

Governance of Water Resources in Palestine/Israel in Realization of Future Needs of Peace and Stability

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Abstract

The problem between Palestinians and Israelis consist of a religious, military, ideological, and political conflict extending for over one hundred years over the control of historic Palestine land and its natural resources including water. The conflict did result, in general, in instability, insecurity, and destruction of properties, infrastructure, and life loss and water specific, in unequal water reach, development, and use. The current water demand of both sides exceeds what the hydrology of the system can afford. A solution to this water supply problem was proposed and detailed consisting in the creation and operation of joint water utility governing and managing all water available in the system for the equal and equitable benefit of both sides and people. It was demonstrated that the proper establishment and effective operation of the proposed joint utility would resolve the water supply problem between Palestinians and Israelis in addition to providing both sides with many other benefits and advantages.

Introduction

Water resources availability in Palestine is relatively small due to the country's hydrological and geological conditions. In addition to the natural and conventional influences that affect water use in any country, Historic Palestine is experiencing and since over one hundred years an additional specific influence which is the Israeli military occupation and unilateral control of its land and natural resources including water. This situation did result in instability, insecurity, and destruction of properties, infrastructure, and life loss. The conflict did result, water specific, in unequal water reach, development, and use (allocation).

Current forced water shortage can be reflected in Palestine's per capita water use of 82 m³/person-yr, among the lowest in the world. In comparison, the Israeli water use is about 350 m³/person-yr. If at present-day Palestinians acquire their water rights, the available water would be about 275 m³/person-yr

(the lowest in the southern Mediterranean region, WWF 2003), still very low compared to regional and world figures (Tropp and Jagerskog 2006).

Current Palestinian water system lack legal/administrative elements, lack access and mobility to national water resources, lack legal status, have limited if any internal and external power or authority, lack technical capacities (both material and human capacities), and have poor economic, financial, and funding capacities.

The Israeli restrictions imposed on Palestinian people including limits on movement, restrictions on import/export and entering of raw materials needed for production, and limitation of funding and fund movement has lead to suppressed and/or negative economic growth in Palestine. This resulted in high level of immigration rates especially among young people.

Therefore, the initial and basic problem between Palestinians and Israelis on water is not water availability, use or supply efficiency, or any other economic or technical problems but the Israeli political competition over Palestinian land and its natural resources and who controls and owns what in historic Palestine. Israel uses military power unilaterally to set water controls, use, access and mobility of Israelis and Palestinians to available water resources in historic Palestine including the West Bank and Gaza Strip resulting in a growing water demand for Israelis and in limitations and restrictions of water for the Palestinians that has resulted in a difference in water use between Israelis and Palestinians of over four to one. The ongoing and increasing problem is that population and socio-economic growth of both people with time has resulted in a severe water deficit which exceeds available and renewable water resources in the disputed area or boundaries (Haddad 2007).

Regardless of the conflict on water, annual recharge capacity of surface and ground water resources in historic Palestine would not be enough for both people socio-economic development neither at present nor in the future.

If both sides would like to have peace and stability—the conflict should be resolved and a compromise should be found in which both need to be satisfied and both should have sustainable socio-economic needs, growth and development. Consequently, both sides should deal with and negotiate the conflict with equal partnership, compatibility and not with domination, slavery, or upper class look.

In Oslo B agreement, Israel acknowledged Palestinian water rights in the West Bank but it was agreed to negotiate and settle these rights during the final status negotiations. Thus, governance of water resources represents an important element in the final status negotiations and in delineating the final agreement between Palestinians and Israelis.

Water is essential to human life and its socio-economic development. Therefore sufficient water supply availability and sustainability is an important element in any future negotiations and in reaching peace agreement between Palestinians and Israelis.

While water negotiators from both Palestinians Israelis are already dealing with a number of pressures and conflicting matters, this work is a step ahead in helping them finding the way-out for securing sustainable water management for

both people. Such a solution should be based on the principles of securing safe-effective-sufficient and sustainable in time and in place water supply, at reasonable cost for both people.

