The hidden issues of the Arab-Israeli conflict in the hydropolitics of Palestine:

The other conflict

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The conflict that is commonly defined as the Arab- Israeli conflict in the Middle East (ME) is usually considered to be a conflict over the control of land. Although, when looking at the different causes of the conflict, some have considered competition over water resources as one of them. This is because the Middle East is the world's most water-stressed region (IPCC, 2007). A whole set of literature in fact, argues that the scarcity of water resources leads countries to wage to war, in the form of armed conflict, against each other. Other moderate views believe that even if water is not the main cause of the conflict, the competition over some water resources prevents or delays the peace process of ongoing conflicts. The title of my paper is an adaptation from an article of Medzini & Wolf (2007). Although the article does not assume that water is the reason for a conflict ongoing in the area I am considering, the authors are implying that the issue of competition over water will not be resolved with the peace process and that another conflict may arise just because of the water. My theory is almost opposite to this one. In fact I will argue that water in the context of the Arab-Israeli conflict it is not the reason for the conflicts that we have seen in the past and that could break out in the future, and that at the same time the management of water, the unbalance of the distribution, it is not a cause of the political conflict but more a consequence of it, whenever the main political conflict will end, so will the disputes over water. Moreover, by broadening the definition of conflict we see that the main armed conflict and this mismanagement and unbalance of the distribution generate another conflict having water as a subject.

My study is focusing on the water resources and management in the area of Israel and Palestine, an area that have been experiencing various type of conflicts in the last 60 years. With Palestine I mean the areas that are usually referred to as the West Bank and Gaza Strip, currently

illegally occupied by the neighbor state of Israel. With Palestinians I mean those who are living in this area, not including Palestinians in other areas such as refugees in Jordan, this is because I want to limit my study to the geographical areas of West Bank, Gaza and Israel. In addition I may refer to Palestine throughout the paper as a State, for a practical reason, even if it is not internationally recognized as such.

I will give an outline of the historical background of the region, which is useful to understand some of the present conditions and relations between the two states. I will then give some data regarding the economy of them and the water management and what the current literature says about the correlation between conflict and water. Then I will justify my assumptions based on the information I have concluding that the conflict between Palestine and Israel is not caused by the competition over water, but rather the mismanagement and unbalance in the distribution of water, which cause another parallel social and economical conflict, is caused by the larger political conflict.

Historical background of the region

In order to understand the geopolitical situation of the area, it is worth to spend some words on the historical background on the two states. The area of the present Israel, Palestine and Jordan has been ruled by Britain under the Mandate of Palestine from the end of the First World War to the Second World War. In 1947 a UN resolution proposed the partition of the territory of the Mandate of Palestine and the division of it into two states. Israel was allowed to rule over 53 per cent of the territory and Palestine over 47 per cent. In May 1948 the state of Israel was born and British withdrew from Palestine. The neighboring Arab states protested against this and invaded Israel and Palestine. In this war Israel won gaining 50 per cent more

territory than what was assigned to it by the UN. In fact they ended up occupying 78 percent of the original Mandate of Palestine (see map1 in appendix). The other territory, West Bank and Gaza went under the control of Jordan and Egypt until 1967. The escalation of tensions between Israel, Egypt, Syria and Jordan, culminate in the Six-Day War, where Israel destroyed Egyptian air force on the ground, managed to win the war in only six days and occupied the Gaza strip and the Sinai Peninsula, while on the front with Jordan and Syria, Israel took control over the West Bank and the Golan Heights. The West Bank and Gaza became known as the Occupied Palestinian territories.

In the 90s some negotiations started between Israel and the Palestinian Liberation Organization (PLO). As a result the Oslo Accords (Declaration of Principles on Interim Self-Government Arrangements and Interim Agreement on the West Bank and the Gaza Strip) were signed in 1993 and 1995. These agreements included five main issues to be resolved and that needed cooperation in the short term. These issues were: the allocation of water, the delineation of borders, the Palestinian refugees, the status of Jerusalem and the Israeli settlement in the West Bank. Apparently the issue of water allocation was declassified; in fact there have not been any subsequent *ad-hoc* treaty on the allocation of water. The Palestinian National Authority was established, as provided for in the agreement, and assumed control over the West Bank and Gaza in 1994. Notwithstanding this, Israel has continued to build settlements in the Occupied Territories, and bypass-roads, which are supposed to connect Israeli settlements throughout the Occupied Territory.

The frustration for the lack of progress in the peace process led to the intifada (uprising) of Palestinians in September 2000. It started with a violent reaction of Palestinians to a visit of Sharon, an Israel Leader to the Islamic Holy Sites and then the protests and violence spread out

