a water-short world* 1998). This is echoed by the Director-General of the UN Environment Programme, Klaus Toepfer. He said: '... because fresh water is becoming such a valuable commodity, countries are likely to go to war over it' (*Environmental Science & Technology* 1999). Madeleine K. Albright, U.S. Secretary of State during the presidency of Bill Clinton, said that 'Competition for scarce resources ... can still elevate tensions among countries or cause ruinous violence within them' (*Los Angeles Times* 1997). She wrote that 'Unless properly addressed, water scarcity could become a major source of conflict' (Albright 2000).

In the Middle East, a member of the Egyptian Parliament said that his country's 'national security should not only be viewed in military terms, but also in terms of wars over water' (El-Deen 1998). Meir Ben Meir, Israel's Water Commissioner, predicts that protracted water scarcity and thirst would 'doubtless' lead to war (Welsh 2000). Water scarcity in Palestinian villages was 'one of the reasons for the *intifada* in the occupied territories' (Anderson 1991). According to Levy, around 150 Palestinian villages in the West Bank are currently not hooked up to the water system, thus adversely affecting the lives of some 215 000 people 'under Israeli responsibility'. While Israelis use an average of 348 litres of water per person per day (l/p/d), Palestinians in the West Bank and Gaza use 70 l/p/d, well below the daily minimum of 100 l/p/d set by the World Health Organization (Levy 2001). This harsh reality had a tangled contribution to the root causes behind the Al Aqsa Intifada (uprising) of Palestinians under Israeli control. This violent confrontation between Israel and the Palestinians started in the fall of 2000 and had not ended by the summer of 2002.

The role of water stress in violent confrontations between states manifests itself frequently in prolonging positions of belligerency or official 'state of war' between countries as was the case between Israel and Syria during the 1990s. Ephraim Sneh, Israel's Deputy Defense Minister in Ehud Barak's government, said that his country is prepared to make wide-ranging territorial 'compromises' on the Golan Heights and 'All we want (from Syria) in return is security and water' (Landau 2000). The late Prime Minister Yitzhak Rabin indicated to the Americans that he would consider a full withdrawal from the Golan Heights if his security and water demands were met. This is known as the 'Rabin or Israeli Deposit', code-named the 'Pocket file' (Schiff 2000). In earlier peace talks with Syria at Wye

Plantation, Schiff (1996) states that the Israeli Prime Minister Shimon Peres 'has taken an aggressive stance on the water sources in the north, and on their defense'. Peres, who is a co-recipient of a Noble Prize for peace, is considered a dove in Israeli politics. Another analyst argues that

The Golan's fertile farmland, generous water resources, and strategic topography make it difficult, in the minds of many Israelis, to give up this territory.

Zunes (2002)

In conclusion, leaders of global institutions, regional organizations and nation states accept the looming threat of water wars. According to this school of thought, competition over scarce water resources results in a wide spectrum of responses, ranging from peaceful resolution of the conflict, to prolonging the state of belligerency between riparians and outright violent confrontation between them. In short, society sometimes responds with violence if people are denied sufficient access to a vital resource like water.

### National context of hydropolitics

In 1978, the Israeli army invaded southern Lebanon and established the so-called 'security zone' with the expressed goal of preventing guerilla attacks from Lebanon (Figure 1). In the years since 1978, the area of this occupied zone expanded and contracted a few times. It was largest in 1982 (until 1985) when Israel expanded its hold to control 45% of Lebanon's area and smallest, around 9%, in 2000, the year Israel's army quit the area. Before the security zone was occupied by the Israeli army, it had around 300 000 residents. Only about 77 000 people stayed during the decades of guerilla and civil wars. In 2001, one year after the Israeli army abandoned southern Lebanon, about 5000 had decided to return and rebuild their homes and fields that had been abandoned, evacuated or destroyed during the Israeli occupation.

In the first year after the liberation of the south, the central Lebanese government was busy inviting investors from around the world to help in funding the rehabilitation of the southern villages. The Council for Development and Reconstruction (CDR) has been working to implement US\$100 million worth of projects funded by the Arab Fund and Kuwait Fund, of which US\$50 million were earmarked to provide drinking water networks for the Jabal Amel, Bint Jbeil, Marjayoun and Hasbaya areas of south Lebanon. The latter financial assistance also includes preparation for a water treatment plant and for a waste water treatment plant