Building on the experience gained from previous work which focused on the possible institutional structures for the joint management of transboundary and conflicted water resources between Israelis and Palestinians, such a solution could be implemented best through a proposed and detailed in this paper joint water utility (JWU).

It is hoped that this work will have a practical focus which fits in well with current interests, will make a useful contribution to minimizing conflict and enabling peace between Palestinians and Israelis, and will constitute a basis for better qualitative and quantitative, long-term more effective water supply for both sides.

Existing Situation

The following background information on Palestine and its water resources were extracted from a previous work of the author (Haddad 2007)

a. Historic Backdrop

Water is not a new issue in the Palestine question. At the end of the nineteenth century, there were no Jewish immigrants in Palestine (See Figure 1 and The League of Nations, 1945). All what was thought at that time by Jewish organizations in Europe was on where to establish a homeland for the dispersed Jews of the world. At that time cooperation began between the World Zionist Organization and the British government on the Palestinian water issue. As a result of this cooperation, the Royal Scientific Society in 1873 sent a delegation to Palestine to investigate two issues; the first was the available water resources and the second was the possibility of settling Jews in the southern part of Palestine- Al-Naqab. The delegation after it returned reported in 1875 that water to Al- Naqab can be brought from the northern parts of Palestine and Jews can be settled in it (Labady 1989).

During the period from 1875 to 1948 several attempts were made by the various Jewish organizations aiming toward increasing Jewish immigration to historic Palestine and in parallel physical control of the water resources in Palestine and surroundings or the transfer of water from outside Palestine (Schmida 1984, Dillman 1989, and Ali 1964) .

In the fall of 1941 British prime minister, Whinston Churchill, officially announced in the Common Council that the leaders of Jews requested from the British government to have free hands in all parts of Palestine and those parts of southern Lebanon which include the Litani river as a price for Jewish full support of Great Britain and their allies in the second World War (Ali 1964).

Many water plans, concessions, and projects (Dillman 1989, and Ali 1964) evolved and presented, however, the riparian parties never sat around one table to discuss and settle the water problems faced. Also and always Palestinians, in these plans and projects, were treated as they do not exist or have no rights.

b. Palestine in this Paper

Historic Palestine consists of Israel, West Bank, and Gaza Strip. Palestine as presented in this paper consists of the West Bank including East Jerusalem and the Gaza Strip. The West Bank and the Gaza Strip are those parts of Historic Palestine which were occupied by the Israeli army during the 1967 war between Israel and Egypt, Syria, and Jordan. The land area of the West Bank is estimated at 5572 km² extending for about 155 km in length and about 60 km in width. The Gaza Strip, with an area of 367 km² extending for approximately 41 kilometers in length and approximately 7 to 9 kilometers in width (see Figure 2, Abdel Salam 1990, and Haddad 1998).

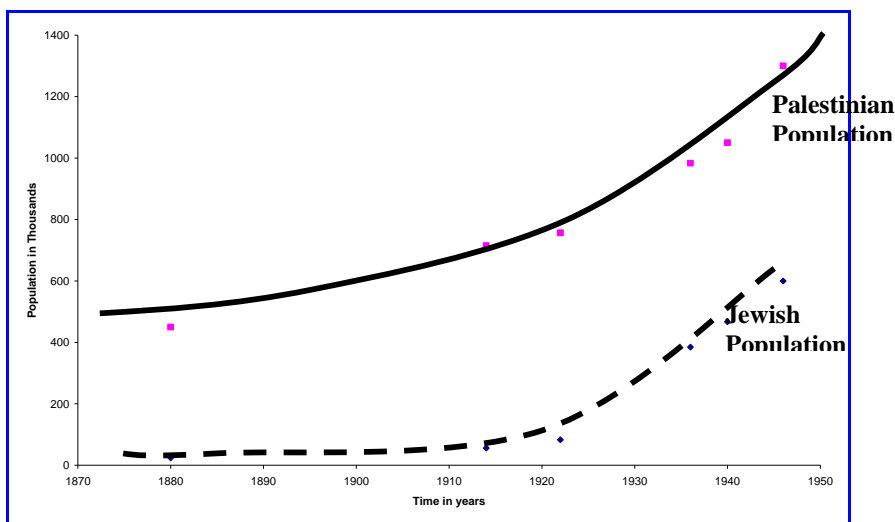


Figure 1 Palestinian and Jewish Population Development (1880 – 1946)