throughout Palestinians in the west bank and Gaza. According to an Israeli Human rights Group Israeli security forces killed 6371 Palestinians, while Palestinians killed 1083 Israelis in Israel and the Occupied Territories. (B'Tselem, 2010). The Un Security council condemned the excess use of violence by the Israeli security forces and accused the Palestinians leader, Arafat, of failing to prevent and stop the violence (Parsons, 2010). Nowadays still some 6,000 Palestinians are detained in Israeli prisons, and 189 are held in administrative detention without trial (AI, 2009; B'Tselem, 2010). In September 2005 Israel withdrew its settlers and troops from Gaza and northern West Bank as ruled by the Disengagement Plan proposed by Ariel Sharon, Israeli Prime Minister. Nevertheless Israel has been still controlling the borders, air space and territorial waters. Gaza has been subjected to a blockade by Israel that strictly restricts the entrance of food and other goods in the territory, justifying it as a matter of national security for Israel. No one can enter or leave Gaza without the permission of Israeli army, and even if under most of the agreements signed, including Oslo Accords, the two territories, Gaza and the West Bank are considered one entity, practically Palestinians are not allowed to move freely between the two areas. This has caused a high increase in unemployment and poverty (Parsons, 2010; B'Tselem, 2007) . Gaza for this reason, as well as the West Bank, depends heavily on international donors. At the same time Israel has continued to expand in the West Bank, building unlawful settlement, and also bypass roads and infrastructure to serve settlers (see Map2). Currently most of the provisions in the Oslo Accords are not abided by, and the Palestinian National Authority has practically no power and no ability to function, due to the restrictions of Israel. In 2006 Palestinian political party Hamas won parliamentary elections over Fatah, but it has only *de facto* administration over Palestine, while Israel has the complete military control of the whole territory, resources and air space (Parsons, 2010).

Water availability

The region of the Middle East faces difficulties in supplying water. The region is water stressed because it is in one of driest area of the world. Most of the water resources are shared between more than two countries (Giordano et al., 2002; Postel, 1992). In particular Israel, Syria and Jordan compete for Jordan River; Iraq, Syria and Turkey over Tigris and Euphrates Rivers and Egypt, Sudan and Ethiopia over the Nile River (see also Map3).

A comprehensive data on the use of water and the economic contribution of water can be found in the book by Kliot (1994). Focusing on the international legal system and rights of riparian states, she provides data about the use of water in the Middle East and the country requirement of water covering hydrological, social, political, economic and legal issues that are related to the region's water problem. She makes an overview of the treaties and the actual status of international law on water sharing. In particular she uses the legal framework of the Helsinki and the International Law Commission (ILC) Rules to determine the technical allocation of water and tries to define the applicability of the ILC Rules to the riparian countries of the region. As far as the Jordan-Yarkum is concerned, she gives the idea of the vulnerability of the region by saying that the Jordan-Yarkum river system "represents and extreme case of an international river with a very small amount of water bitterly fought over the Israel and its Arabs neighbors" (p.272) and that the basin is "characterized by lack of cooperation and even conflict". As a matter of fact Jordan-Yarmuk "is the only international basin in which gunfire has been exchanged in order to stop or prevent the implementation of water projects" (p.272). These are the reasons why Helsinki and ILC Rules show their shortcomings and are hard to apply when it comes to this basin. For example the Israeli practice of pumping water within the West Bank for Jewish settlement "deprives the Palestinians of their water resources" (p.276), which is against the

Helsinki and ILC Rules. She suggests that an agreement considering all water resources, surface and ground, and which includes mechanisms to solve conflicts over water resources (p.276) will be more successful although "it seems that water is going to remain a major source of conflict and instability in the region" (p.264). The failure of these important frameworks (Helsinki and ILC Rules) is evidence that agreements need to be improved to better suit the needs of the nations involved. However her discussion leaves out some analysis on social and political implication on the use of water.

Postel, in her book (1992), provides several data on the availability of water and its use, especially in the ME. She also includes and tries to estimate the effect of global warming on the hydrological cycle. She concludes that it is difficult to predict water needs. She bases her analysis and prediction mainly considering a combination of population growth and the rise of temperatures and stresses the importance of sustainable water use. According to her, less than 1% of the water in the planet is available for human use. In order to be food self sufficient some countries such as Saudi Arabia, are over exploiting groundwater resources, which are nonrenewable, this reflect a non sustainable use of water and uncertainty about the future, when groundwater resources will dry out (see also Map 4). Pessimistic perspectives on water availability (Gleick, 1989; Postlel, 1999) sees the imminent scarcity of water and suggest that a solution can be in water-sharing agreement but do not give suggestions on how this process can politically happen. This indicates the difficulties in reaching agreements and the need for more attention to the problem.

Country data

As far as the specific demographical and economic situation of Israel and Palestine is

concerned, Israel has a population of 7,051,000 people while Palestine 4,147,000, of which about 1,500,000 in Gaza. (Fao, 2009a, 2009b)

The Gross Domestic Product (GDP) for Israel is 161,820 million US$/yr, with a value added in agriculture of 1.8%. Palestine has instead a GDP of 4,010 million US$/yr with a value added in agriculture of 9.5%. Considering the size of the population, Palestine has a GDP per capita of 1,083.2 US$/yr, while Israel 19,292 US$/yr. From this figure is immediately evident that Israel and Palestine are at a different stage of development. There is an extremely high difference between the GDP of the two countries, moreover the Human Development Index (HDI), which ranges from 0 to 1 (with 1 indicating the highest level of development), is 0.9 for Israel while 0.7 for Palestine. The agricultural sector weights on the GDP more than 5 times more for Palestine than for Israel (although for both, agriculture does not represent the main sector contributing to the GDP). (FAO, 2009a, 2009b)

Even if agriculture contribution to the economic growth of the nation is declining or is secondary, most rural sections of the population of Middle East countries rely on agriculture for their subsistence (Amery, 2002; Gleick, 1993; Kliot, 1994). In Palestine rural population represent at least 28.1% of the entire population, while in Israel only about 8.3% (FAO, 2009a, 2009b).