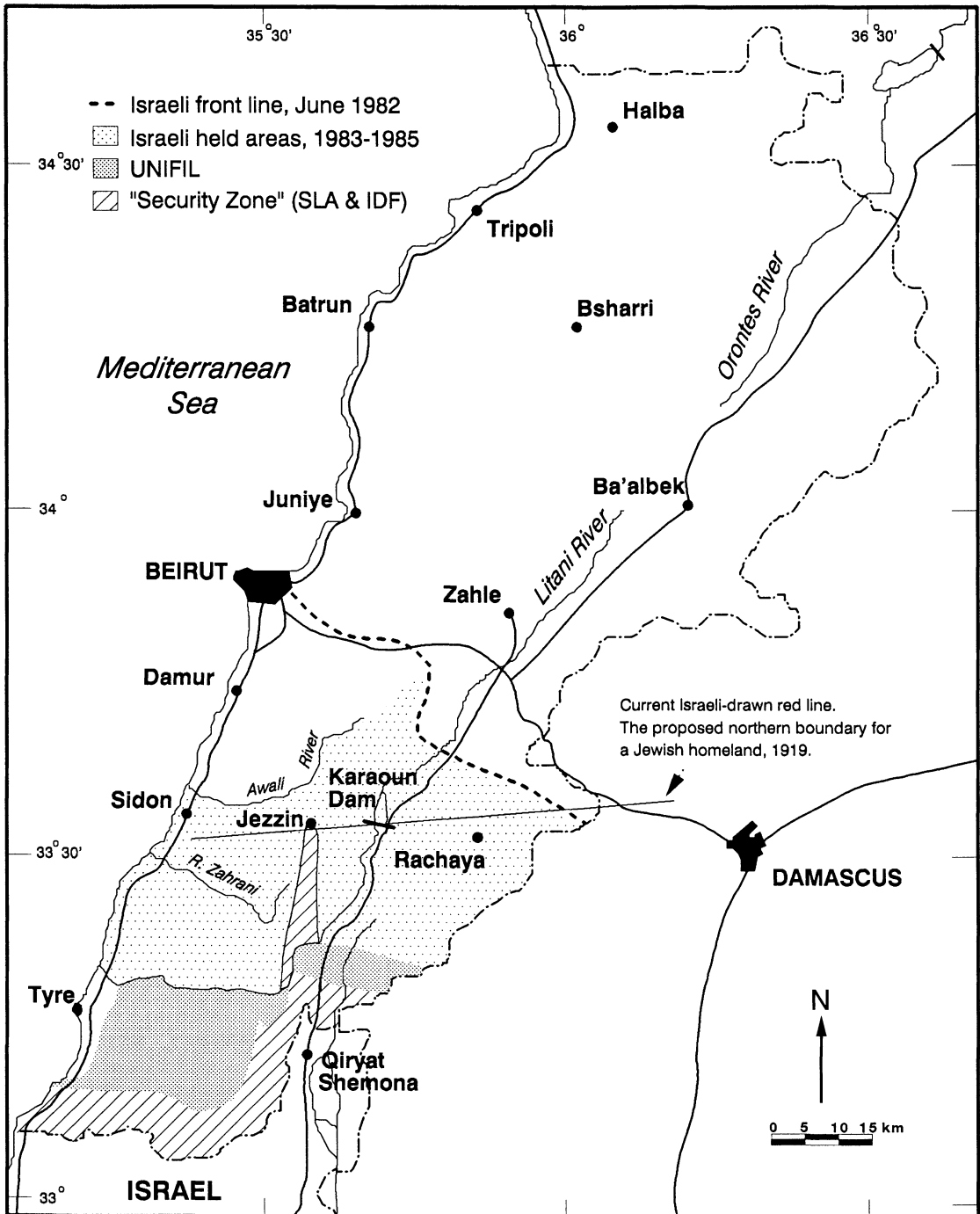


Figure 1 The Security Zone, 1978–2000 was occupied by the Israeli Defense Forces and with the assistance of the South Lebanon Army

where water can be recycled for irrigation purposes. During 2000–2001, the Council of the South invested US\$100 million in the South, mostly to repair damaged homes and compensate families. At the macro level, for example, US\$63 million were spent on infrastructure, building ten schools, a hospital, digging 15 wells and making repairs to the electricity network. An additional US\$6.6 million were spent on social projects. In short, there is an effort to rebuild and upgrade the socio-economic foundation in order for returnees to lead a productive and meaningful existence. At the micro level, the Lebanese government started a programme whereby residents of the South whose homes were destroyed by Israeli forces or in other battles were entitled to receive a reconstruction compensation grant of US\$20 000 for each household. This prompted hundreds of families to return to their native villages, some of which are along the border with Israel. Some of villages, such as Ain Arab, which was destroyed by the Israeli army in 1982 (Bar'el 2001b), have to be completely rebuilt, which makes the return of civilians to them slower than to partially destroyed ones. The village of Wazzani (also known as Arab Louaize), like Ain Arab, had been connected to the water distribution network in 1973 (Faour 1985). When the dispute over the pump erupted in 2001, the Lebanese government was in fact rebuilding the room that had been built in the early 1970s to house the original pump on the Wazzani, and re-paving and widening the long-neglected road leading to it. As early as 1959, according to a study by the late Ibrahim Abd Elal, Lebanon had planned to supply 16 villages in the Marjoun administrative district with water from the springs of the currently contested farms of Shebaa, which came under Israeli occupation in 1967 (Faour 1985). The farms amount to 18 Lebanese-owned agricultural plots that served as smugglers' havens for decades. The abundance of freshwater springs in the Sheba farms is a function of its location at 1250 m above sea level on the western foothills of Mount Hermon. The farms, then, have a clear hydrostrategic value for Lebanon.