c. Palestinian Population

Palestinian population projections reveal that mid year population in 2003 totaled 3,634,495 persons, of whom 2,304,825 in the West Bank and 1,329,670 in Gaza Strip (PCBS, 2003 and 2004). According to the official list of local authorities adopted by the Palestinian Central Bureau of Statistics (PCBS, 2003) and the ministry of local governments, there are 686 localities in Palestine. The localities are distributed by type as 54 urban, 603 rural, and 29 refugee camps. These localities distributed by type of authority as 107 municipalities, 11 local councils, 374 village council or project committee, and 29 director of refugee camp (additional 76 rural localities are either not inhabited or joined to larger locality).

d. Palestinian Water Resources

The estimated average annual ground water recharge in Palestine is 698 to 708 mcm/yr (648 mcm/yr in the West Bank and 50 – 60 mcm/yr in the Gaza Strip). The only surface water source in the West Bank is the Jordan river and its tributaries (see Figure 3). In the Johnston plan, the Palestinian share in the Jordan River of 257 mcm/yr was considered as part of the Jordanian share of

774 mcm/yr as the West Bank was under the Jordanian rule. Since 1967 war and until present, Palestinians were prohibited by the Israeli army from using the Jordan river water and their lands and farms located along the western side of the river were confiscated and the area was declared as a restricted military security zone (Haddad 1993).

e. Palestinian Water System

According to PWA (2003), the total water supply for domestic purposes in the West Bank was 53 mcm/yr. The average rate of unaccounted for water (UFW) in urban areas was estimated at 42% of total water supply (it varies between 25 and 55 percent), therefore, the average consumed per capita domestic water consumption in these areas was 36.5 l/d (or as surveyed, 55 l/d as average consumed since not all UFW is lost in the ground) which is far from WHO standards which is 150 l/d.

PWA (2003) also estimated that 256 rural communities in the West Bank with population more than 200 thousand still without access to public water supply. The people in these communities depend on local springs and harvesting cisterns to get water for all purposes and the water used is usually not suitable for drinking.