Agriculture in Palestine also employs 10.1% of the population, while in Israel this figure is as low as 2.2%. For both countries agriculture is the sector where most of the water is allocated, in particular Palestine allocates 198 mcm (45%) of the total water withdraw (418 mcm/y) to agriculture and Israel allocates to it 1,129 mcm (58%) of the total water withdrawn (1,954 mcm/y).

In economic return, agriculture represents the least cost-effective use of water. In fact a

calculation made on the amount of water used in agriculture and the wealth generated by this sector (on the total GDP) shows that in Israel agriculture generates only $ 1,49 for every cubic meter of water, while the indistrial sector, for the same amount of water, generates $120 and the service sector $ 687,1. In particular the value added in agriculture top the GDP of israel has declined from 13% of the 1950s to 1.8% of year 2005, while at the same time the amount of irrigate agriculture (as opposed to rainfed) has increased from 1/3 to ½ of the total cultivated land from 1960s to 1990s (Beaumont, 2000). These two information combined show that water is not being used in an economic efficient way. Making these equations simple, practically Israel is using more than half of the water available for a sector that it is giving a very low economic return.

Hydrological water management information

"The outcome of cooperation between an elephant and a fly is not hard to predict."
(N. Chomsky)

The main water resources available to Israel and Palestine are the Mountain Aquifer (which is divided by Western, North Eastern and Eastern), the Coastal aquifer and the Jordan River (see Map3 and 5). The mountain aquifer is the groundwater resource that lies under both Israel and West Bank; although mainly in the West Bank (Map5). It represents the main water resource for Israel and the only resource for Palestine (since they cannot access the Jordan River).

The Mountain aquifer yields on average 700 mcm/y (million cubic meters/year) (The World Bank, 2009). The Coastal Aquifer which is located along the coastal plain of Israel and Gaza yields up to 450 mcm/y in Israel and 55 mcm/y in Gaza. The Jordan River is the main surface water resource available and it provides about 650 mcm/y of water to Israel and it is not

accessible to Palestinians: the surrounding area is in fact Israeli closed military area (see Map2).

Israel uses about 2,000 mcm/y of water, of which about a half comes from the shared resources of Jordan River and the western aquifer. Palestinians cannot access the Jordan River, because since the occupation of 1967 they were denied to approach the river and Israeli army controls the basin. Israel limits the availability of water from the mountain aquifer to Palestinians to 20% of its potentiality, although the aquifer lies largely in the West Bank. At the same time Israel overdraw by more than 50% of the potentiality of the aquifer (The World Bank, 2009), making an unsustainable use of this resource.

The Coastal Aquifer is the only source of water for Palestinians in Gaza, about 1.5 million people. The sustainable yield of the aquifer is 55 mcm/y but this would not be enough to meet the needs of the population. Therefore Palestinians in Gaza extract about 80-100 mcm/y, and this over extraction is causing deterioration of the aquifer and sewage infiltration. For this reason now 90-95% of the water in Gaza is polluted and unfit for drinking (AI, 2009; The World Bank, 2009).

In 1995 a set of agreements were signed between Israel and Palestine. These agreements, known as the Oslo accords did not have the result expected. They were believed be a cooperative attempt to regulate the distribution of water in an equitable manner between Israel and Palestine. Instead they showed the hegemony role of Israel and its dominance over Palestine (Selby, 2003). The Palestinian National Authority simply did not acquire the right to control the water resources in the West Bank, but only to manage a certain amount of water which was unequal and insufficient for Palestinians. The agreement institutionalized this unequal share of resources and the disparity of power between the two nations.

The Oslo Accords (Article 40; Israel Ministry of Foreign Affairs, 1995) allocated from the Mountain Aquifer, the only water resource for the West Bank, 20 per cent of the total yields to Palestinians, while Israel got the remaining 80 percent. Translated in numbers, from the total estimated potential of the Aquifer of 679 mcm/y, 483mcm/y were allocated to Israel and 118 mcm/y to Palestinians in the West Bank. The Oslo Accords contained no provision for the water from the Jordan River. Finally under the Article 40 of the Oslo II agreement "Israel recognizes the Palestinian water rights in the West Bank. These will be negotiated in the permanent-status negotiations and settled in the permanent-status agreement relating to the various water resources". Unfortunately so far these negotiations have not take place yet.

Water wars (?)

All this unequal distribution of water may lead to the conclusion that Israeli and Palestinians are indeed (or will) fighting over water. This concern was also raised in some of the statements made by political leaders. In 1985, the former Minister of Foreign Affairs of Egypt Boutros Boutros-Ghali claimed that: "Next war in our region [*Egypt*] will be fought over water, not over politics". A similar view was given by Ismail Serageldin in 1995, the World Bank former vice-president for Environmental and Sustainable Development who said that "if the wars of this century were fought over oil, the wars of the next century will be fought over water -- unless we change our approach to managing this precious and vital resource" (Spoth, 2009). Many authors followed these assumptions and underlined how "scarcities of renewable resources are already contributing to violent conflicts" (Homer-Dixon, 1994; Gleich 1993).