The scale and degree of reconstruction and development in villages such as the Wazzani in southern Lebanon are constrained by the destruction of permanent crops such as orchards during the decades of war, the abundance of land mines and limited water resources. Without an adequate infrastructure to provide the original inhabitants with their basic water requirement, they are not likely to return. The agricultural sector, the cornerstone of the economy in the security zone, was crippled by the relative isolation of the area from the rest of the country, excluding farmers from the natural market north of the occupied belt. Israel

protected its farmers by banning imports of south Lebanese produce. The net result was large-scale emigration, and those who remained throughout the turmoil abandoned agriculture and sought farming or factory employment in northern Israel. The relative absence of the central Lebanese government from the scene meant that the infrastructure for farming was neither maintained nor modernized to allow for efficient production in this arid region. Israel and her allies, the South Lebanon Army, 'burned olive groves and other trees to deprive Hezbollah guerrillas of cover, diminishing another local resource' (Schneider 2001). A lethal legacy of the occupation and the protracted guerilla warfare that ensued are the 130 000 land mines which are sown in the region, making farming a deadly activity. Hence, capturing and delivering fresh water are, among other factors, pivotal to the economic re-development of the recently liberated villages and towns of south Lebanon. An accelerated return of residents would intensify local demands for domestic and irrigation water and hence amplify the chances of tension over water with Israel.

Why would former residents return to their wholly or partially destroyed villages which they had long been forced to flee? The villages in question, such as the Wazzani hamlet, unlike ones deeper in the once-occupied zone, remain even after the liberation of the zone an active front line where military operations persist. This seemingly irrational act of returning can in fact be explained by the geographical concept of territoriality and the meaning people attach to space.

O'Tuathail (2000, 140) argues that the idea of a territory is more multi-layered than it appears. We should speak not of territory but of 'culturally contextual and technopolitically contingent territorialities'. Territory, he adds, is related to the

complex of state power, geography and identity. Put somewhat differently, territory is a regime of practices triangulated between institutionalisations of power, materialisations of place and idealisations of "the people".

O'Tuathail (2000)

Over 50 years ago, Bowman (1946, 177) wrote that territory

evokes personal feelings and group sentiments. [Some people] endow the land itself with a mystical quality, hearing revered ancestors, the authors of past grandeurs and the doers of heroic deeds, speak from their graves in its soil.

Bowman (1946)

Those who were forced to leave south Lebanon had different attachment to their native lands than those who chose to emigrate to Beirut or abroad. Some southern Lebanese, who in the 1970s and 1980s emigrated to escape the repression of occupation and the devastation of the civil war, eventually found themselves victims of Africa's civil wars in the late 1990s. Consequently, a large number of emigrants returned before the liberation of south Lebanon, many with a lot of wealth and business contacts around the world. They built lavish villas with exotic gardens, sweeping staircases and Spanish-tile roofs in their home villages – in some cases, a few miles away from the front line of the security zone. Poorer residents, especially those who were explicitly or implicitly evicted from their hometowns, usually went to other Lebanese cities in the north. They developed a sense of 'mission' to return, re-establish their dislocated identity, and to reclaim a perceived past 'grandeur' – simple and symbolic as it may have been. The fact that the land of south Lebanon is widely believed to have been honorably liberated gives it a magnetic appeal to everyone in the country. Furthermore, this land has for decades been a theatre of military operations by and against the Israeli army that had long ruled over this significant portion of Lebanon. The fallen during these grim years are generally seen through a religious lens, and thus are considered 'martyrs' who sacrificed their lives so that others may live with freedom and dignity.