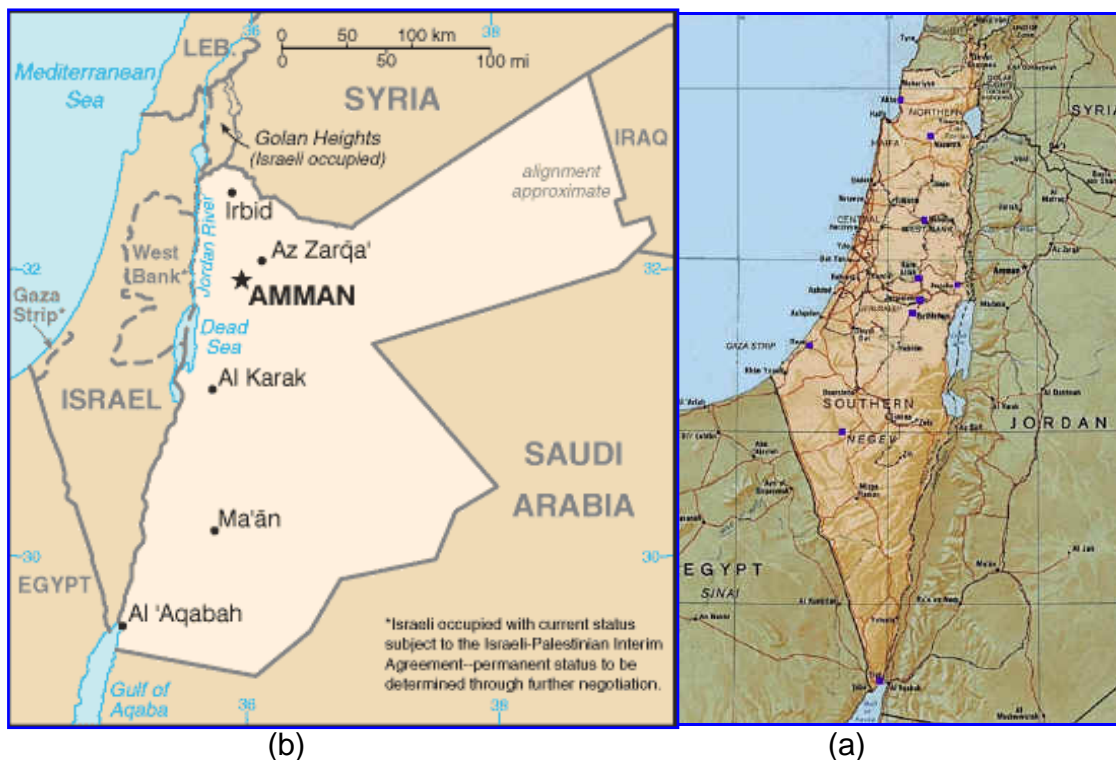


Figure 2. General location Map of (a) Historic Palestine and (b) Existing Political Situation

Water infrastructure (the system of water wells, springs, reservoirs, networks, pumping stations, etc.) in Palestine is characterized by the existence of disjointed remote sites and locations.

Existing water institutions have high overhead cost and do not have the ability to mobilize, invest, and recover funds needed for either planning, development of projects and processes or operational and maintenance issues.

f. Palestinian Agriculture

Agriculture has historically been a very important sector of the Palestine's economy. About 63% of allowed water to Palestinians or 52 m³/person-yr is used in agriculture. At present agriculture accounts for around 15 percent of the GNP of the Palestinian territories and around 15–20 percent of the population work in the sector.

Approximately 2,180,000 dunums (35% of the total area of the West Bank and Gaza Strip) are considered as natural grazing areas. The Eastern Slopes region makes up most of the Palestinian Territories rangeland. It represents about 1,500,000 dunums or 69% of the range area. Of the total grazing area only 700,000 dunums are accessible to Palestinian livestock owners, while the remaining 1,480,000 are currently not accessible as a result of land confiscation for the Israeli colonies, nature reserves or closed military areas. This led to overgrazing and progressive desertification in these areas (Isaac and Ghanayem 2001).

g. Israeli Colonies in the West Bank:

Since the beginning of the Israeli occupation of the Palestinian territories in 1967, consecutive Israeli governments have established Jewish colonies in violation of international law. Today, there is between 145-198 colonies in the West Bank with about 390,000 Jews living in and occupying about 42% of the land area of the West Bank (The Palestine Monitor 2003).

Israel has moved many of its polluting industries from places inside Israel to areas near the 1967 border or inside Jewish colonies. For example, Geshuri Industries, a manufacturer of pesticides and fertilizers, in Kfar Saba, and the Dixon gas industrial factory has been moved to an area adjacent to Tulkarm inside the West Bank since 1987. Currently, these Israeli industries were estimated at about 200 factories and occupy a total area of approximately 302 hectares (Isaac and Ghanayem 2001).

The Jewish colonies in the Palestinian occupied territory along with the vast network of "by-pass" roads that join the colonies to each other and to Israel are:

- Changing the legal status of the territory and creating a new situation since they illegally built on land confiscated by many means including military power from Palestinians;
- Fragmenting and disrupting Palestinian society by cutting off many Palestinian villages and urban centers from each other
- Making Palestinian movement time consuming, costly, and highly risky and dangerous (the Israeli army established 130 outposts to secure the colonies – outpost used to check Palestinians and in many cases prevent them from movement in some direction).