One school of thought in fact, argues that international water conflicts can actually occur as a consequence of domestic water events, such as internal disputes for water allocation for

different sectors, and have already occurred (Giordano et al., 2002). According to this theory, water issues have been the object of international agenda and agreements, as well as a cause for war. Because of the importance placed by the government over water among Middle Eastern countries , a large amount of resources have been committed to best exploit water supply (especially through irrigation technology), by investing in national research and development programs (Postel, 1999). At the same time two incidents of armed conflict between Syria and Israel in the 50s and 60s were caused by disagreement on proposed water development projects and the plans of the Arab League to divert water from Jordan river away from Israel has also been considered a factor of the outbreak of the 1967 war. Most of the water supply of Israel derives from the territory occupied consequently the 1967 war (Giordano et al., 2002). These are evidences that water supplies play an important role in the conflicts of the region (Gleick, 1993) and show that some of the agreement have been insufficient and ineffective (Kliot, 1994).

According to recent research, “water scarcity in Palestinian villages was one of the reasons for the intifada in the Occupied Territories” (Amery, 2002). The occupation of Israel has caused shortage of resources for Palestinians, first and foremost fresh-water. For these reasons, together with the lack of sovereign control, Palestinians cannot properly manage land and natural resources. This prevent the development and economic growth in the OPT (Amery, 2002; El-Atrash et al., 2008) giving the idea of the dimension of the problem and is consistent with the findings on the correlation between conflict and economic development. Also, representatives of the government of Egypt and Israel stated that national security includes wars over water and predict that “protracted water scarcity and thirst would 'doubtless' lead to war” (Amery, 2002).

A more specific literature focuses on the consequence of resource and environmental scarcity and the occurrence of conflict. Homer-Dixon (1994) argues that environmental scarcity,

in which he includes water, causes various type of internal conflict. This is due to a couple of reasons. First resource scarcity, especially water, will lead to conflicts because of a mechanism of simple-resource scarcity and disagreement on water allocation policy within one country. Another reason is 'resource capture' mechanism, whereby in case of shortage in quality and quantity of renewable resources, powerful groups within a society are encouraged to shift resource distribution in their favor, and poorer and weaker groups' claims to resources are opposed by these powerful groups. If these resources account for much of the economic growth and their scarcity causes economic losses, the deprived section of the population can use violent means to shift this balance if their claims are not satisfied. His third hypothesis is that scarcity causes large population movement which in turn causes "group identity" conflicts especially ethnic clashes (Homer-Dixon, 1994).

In the West Bank the difficult in accessing water is already causing shortage of food and unemployment (Selby, 2005; Podesta and Odgen, 2007). Seventy-five per cent of the water used in the ME is located in Iraq, Syria, Iran and Turkey and comes from few sources (mainly Tigris and Euphrates rivers).

As far as the general occurrence of war in the region, It is common to consider the ME region as more war prone than any other regions. Some research proves that this hypothesis is wrong. The main cause of civil war are economic, that is to say that poverty increase the chance of the outbreak of civil war (Collier & Hoeffler, 1998): by applying the model of Collier and Hoeffler (1998), it has been calculated that religion, social fractionalization and resource dependence are not significant. As opposed to the common belief, Islam and religious

fragmentation, when present (the region is quiet homogenous but there are conspicuous minorities of Shi'a, Muslims and Catholics), is not significant as well. Corruption and slow economic growth, instead, create not only a base for conflict but also influence the growth of political Islam (Sørli et al., 2003). From this perspective a good management of resources aimed at reducing poverty and leading to economic growth is the best mean for preventing conflict. Water "has become increasingly important for economic and agricultural development" (Gleick, 1989) in the Middle East, and when we talk about economic development we cannot ignore water availability.

The "other" israeli-palestinian conflict

"Peace is not merely the absence of war" (J. Nehru)

According to Ullman (1983), it is necessary to broaden the definition of national security. In his definition, national security includes threats, more or less immediate, to a citizenry. A threat to national security includes a threat that narrows the range of policy choices available to the country. This definition reflects the concern on citizens' security interests. Indirect threats include conflicts over territory and resources due to the scarcity from the supply side. He stresses the importance of a better management of resources and the use of substitutes, although he considers water as a non-renewable and non-replaceable resource. Despite of this, we are still far from a full understanding that societies are exposed to non-military threats and to address them at government level.

Often times, national security and conflicts are dealt with in terms of military security and interstate armed conflicts. In all the analysis presented about water and conflict, the approach taken is one of security of the survival of the state; the national security is intended as the

sovereignty over the land, the territory. Therefore, the threat is anything that may cause a loss of this sovereignty over land. Most of the literature in fact approaches the issue of natural resources, including water, in this term. In line with Ullman's view, Harris (2005) argues that "peace", especially nowadays cannot be defined as the absence of war. The lack of access to basic needs causes preventable deaths, vulnerability of states and people, just as much as armed conflicts do. Most of the preventable deaths worldwide are caused by the lack of access to resources, preventable diseases and poverty. In fact a certain resource management, use and access policy, can lead to sociopolitical conflict. She points out that conflict does not happen only at state level, rather it take place at different "scales", which include the people, the individual scale and their everyday life. The concepts of war and peace need a redefinition, in the light of the increasing globalization. Therefore she differentiates for example between "negative" and "positive" peace, where negative peace is the non presence of armed conflict, while the positive peace is a narrower concept indicating also the non presence of structural violence, unequal right entitlements and preventable diseases.

Starting from Ullman's and Harris's definition of national security and conflict I am presenting the "other" conflict between Israel and Palestine.

The tangible scarcity of water is surely hindering the process of economic development of Palestine as we can notice from the fact that agriculture (the sector where most of the water is allocated) has a relative high value added to the national GDP and gives jobs to a large percentage of the population (see figures above). At the same time there is another conflict taking place which involves the availability and use of water. This conflict goes beyond the armed war but has several consequences over the lives of an entire population, for their livelihood, welfare

and landscape as well.