The act of 'returning' has a uniquely Lebanese slant: a sectarian dimension. The Christians of southern Lebanon were the backbone of Israel's day-to-day occupation and battlefield militia, the South Lebanon Army (SLA). Members of this army who did not flee to Israel after the liberation of the South were tried in a court of law and most received light prison sentences. However, the Muslim majority of the South, some of whom were physically tortured by members of the SLA, remain bitter and angry. Consequently, of the few thousand people who returned to the 114 liberated villages, the majority originated from mostly Muslim towns, not Christian ones. Furthermore, the Islamic resistance group, Hizbullah, is widely viewed as having forced Israel out of southern Lebanon. This perception raised the profile and popularity of the group among the majority of Lebanese to the indignation of the Israelis. Relative to Khiam, Bint Jbeil and Mais al-Jabal – all primarily Muslim Shia towns – Marjayoun, Qlaya and Ain Ibl are ghost towns (Sukhtian 2001). Furthermore, many of the returnees are elderly. The mostly Muslim returnees, then, were least trusted by the Israeli authorities,

which partly explains their reaction to the pump on what happens to be an international spring, the Wazzani.

The riparians of the international Jordan River basin are Lebanon, Syria, Israel, Palestine and Jordan. The Hasbani River is one of three tributaries of the Jordan River. The river's largest tributary is the Dan River whose flow varies from 173 to 285 million cubic metres (mcm) per year, averaging 250 mcm. The Hasbani River's flow ranges between 52 and 236 mcm per year, averaging 150 mcm. The Baniyas River's flow ranges between 63 and 190 mcm, averaging 121 mcm. According to the American-mediated Johnston Agreement of 1955, Lebanon is entitled to 35 mcm of water a year from both the Hasbani and Wazzani. This negotiated agreement won the approval of all concerned governments in the Jordan River basin. However, Arab states, including Lebanon, failed to sign it for political reasons. For years, nevertheless, the agreement was informally adhered to by the Jordan riparians. Lebanon had tried to make use of its share of the Hasbani, but was prevented by political instability in the area and by Israeli objections. In 1972, the Lebanese government built a small causeway on the Hasbani River near the town of al-Mari in order to use some of the flow during the dry summer months, but the Israeli army destroyed it (Faour 1985, 185).

Israel's unconditional withdrawal from Lebanon was unilateral and without negotiations, hence the two countries did not sign a peace treaty nor reach an understanding over any environmental or security matters. In fact, since the two countries signed the armistice agreement of 1949, they have not had any directly negotiated or formally agreed any water arrangements. The two countries, then, are not legally bound by any agreement over water allocation and quality. Although these are issues that require bilateral resolution, they are best managed on a basin-wide scale. However, this is unlikely until a wider resolution of the Arab-Israeli conflict, including the return of the Israeli-occupied Golan Heights to Syria, is worked out.

In 2001, Lebanon's Energy Minister Mohammed Abdel-Hamid Beydoun said that 'The Hasbani carries 150 million cubic metres of water per year' which, he said, Israel has been taking entirely for 'the last 25 years'. He said Lebanon would demand compensation for this long-usurped resource (Gomez-Rivas 2001). The Wazzani River is a small stream that feeds the Hasbani River; the latter is in turn a tributary of the Jordan River. Almost all of the Hasbani's flow of 150 mcm per year has for decades been used only by Israel. A very small fraction

of this volume is used by a few Lebanese farmers and households who independently withdraw water for their needs.

Using American and UNIFIL (United Nations Interim Forces in Lebanon) intermediaries, Lebanon notified Israel in February 2000 about a plan by its Council of the South to build a small pumping station along the banks of the Wazzani Spring, a tributary to the Hasbani River. The pump is located 1 km north of the international border (now called the 'blue line'), immediately north of the Alawite village of Ghajar which was occupied by Israel in 1967. The purpose of the pump is to supply the impoverished village of Wazzani in southern Lebanon with drinking water. One source said that 'Israel acknowledged the information without comment' (Bar'el 2001a), while another, the spokesman for the UNIFIL, Goksel, reveals that Israel's army and Ministry of Defence were 'fully aware of what is going on' and had agreed to it (O'Sullivan and Keinon 2001). After receiving a green light from the UN agency, Lebanon proceeded on 20 February 2001 to build the station and to pave an access road to it so that trucks can reach the area and erect electricity pylons in order to power the pumps.

When the water pumping station reached the front pages of major Israeli newspapers, Lebanese workers had for over three weeks been laying down pipes which would be used to transport water from the near-dry spring of the Wazzani to a nearby village by the same name. The pumping station is built to supply 300 cubic metres of water annually to the 200 returning residents of the Wazzani village. The four-inch (10-cm) diameter pipe will initially carry water at 10 litres per second to the village. Officials from the UNIFIL were bewildered by the political storm over the pump. The agency had mediated the work between Israel and the Lebanon, and its peacekeeping troops had been monitoring its progress.