- Creating violence, killing nearby innocent Palestinians and destroying Palestinian land and resources to force them to leave (Jewish colonialists have killed at least 54 Palestinians during the period 2000-2003 – the Palestine Monitor 2003).
- Drilled and diverted water for domestic, agricultural, and industrial development and use of the colonies, altering Palestinian water rights and use.

h. The Separation wall

Israel's decided to establish a permanent barrier between the West Bank and Israel in April 2002. There is strong consensus in the international community that the construction of the separation wall in the West Bank by Israel violated international law including the Geneva Conventions, created the artificial division of one nation, violated human rights and undermined the livelihood of many Palestinian people.

The construction of the wall subjected Palestinians to several water vulnerabilities, including irrigation infrastructure devastation, impeded access and mobility to water and irrigation land resources, increased land aridity, and detrimental effects on community socio-economic and migration.

Among the most sectors likely to be negatively affected by the separation wall construction is agriculture. Palestinian villagers are especially sensitive to these impacts and consequences as they relies heavily on income from farming. More than 100,000 trees have been uprooted. More than 36,000 meters of irrigation networks have been destroyed. Delays associated with travel through the limited gates of the wall have had undermined the daily routines, productivity and efficiency of Palestinian farmers, delaying and altering their agricultural operations. During the first construction phase of the wall, about 42% of the West Bank's agricultural sector was affected. The lands blocked contain 80% of the West Bank's water wells in operation and provides 53% of its water-sector employment. Currently, a minimum of 50 productive water wells and 15 villages are being trapped in the buffer zone and west of the wall.(Haddad 2005-b).

Despite the fact that the expansion and annexation wall is not yet completed and it is too early to observe many of the social implications of it, and the fact that some of the effects will take time to become manifest as migration, the households will first have to learn how it is to live with the new situation caused by the wall, and then find coping mechanisms (PCBS 2004).

The Desired, Proposed Solution

Building on the experience gained from previous work which focused on the possible institutional structures for the joint management of transboundary and conflicted water resources between Israelis and Palestinians, an institutional framework suitable for governing the Palestinian and Israeli water resources (joint water utility, JWU) has been posit (Haddad1999, Haddad 2005-a, Feitelson and Haddad 1998-a , 1998-b, and 2001).

The proposed JWU consists of creating/establishing one joint water supply utility which would takeover the management of available stocks of total or all natural water resources in the system and commit it self to serving both nations equally and equitably with clear objectives , goals, and authority. The following paragraphs will detail some of the elements, advantages and disadvantages, and operational issues of JWU.

a. Proposed JWU Structure

JWU over Palestinian and Israeli water resources will define the interaction between water resource development and uses and consequently control impacts, define each side operational responsibilities and potential trade-offs, generate explicit joint understanding of what is needed and possible for both sides and set a blueprint for future action plans, and improve setting mutual priorities for joint water resources developments.

The joint water utility should focus on:

- Govern all available and develop new and additional water to cover the needs of both sides and people
- Define the interrelation and cross connection between national water institutions and the proposed JWU governance,
- Create trans-regional water supply linkages,
- Enhance local, regional, and international funding and investment opportunity
- Develop the appropriate water infrastructure to carry out the main objectives
- Develop additional water resources through desalination and/or water imports from outside the region
- Enhance water use and supply efficiency
- Set policies and implementation plans related to water conservation, water protection, and runoff, drought, and flood management

b. Prerequisites

In proposing JWU, it was assumed that (a) the two political sides did negotiate and reach a political agreement on all conflicted matters and issues including water issues covering water allocations and implementation mechanism of the agreement represented by the establishment and operation of JWU, (b) JWU will be operated by a third party with supervision of both sides and maintain equity and equality in water supply among both sides and people , (c) JWU will among other maintain and pursue sustainable water resources development and use for both people and entity, (d) JWU would be given (by both sides) sufficient/enough power, trust, belief, and authority to enable it operate in temporal and special continuum and with high order of effectiveness.