Outside the official figure and the most “advertised” political conflict, there is what I call, the “other” conflict, another conflict going on in the area where Israel, with the territory it is illegally occupying, lies. Actually this conflict is between the peoples and not confined to the geographical space: Israelis in the unlawful settlement in the West Bank, as it can be easily imagined, are subject to different policies than the Palestinians.

The water supply to Palestinians does not depend only on the natural resources available on their land, but largely on the management, administration and policy of Israel, the occupying power, toward them. What I am trying to show is that the “other” conflict over water is not always shown in official documents. Beyond the official figures of water share, the treaties for (un)equal allocation, it is in the daily life of the population that we have to see the meaning and the consequence of this conflict. In order to measure how water is used by the population I looked at data and information provided by some (N)GOs, newspaper, reports, official and non speeches by leaders and oral testimonies. I had to rely on these data since, for the lack of time, and resource I could not personally do a field research to gather the data.

Israel controls and limits the amount of water available to Palestinians; this is done mainly through five strategies: unilateral actions, enacting law and military orders, setting policy and implementing control (Shuval and Dwiek, 2007). Since the occupation of the West Bank and Gaza in 1967, a number of Military orders were issued in order to control the access to resources by Palestinians in the Occupied Territories. Those orders apply only to Palestinians and not to Israeli settlers (AI, 2009). In particular the military orders nr. 92, nr.158 and nr.291 have given complete authority to the IDF (Israel Defense Force) over all water related issues, ruled that

Palestinians needed a permit to construct new water installation and annulled all previous land and water-related arrangements (The ODSG, 2010).

Consequences of restriction

Following the unequal distribution of water, it results that water consumption daily per capita in cubic meter (cm) is for Israeli 300, for Palestinians in the West Bank 70 and 80 for Palestinians in Gaza (most of which is polluted). The recommended daily amount of water consumption by the World Health Organization is 100 cm. These amounts are an average, but some Palestinians in rural communities have only 20 cm of water available (B'Tselem, 2008; AI, 2009; FAO, 2008)

The restriction to the access of water and the unbalanced distribution has consequences over the Palestinian population for their standard of living. Water restriction constraints agricultural and industrial development. Therefore it prevents a proper economic development. This loss in cost has been measured as about 10% on the GDP and 110,000 jobs. (The World Bank, 2009), and it is making Palestinians more and more economically dependent on Israel. The unequal distribution of water forces Palestinians to buy water which is extracted from the shared aquifer (which largely lies on the West Bank). The unbalance is present also in the method of selling water; in fact the water is sold at a different rate to Palestinians and to Israeli settlers. The latter pay US$0.40/cm for domestic water and $0.16/cm for agricultural uses water, while Palestinians pay a standard rate of $1.20 for piped supplies, for both domestic and agricultural purposes (Isaac J. & Selby J., 1996).

Since, as said before, water in excess in the West Bank, although figures prove that there could hardly be a *surplus* of water, cannot be transferred to Gaza, people in this territory can only

rely on the coastal aquifer as their water resource. This has led to an "over pumping" of water from the aquifer, that excess 50% of its sustainable capacity. The over extraction has caused seawater and sewage infiltration, rendering 90-95% of the water unsuitable for drinking. The aquifer for this reason is very saline and nitrate contaminated. In most part of Gaza the level of nitrate is higher than the minimum accepted by the World Health Organization (WHO). The high nitrate does not change the physical aspect of the water, which still looks as pure water, but has severe health consequence on health, especially in children (45% of the population in the Gaza Strip is below the age of 15; CIA, 2009) and can cause death (UNEP , 2009). The UN suggests that seawater desalination could provide more water in a more sustainable method, but this require financial and technological resources that Gaza cannot afford. (UNEP, 2009).

Israel is adopting an Ottoman Land Law, according to which, land that has not been cultivated for three years can be expropriated, and it is taking some of the land that Palestinians have not been cultivating because of the lack of water (AI, 2009)

Another practice of Israel that deprives Palestinians of water is the destructions of cisterns (AI, 2009, FAO, 2010). In order to cope with the scarcity of water, many Palestinians use to have rainwater harvesting cisterns. They collect water during the rainy seasons and store it for using in the dry season. About 150 – 200 Palestinians rural communities are not connected to water networks, therefore they highly depend on rainwater. They represent the 180,000 – 200,000 people who have no access to running water and live with a daily average of 20 cm of water per capita. The Israeli army is increasingly demolishing Palestinians rainwater harvesting cisterns. Because of the low income of most of Palestinians (which is due largerly because of poverty and unemployment as a consequence of Israeli restrictions of movement), they are forced to spend a large amount of their income, estimated being from 8 to 17% (Isaac J. et al.,

2010), but as much as 1/3 for some sources (AI, 2009), to buy water.

Some Palestinian villages, like Aqraba, which experience this lack of running water and are prevented from harvesting rainwater, neighbor Israeli settlements that use water to build swimming pools and fish farm. (AI, 2009). This is an example that preventing the access to water to Palestine is not only because of the scarcity of water, but for the plan of depriving Palestinians of water for their basic needs.