### **Drought, distrust and development**

The Israeli media, and a few national figures and governmental officials, immediately cultivated a certain public hysteria. Scenarios of action, counter-action and of war were being aired by various official and non-official voices inside Israel. Its officials issued brazen threats of preemptive or punitive action. The ultra-nationalist Minister of National Infrastructure, Avigdor Lieberman, said that the Wazzani project 'cannot be allowed to pass without a reaction' (Reeves 2001). Similarly, a number of other prominent public figures and experts, including Water Commissioner Shimon Tal,

Mekorot water company head Uri Saguy, and even officials of the Society for the Protection of Nature in Israel explained to the media the dire consequences of this Lebanese action. Saguy, who was the former OC Intelligence chief, warned Lebanon against taking unilateral action and said: 'There is no water in the Middle East. Therefore, understandings must be reached. If not, it can turn into a war or a forceful confrontation' (O'Sullivan and Keinon 2001). A Likud Member of the Knesset, Michael Kleiner, asked the government to destroy the pump because he considered any change in the water distribution a provocation necessitating a military response (O'Sullivan and Keinon 2001). Last but not least, there were expressions of concern from non-governmental organizations and from the public over the adverse effects on the ecology, and on the quality of life of Israelis in the Upper Galilee. According to Hillel Plasman, head of the river department of the Society for the Protection of Nature in Israel, a reduction in the flow of the Wazzani would 'cause damage to the natural flora and fauna of the river' (O'Sullivan and Keinon 2001).

The media coverage oscillated between belligerency and concern. Some papers accused Lebanon of 'opening a new front' against Israel which is no less dangerous than the threat to the north posed by Hizbullah's Katyushas and other rockets. Others, however, described it as a 'storm in a glass'.

In covering the story of the Wazzani pump, many news stories in Israel, and some in the West, invoked the incident of 1964 when a summit of Arab leaders decided to deliberately divert the water of the Hasbani away from Israel in order to harm its economy. Israel used its military, including its air force, to promptly destroy the equipment being used to realize the diversion. The 1960s attempted diversion was seen by Israel as a *causis belli*. Merely invoking that attempt while also discussing the ongoing Wazzani pump incident worked to 'militarize' the solution and nudged the war option forward. Furthermore, the media did not distinguish between the collective and acrimonious efforts that took place four decades earlier under a political climate (Cold War) that had polarized the region and the world, and the current (2001) realities such as the unilateral nature of Lebanon's project, and its small-scale.

Israeli officials, as well as the media in the West and in Israel, exaggerated the issue by erroneously referring to water diversion from the Hasbani River, when the tiny, near-dry Wazzani Spring (which feeds the Hasbani) was the site of the pump. According to Ra'anana Gissin, an aide to Sharon,

Israel sent a very sharp message to Syria and Lebanon through the United Nations, warning them that diverting the waters of the Hasbani River would violate international conventions

Rinat (2001)

The media also stated that any diversion on the Hasbani River could dry up one of Israel's prime water sources (Rinat 2001), or dry up Israel's principal freshwater reservoir, Lake Tiberias. One of the more important factors in terms of understanding Israel's reaction to the pump may have been the severe and protracted drought that Israel as well as other countries in the eastern Mediterranean had been experiencing for about five years. Renewable water resources were being over-drawn.

The construction of the pumping station coincided with newly released dire warnings of a severe drop in water supplies in Israel, including a record low level of water in Lake Kinneret. Israel's Defence Ministry noted that water is more scarce than ever, and went on to express its concern that 'Lebanon could eventually build a dam to divert the entire river', something that Israel would respond to forcefully (Benn 2001). The Israeli Prime Minister Ariel Sharon stated that his country must uphold its water rights, and wanted to know whether the pumping station work was the start of a major water diversion effort (Benn 2001). His office considered the engineering work being done on the river as constituting a potentially 'ominous development' and a violation of international agreements. It sent a warning to Lebanon through the UN that it should not start pumping.

Coupled with a severe water shortage and distrust of its neighbour's water intentions, Israel was also concerned about the potential regional ramifications of Lebanon's unilateral, non-negotiated utilization of some of the waters of this international spring. Israel's National Infrastructure Minister Avigdor Lieberman described Lebanon's action as a 'very dangerous precedent' (O'Sullivan and Keinon 2001). The unintentional model set by Lebanon is that assertiveness within internationally acceptable norms pays off – something that Israel tried to thwart. There are major water-allocation issues that Israel needs to resolve with riparians like Syria and Palestine over the Yarmouk and Jordan rivers, and West Bank aquifers. Lebanon's perceived 'success' in the Wazzani incident may well be a cue for other negotiators to water agreements between Israel and her neighbours.