The JWU need to be detailed and agreed upon by both sides in advance to start of any operation/implementation on/of political, administrative, financial, technical, legal, environmental, and other operational aspects.

JWU Establishments and Operational Responsibilities

Various JWU establishment and operation elements and constraints were discussed in the paper such as: the impact of JWU creation on State sovereignty (on both sides), water resources ownership, structure-size-domain-complexity and composition of JWU, the operation of both surface and groundwater resources in wet and dry periods, the impact of JWU water developmental projects and infrastructures on the water system both sides, implementation issues such as conflict resolution mechanisms, communication and coordination mechanisms, the role of a third party in JWU operation and/or conflict resolution, fund raising and controlling mechanisms.

JWU and State Sovereignty: The uncertainty and disbelief probably will arise about the impact of JWU creation on State sovereignty (on both sides) and that large and complex in tasks and activities utility such as the anticipated JWU is not always appropriate to the developmental problems of the State (Turton, 1999). Therefore, the creation of Palestinian/Israeli JWU should be agreed upon with sufficient detail between the two sides and should not be a unilateral activity. The JWU agreement and details will be used not only for clarification purposes and minimizing conflicts but also in convincing people in both sides of the new institution and the goodies that they will expect from its creation.

In proposing JWU, it was assumed that with time genuine and proper JWU will be an example for the region of (a) maintaining equity and equality among people under conflict, and (b) starting and continuing sustainable development not only in the water sector but in the overall state development since water availability is a basic requirement for all economic activities. If trust and belief is given to such initiatives, JWU would help both governments to provide sufficient water services to citizens and the area would move from conflict to cooperation and from unsustainable to sustainable economic development leading to better peace and higher stability.

Borders, Territoriality and the Military Overpower: Present Israeli control of Palestinian borders, land, and resources including water was dominated by means of and the continuance of military overpower. This practice is unacceptable by the United Nations and the overwhelming majority of world's governments. Palestinians have had to earn the right to be treated internally and externally as a sovereign equal as Israelis (Møller, 2000). Therefore, by creating a Palestinian/Israeli JWU within a comprehensive and just peace agreement both side would have not only know and define their borders, land and resources including water but also complied with international law and enhanced peace and stability and socioeconomic development.

By reaching a political agreement and by implanting it through the creation and proper operation of JWU, water allocations would be much easier to attain and maintain and undesirable political and/or military power bias would be minimal and/or absent.

JWU Ownership and Management: JWU will be owned by both sides with equal share and operated and managed by a third independent party or side. Both sides would have supervisors to oversee the operation and compliance of

JWU management with the term of the agreement. There would be clear mechanisms to resolve any misinterpretation or conflict that might rise.

Scenarios and their Analysis: The institutional structure analysis will cover three scenarios:

1. First Scenario: the full management of water resources available between the Jordan River west to the Mediterranean (total available water in historic Palestine),

As historic Palestine including what is named now Palestinian Territory and Israel constitute one hydrological unit and cycle, it would be better to have one effective water management system, i.e., the JWU. It would also minimize the conflicting between the two sides over water since one utility is managing all water resources available to both sides and provide water to both sides under the same equal criteria.

2. Second Scenario: the management of shared/transboundary water resources between Palestinians and Israelis only,

This scenario is less encouraging and would serve the existing political and military power balance in the area as Israel claim the sharing of much of water resources in the Palestinian Territory. The proposed JWU in this case would act as an institution that would resolve conflicting points that evolve between Palestinians and Israelis over the development of water resources in the Palestinian Territory during peace times in assuring Israeli interests. In this case JWU would not serve as an effective water management system

3. Third Scenario: and a mixed alternative of management of shared/transboundary water resources between Palestinians and Israelis plus future water resources developments for both sides.