In the villages of Hadidiya and Humsa because Israeli has confiscated water tankers they used to fetch water, Palestinians have to travel several kilometers in order to buy water because the closest well controlled by Israel is not accessible to them. This well is in fact reserved to the nearby Israeli settlements, whose agricultural production is worth US $ 130 million and it is even exported, when Palestinians in Hadidiya and Humsa struggle to meet their food needs because of impossibility to access water.

The water conflict cannot be solved *sic and simpiciter* with an equal share of resources. Israeli policy is not one of the appropriation of water at the expenses of Palestinians, but of purposely denying water to them. This is clear when we look at the fact that the privation of water to Palestinians does not increase the amount of water allocated to Israel. The sharing arrangements that could be implemented, the redistribution of resources, it is not an effective tool to address the problem. Israel is acting as a regional hegemony, imposing its policy and enacting a war on a physical and psychological level of Palestinians people.

Israel has the capacity to adapt to the water stress through seawater desalination and virtual water, import of grain from abroad, while Palestine economy does not allow this, because

especially desalination is a too expensive solution. Moreover, the largest part of Palestine, the West Bank is landlocked and does not even have access to seawater. Notwithstanding the low economic outcome of the agricultural sector in Israel, against the large amount of water allocated to it, politicians still appeal to the public discourse of the significance of agriculture for Israel (Allan, 2002).

Israel was in fact found on the philosophy of spreading people on the ground. This has been accomplished through the settlements of Kibbuz and Moshav, some types of cooperative agricultural community. Agriculture is therefore embedded in the ideology of the Jewish State. Population should be educated about the fact that this is no longer the case and economy is not based anymore on agriculture (Beaumont, 2000).

Because of the advanced economy of Israel and the level of technology and copying strategies reached, it is clear to their leaders that it is not the case to consider water as a vital resource or even war over water. For example Peres, the Israel Prime Minister has been reported saying: "years ago it was thought that the main problem in the region was in the area of water, but today we have learned to desalinate water and it is no longer a scarce resource".
Israel can desalinate water for as little as 50 cents (Water Technology, 2010; European Jewish Press, 2005).

Conclusion

In this paper I have given a perspective of the Israeli – Palestinian conflict only from the point of view of the water and how this resource can be used as a tool for political and economic pressure. In the large context of a conflict that has several causes, I have only looked to why water is not a main cause of it and of the dispute over the occupation of the land, but

nevertheless, it is used by Israel to impose stress on the Palestinian population, to hinder their development and for disempowering them. This generates a conflict on the scale of the individual that affect Palestinians daily life.

From the information and data that I have found, it is possible to summarize the following findings. Israel has the economic ability of coping with the lack of water, by recurring to import of food from abroad, for example, and currently would be even more convenient to desalinate water rather than "extort" it from Palestine: Israeli water professionals have realized that manufacturing water will be much easier than negotiating it (Allan, 2002). The privation of water to Palestinians is not always compensated with a larger allocation to Israel, like in the example of the demolition of cisterns. Water is also sold at a different price, to Israeli and to Palestinians, leaving no doubt that there is a policy of discrimination and discouragement of Palestinian development. The intention of keeping the region underdeveloped and adopting a strategy of inducing stress on the population, it is part of a plan to exert the hegemonic power over the area.

With the limitation of space and resources that I had, I tried to show how water resources in Palestine and Israel are not the cause of the military conflicts that have occurred and that (hopefully not) may occur in the future. The other conflict, over water, is happening only as a consequence of the main political conflict for the appropriation of land and the intention of Israel to expand over more territory. An open armed conflict over water would not be convenient especially for Israel, for which water does not give an economic return which could compensate the cost of war. Israel has the economic and technological ability to meet its food needs for its population; especially trough the virtual water that enters the country through grain import.

The deliberate privation of water to Palestinians, can be connected to the political strategy

of exert the domination over the land. This strategy aims at hinder the development and consequently the political power of Palestinians, policy makers, diplomats and political leaders may want to consider the different scales of the conflicts, looking at the reasons underlying them, since they may all depend on the larger political conflict, therefore the international aid given to improve water management of Palestinians could not be sufficient without peace on state level. The water conflict could be only come to an end and the door of cooperation over water and equitable sharing open, whenever the (so called) Arab-Israeli conflict will turn to an enduring peace.