The Lebanese government has for almost 30 years been unable to adequately develop the waters of southern Lebanon due to Palestinian guerrilla activity along the border with Israel, and to

Israel's occupation of much of that area. In the crisis of 2001, Lebanon denied that it had any plans to build a dam on the Hasbani River, let alone on the Wazzani Spring. However, it asserted its right to its share of the waters of these rivers. Currently, Lebanon uses 7 mcm of the waters of the Hasbani and is working to use more to redevelop the South. The small pump triggered concern over a possible dam construction and fears over diverting the Hasbani. The UNIFIL's spokesman said that 'You don't divert a river with a pipe so small' (Wehbi 2001). What is ironic about this 'crisis' is that Israel has two pumps inside Lebanese territory, pumping water to the Israeli-occupied village of Ghajar 'and elsewhere in Israel', while Israeli pipes continue to supply water to a dozen Lebanese villages, one year after their liberation. This de facto 'arrangement' is mutually beneficial; hence they have not been a source of serious controversy.

Since the end of the civil war in 1990, Lebanon has been experiencing a rise in economic activity and a rapid increase in the quality of life for the population. In addition to this, the drought that has been affecting the eastern Mediterranean significantly reduced Lebanon's water supply in the late 1990s and until 2001. Due to socio-economic activities, and climatic factors, both pollution and depletion have been impacting available freshwater supplies. A survey found that 70% of the Lebanon's springs and aquifers are polluted or contaminated with harmful bacteria. Issues such as distrust due to long-standing tensions and economic and other development needs converged.

### Deflating war rhetoric

A few days after the 'crisis' began, Israeli officials and Israel's media began to tone down the rhetoric of war and realize that some of their coverage was passionate and irrational. This change in tone was helped by the comments of the spokesman for the UN peacekeeping force in south Lebanon. He expressed surprise at the commotion, especially because Israel was informed about the project before work was started on it, the construction activities were being done in the open, and because the small size of the pumping station, and the associated pipes would not adversely affect Israel's water supply (Reeves 2001). The Americans also refer to the small diameter of the pipeline as proof that the project is local in character and orientation (Schiff 2001). These assurances, as well as direct and continuous (using video cameras) observations by the Israelis of work on the pumping station worked quickly to deflate the war rhetoric.

A prominent Israeli journalist rejected the comparison between the Wazzani incident and the



1964 Arab attempts to divert the waters of the Jordan in order to harm Israel. He noted that at that time, these diversion attempts 'were one of the factors that contributed to the outbreak' (Schiff 2001) of the 1967 Arab–Israeli war. The chief of staff of Israel's armed forces, Lt-Gen Shaul Mofaz, said: 'I don't think we should indulge in fiery rhetoric and should certainly not be talking about war' (Reeves 2001). Prime Minister Ariel Sharon criticized a statement made by Mekorot Water chair Uri Saguy, who claimed Hasbani pumping is a cause for war (Benn 2001). A Mekorot Water Company official described the amount as

very small . . . , almost negligible. With the pipes it has laid, Lebanon can pump 1000 cubic meters a day, which is not a large amount either.

Gal (2001)

### Analysis of the politics behind the water tensions

Will a fully democratic world necessarily bring about a perpetual peace as Immanuel Kant (1795) proposed? Analyses by Hess and Orphanides show that a 'more democratic world will not necessarily be more peaceful' (2001, 804). They also show credible international institutions, increased international integration and coordination nudge international competitors towards peace. While a few critical contentious issues hang in the Lebanon–Israel balance, these two democratic states do not have any institutions that regulate their relations, not even a peace treaty. They, however, have a significant reservoir of distrust and ill-feeling.

The ballistic rise of the Wazzani scramble was closely related to Israel's interest in initiating direct or indirect negotiations with Lebanon to manage issues that are of concern to Israel. Years after Israel's forced withdrawal from southern Lebanon, the Lebanese government continued to refuse to send regular army units to patrol the border zone between the two countries. While local problems are handled by the police force, members of Hizbullah militia continue to make their presence felt; the latter situation aggravates Israel because members of this organization were behind the deadly strikes against Israeli troops when they had occupied southern Lebanon. Furthermore, employees working on the pump station in full view of the Israelis flew the flags of Lebanon and Hizbullah and exacerbated the atmosphere of tension and suspicion.

It now appears that the Israeli furore over the waters of the Wazzani was intended to pressure Lebanon into direct or indirect negotiations (Schiff 2001) over the establishment of official Lebanese authority in the border zone. This, Israel argues, can only be done by sending Lebanese army units to

patrol the area. Lebanon rejects the idea, arguing that day-to-day problems are handled by Lebanese police units whose power is reinforced by a token army presence. The Lebanese government wants to avoid the appearance of protecting Israel through the stationing of its armed forces along the international border. Furthermore, Lebanon continues to consider Israel as an occupier of the contested Sheba farms. The United Nations and Israel argue that the farms belong to Syria, while Syria states that they belong to Lebanon. Lebanon and its patron Syria prefer to leave the task of liberating the farms to the Iranian-financed Hizbullah's militiamen. Consequently, stationing the Lebanese army along the Israeli border would be awkward politically where an unofficial, irregular and 'independent' guerilla organization is seeking to liberate the Sheba farms while the regular army units look on.