The third scenario is not recommended and would further serve the existing political and military power balance in the area as Israel claim the control of much of water resources in the Palestinian Territory. The proposed JWU in this case would act as an institution that would dictate water supply and use on the Palestinian side. JWU in this scenario would resolve conflicting points that evolve between Palestinians and Israelis under limited and quota lined water resources development. In this case JWU would serve neither as an effective water management system nor as a real joint decision making – it would be a one sided management body.

Our detailed discussion in this paper and due to the above mentioned limitations of the second and third scenario will focus on the first scenario only.

Pros and Cons of JWU

a. Enhancing Conflict Resolution, Consolidating, Peace and Stability

In establishing and operating JWU, the water problem between the two sides will be practically resolved. This resolution of the water supply problem will

certainly minimize conflicting points; enhance socio-economic development and growth and balance equity leading to more stable peace between the two sides

b. Technological Balance

The establishment and operation of an effective and capable Palestinian/Israeli JWU would enhance the use of top and recent technological advancement in the sector such those used in sea and brackish water desalination and irrigation systems and consequently would minimize technological differences and create balance between the two sides.

c. Public Financial Management

It was found that public financial management has been going through profound change during the past decade. We are passing through a period in which the public is demanding more and better services while demonstrating an unwillingness to pay higher taxes and fees. Accordingly, the establishment and operation of an effective and capable Palestinian/Israeli JWU would also use integrated financial management systems and develop and apply ways to cut costs while improving efficiency, effectiveness, and accountability.

d. JWU and Water Environmental Protection:

The creation and proper operation of JWU as new forms of action and coordination between the two sides will help in meeting the environmental challenges related to water resources and uses. This will minimize the stresses that can make societies ungovernable, threatening both the physical and political viability of communities leading to better human wellbeing and more stable peace.

e. Institutionalization of Water Use and Basin Administration

Institutionalization of water use through JWU would lead to equitable water use within the service area with time, to effective user protection mechanisms, to the development of new and additional water sources, and to virtual and actual water trading and/or transfer.

JWU creation would lead to strong administrative jurisdictional power and authority and to that effective management system to prevail and govern which will result in proper and long lasting implementation of the political agreement between the two sides. Also such strong administrative jurisdictional power and authority would result in better qualitative and quantitative monitoring of water resources and water basin development, and would enhance other similar water management aspects.

f. Water Supply Reliability and Socio-economic Development

By improving water supply delivery for both nations, by increasing operational flexibility of the water system by allowing linkages, inter and cross connections and transfers between local water supply points in both entities, by developing new and additional water sources, and by building strategic

reservoirs, JWU would enhance water supply reliability and also would consolidate sustainable socio economic development in both sides.

g. Better Crisis Management:

When one water supply utility managing the whole hydrologic cycle and water system it would better response to emergencies and give early warning to potential crisis such as flooding or droughts. It would also take responsibility and action to extreme and sudden pollution of resources.

h. Transparency and Knowledge Transfer:

As one utility is managing the water supply system, collecting and documenting data based on accepted quality principles with open access of both and interested parties and sides, transparency would be establish and knowledge transfer will be enhanced.

i. Regional Cooperation

In addition, the creation of JWU would constitute an example for the region to follow and use to resolve their water as well as other conflicting matters.

Conclusions

This paper has unconventionally presented an approach for resolving the water conflict between Palestinians and Israelis for the benefit of citizens of both nations.

The basic structure of JWU, the prerequisite to its establishment, and the operational elements and responsibilities including State sovereignty, border and land, JWU ownership, military overpower, and scenarios were pinpointed and presented.

It was demonstrated that by the creation of JWU would lead to not only to proper management and implementation of water agreement between the two sides but also would provide a logical and practical answer to the water supply problems between the two sides, enhance technical and economic efficiency of water supply, enhance qualitative and quantitative human wellbeing- health - and the environment, and enhance and sustain economic development and growth leading to better and sustainable peace and stability.

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