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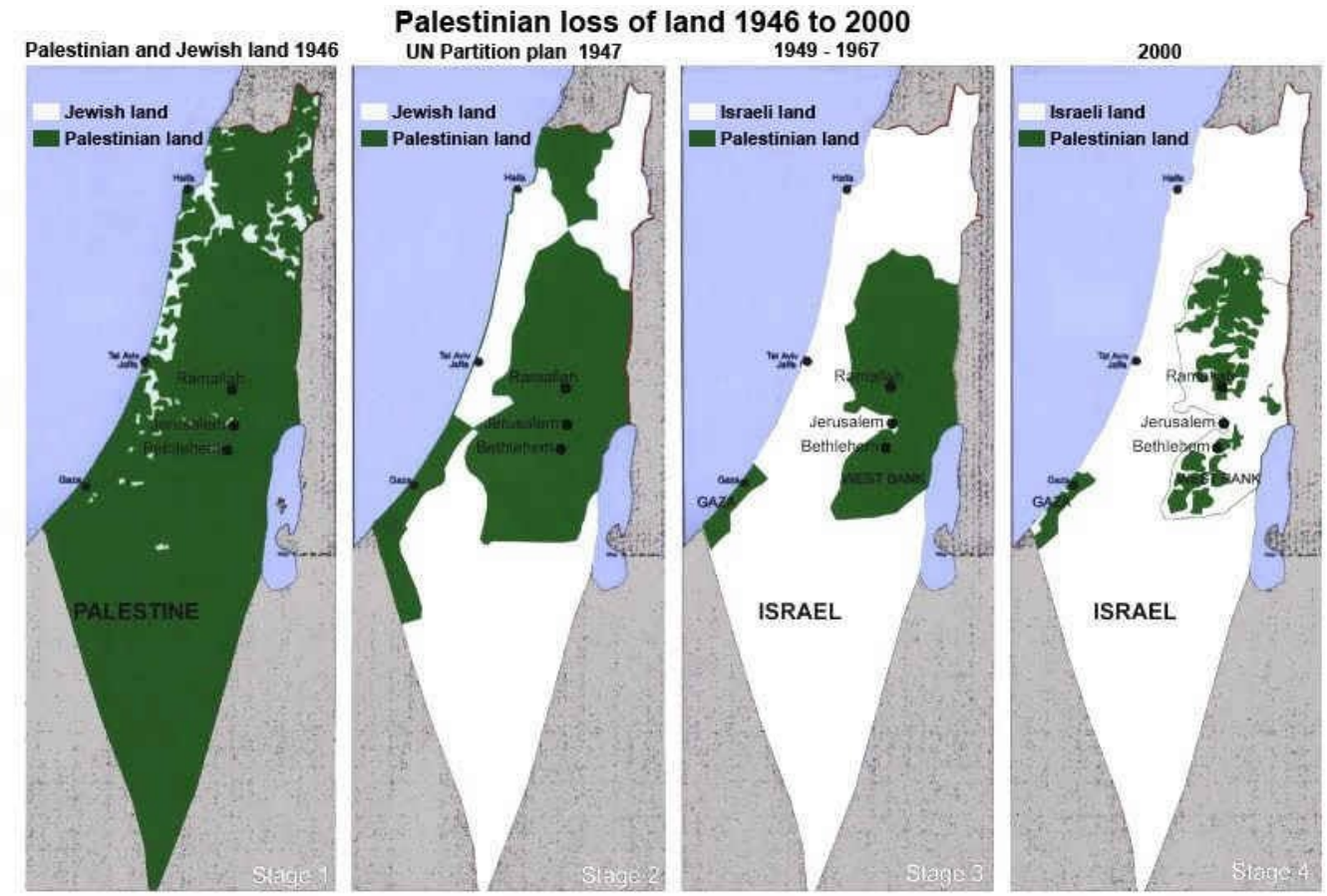
Appendices:
MAPS



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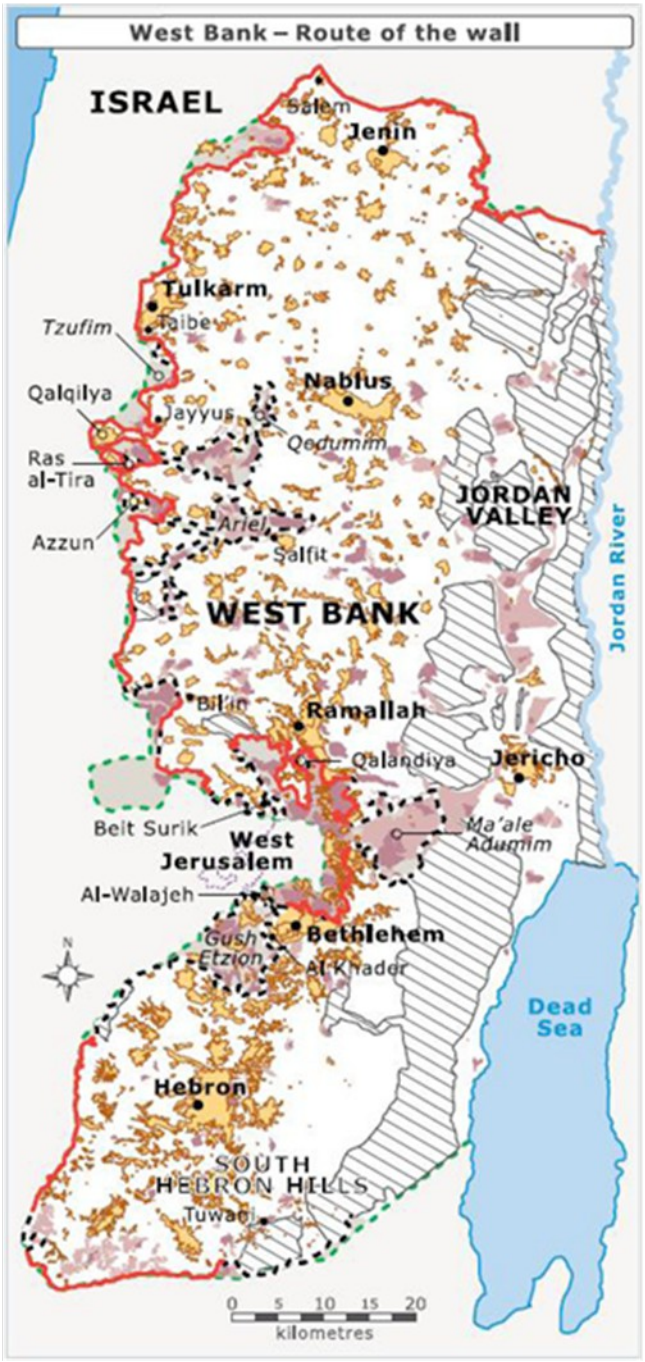
Map 1