The new American administration had played an important role in diffusing the dangerous hydro-tensions that had been building. It, for example, referred to the small diameter of the pipeline as proof that the project is local in character and orientation (Schiff 2001). After deflating the conflict spiral over the Wazzani, the administration tried to pursue quiet diplomacy with Hizbullah, the very group that it brands as 'terrorist'. A few months after the Wazzani debacle fizzled, the leader of Hizbullah, Sheik Hassan Nasrallah, revealed that the American administration has repeatedly tried to establish a 'contact channel' with his guerrilla organization, only to be turned down. The purpose of these contacts were to persuade Hizbullah to end its guerrilla attacks against Israel. Nasrallah said that his group is the one that 'decides where the battlefield should be, its geographic scope, place and time' (Panossian 2001). The administration was trying to achieve quietly what Israel had failed to realize through a game of hydropolitical brinkmanship.

### Conclusions

The 1990s was a turbulent decade in the security zone because the Lebanese military resistance to Israeli occupation had intensified. Consequently, Israel's air force and army frequently bombed various military and civilian targets inside Lebanon. Hizbullah-related bases and buildings, Lebanese power stations, television relay stations, bridges, highways and Syrian military positions inside Lebanon were frequently targeted. Most of these bombardments occurred without an overt military mobilization.

Israel has been responding to attacks by Hizbullah fighters on its troops in the Sheba farms by hitting back at the guerilla organization's positions, and by issuing verbal warnings to the

governments of Lebanon and Syria – the latter has over 30 000 troops inside Lebanon. Israel, however, decided in early 2001 to change the rules of the retaliation game, and its magnitude. It bombed a Syrian radar post inside a Syrian military base deep inside Lebanon. This mountain post is arguably the most strategically and militarily important, as well as technologically ‘advanced’, Syrian base in Lebanon. It is located along the Beirut–Damascus highway. Had the Israeli strike intended to render this central artery dysfunctional, this would have gravely undermined Syrian army units’ mobility, having implications at the local and regional levels. The political message sent by the choice of the attack was that Syria should restrain Hizbullah from attacking the Israeli-occupied Sheba. The message echoed loudly in political circles but the net effect on the ground appeared to be negligible.

Although Israel had not retaliated against Syrian posts inside Lebanon since 1996, the attack of 2001 inflicted the heaviest military price on Syria since Israel’s full-scale invasion of 1982, when its airforce downed close to one hundred Syrian fighter jets. The scale of the Israeli attack, however, raised the ante and risked embroiling more actors (namely Syria, and possibly Palestinian guerrillas inside Lebanon) across a wider geographic area. Note that south Lebanon had been experiencing limited attacks by Hizbullah and counter attacks by Israel. The massive Israeli retaliation of 2001 risked a serious escalation of the tensions which could have easily spiralled into a war. This incident shows how quickly rules of military standoffs change, and how close to a war antagonists sometimes get. It also shows that major military strikes do not necessarily require mobilization of troops and material. Hence, Israel could have bombed the Wazzani pump either from the air or from ground positions. The pump is about 1 km away from the Blue Line, and Israeli tanks and artillery are appreciable along this international border. An Israeli bombardment would have most certainly resulted in a counter-strike by Hizbullah militiamen, who also would not require any ‘mobilization’ of troops or material. Conflict over the Wazzani pump had almost prompted military blows and counter blows which would have been a ‘water war’. A war does not require a full mobilization of armies, a clash along a clear front-line, nor does it require territorial conquest and counter conquest.

The political storm over the Wazzani pump could be understood as a hydro-political deterrence on the part of Israel. It was trying to reassert its political position which experienced a perceived decline in the credibility of its deterrent power after its unilateral exit from south Lebanon. Israel also wanted to send a clear message to the Palestinians, Syrians and

certainly to the Lebanese that unilateral tampering with international watercourses is unacceptable and its consequence could be violent confrontation.

This paper has shown that water conflicts must be viewed in their multi-layered national and regional settings. The protracted drought that was affecting many countries in the Middle East, and the absence of a peace treaty and of a water allocation agreement between Israel and Lebanon were factors that had adverse effects on the crisis. Furthermore, bitterness over Israel’s military occupation of the Security Zone for over two decades, its continued occupation of the Syrian Golan and the Lebanese-claimed Sheba farms, and Israel’s interest in not letting the pump incident be seen as a ‘green light’ to its neighbouring states – all these factors combined to turn an ordinary situation into a major, albeit temporary, crisis. (The Lebanese–Israeli border remains tense because each side regularly violates the sovereignty of the other, this despite Israel’s withdrawal from the South!). While there is no indication that the Lebanese had intended to trigger a crisis by the pump, its determined position to press ahead in building the pump was supported by Syria and Iran, and by a ‘nod’ from the United States. The Israeli response may well have been a calculated ‘over-reaction’ to effectively send a signal of deterrence to nearby states with whom Israel shares a water system. Such hydro-political brinkmanship is dangerous because deterrence power is taken seriously only if a country is willing to demonstrate its resolve to use force to defend its perceived national security interests. This paper illustrates how rapidly a water conflict can escalate to the brink of war. The conflict spiral will not always veer conflicting riparians to peaceful resolution of their disagreement (Gleick 2000) as happened in this case study, especially where water is viewed in existential, national security terms. Violent confrontations over water are emerging as a looming threat to political stability in the future of the Middle East.

Although some researchers like Wolf (2000) and others argue that there will always be peaceful resolutions to conflicts between riparians, and that war over scarce resources is illogical, Maynes (1998), Amery (1997) and others, however, disagree. Maynes (1998), for example, observes that the Middle East is an area where the struggle over resources such as oil and water continues, and leaders believe they will gain resources and influence through war rather than diplomatic means. He argues that

In the Middle East, it will still be true that war will pay in a way that it will not in most other regions. Victory may bring land that offers more resources – either water or oil. Had Iraq won the Gulf War, it would have had more oil.

If Israel retains significant portions of the Golan Heights and the West Bank, it will have more water. Both oil and water will become increasingly pressing issues in the Middle East in the coming decades. Each could trigger conflict.

Maynes (1998)

Although the Middle East will witness many cooperative solutions to resource-based conflicts, violent confrontations over vital scarce resources are also highly probable in the next few decades.

The challenges and constraints of sharing international waters of the Wazzani and Hasbani are:

- lack of hydrological, physical and socio-economic data
- lack of an institutional framework, and
- the difficulties with the enforcement of the international water law.

The climate of political distrust cuts across these factors.

#### *Lack of data*

Lebanon requires an interdisciplinary inventory of the soil quality, precipitation and socio-economic conditions, as well as a survey of water resources available in south Lebanon, including flow into and withdrawal from the Hasbani River and its tributaries, for planning, operating and managing development schemes in this region, and for sharing the river among riparian states.

An interdisciplinary inventory of this scale requires major capital outlays, technically trained personnel and specialized equipment. Time is short because of the public pressure on the Lebanese government to rebuild the long-neglected South, and to provide fresh water for this thirsty region. Furthermore, this debt-ridden government is not likely to have the luxury of conducting scientific surveys for political and economic-development objectives. For a hydrological inventory to be complete, it requires the cooperation of all riparians. When countries such as Lebanon and Israel are in an official state of war, it is difficult to see how they can cooperate on, for example, sharing data or, even if data were shared, trusting the data of 'the other'. Lebanon continues to rely on data from the 1960s and 1970s to manage its ground and some surface waters. As far as the flow of the Wazzani is concerned, a United Nations team started in late July 2001 to survey the watershed and to measure water flow. Its purpose is to pre-empt a recurrence of the near-war situation by providing 'neutral' data that are up-to-date. Notice here that the mandate of this team is limited to the river's watershed only, and will not cover the border area of south Lebanon.

#### *Lack of institutional framework*

The absence of an institutional framework is a hindrance to the equitable sharing of international waters. A politically independent international institution is necessary to continuously collect, share and analyze data, as well as to develop and approve water development plans in the basin and to mediate conflicts between the riparians. The institutional void is related to the geopolitical discord that taints relations between Israel and Lebanon.

#### *International water law*

International law requires states to use international waters in a manner that is equitable and reasonable with respect to other states. However, 'equitable' and 'reasonable' are in the eye of the beholder because they are open to many, sometimes conflicting, interpretations. No effort has been made to negotiate a water allocation treaty between Lebanon and Israel.

Even if the roads of south Lebanon were paved over and the infrastructure renovated, a real re-linking of the once-occupied area with the rest of the country will take many years because this once-'closed' area had for so many years been deleted from the mental maps of so many Lebanese, especially the business community and those with no personal or family ties to the South. Furthermore, having 'won' this water conflict with their mightier neighbour, the Lebanese have developed greater determination to return and rebuild the historically neglected southern Lebanon. Lebanon plans to expand the Wazzani project in order to supply surrounding villages, including Abbassieh, Ain Arab, Maisat and Sarda. As long as south Lebanon is underdeveloped and lightly inhabited, it will continue to pose security challenges to the Lebanese and Israeli governments. Ironically, however, developing the area by utilizing the requisite water for food and economic security for the returning residents is likely to trigger a conflict and possibly a war between the two riparians. This is an illustration of the security dilemma where one actor's quest for security threatens the security of others, hence the looming threat of a water war.

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