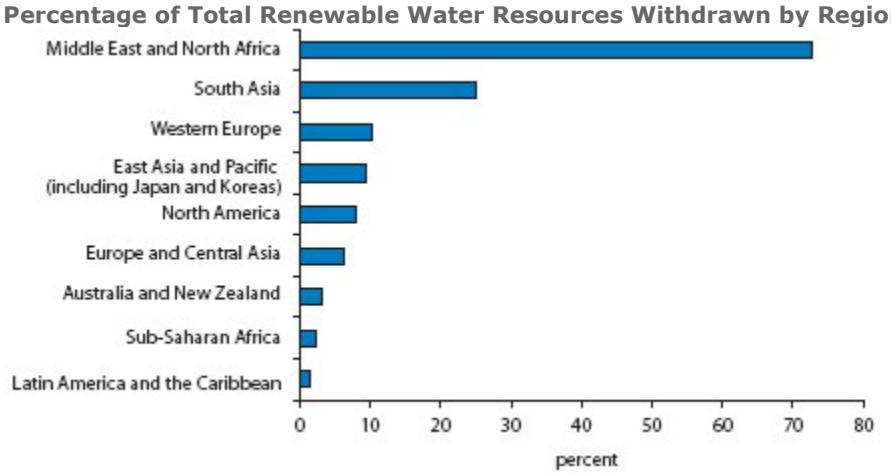


- West Bank, including East Jerusalem, occupied by Israel since June 1967
- 5,600km² total area: about 130km north-south and 65km east-west
- 200+ unlawful Israel settlements and "outposts"
- 550+ Israeli military checkpoints, blockades and obstacles
- 709km-fence/wall, 80 per cent of it on Palestinian land inside the West Bank

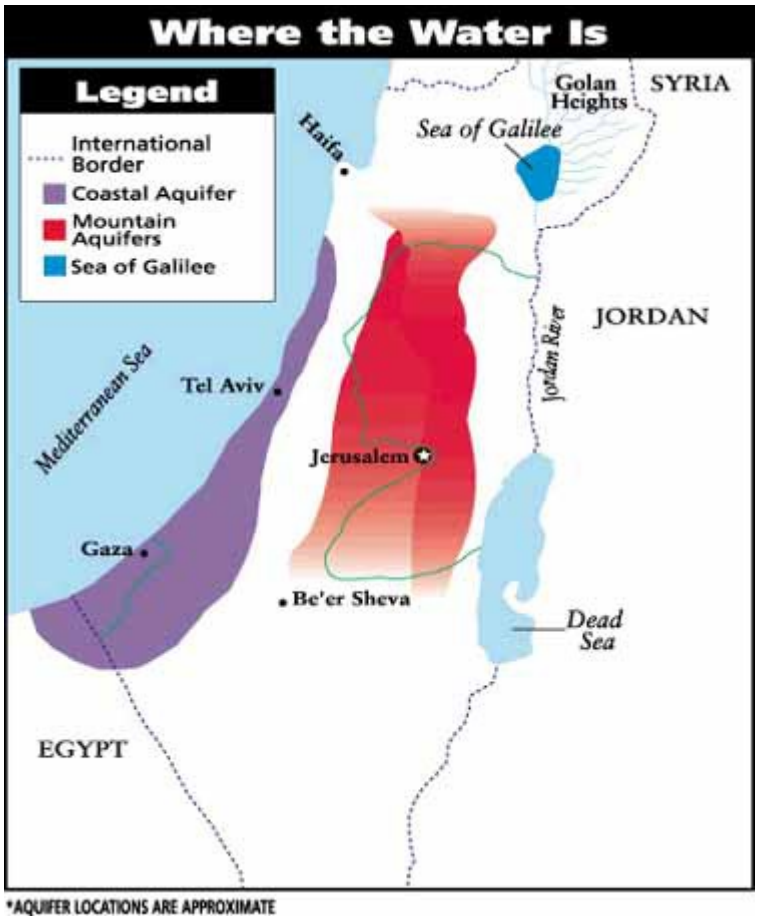
Map 2


SURFACE WATER IN PALESTINE
Jordan River Basin
Groundwater divide
Israeli National Water Carrier
Syria-Israel Cease-Fire Line, 1967
Quantities are in mcm (million cubic meters) per year
PASSIA
LEBANON
Litani River
Hasbani
Dan
Banias
Upper Jordan River
GOLAN HEIGHTS
Eastern Wadis (605) Total flow in Upper Jordan River
Used by Israel (130)
Flow into Tiberias (475)
(80) Hydrological Balance
(65)Diverted to Tiberias by Israel
(160) Used by Syria
Yarmouk River
(420) Total Flow
Haifa
Israeli National Water Carrier(420)
Tiberias
Israeli local use (90)
Salty Springs (40)
(90) Used by Jordan
(20) Israel transfers to Jordan in summer
(10) Desalinated water
Green Line
Jenin
Northern Aquifer
Tulkarem
River Jordan
Zarqa
Mediterranean Sea
Coastal Aquifer
Nablus
WEST BANK
Western Aquifer
Tel Aviv
Lower Jordan River
(115) Remaing as Brackish Water
JORDAN
Aquifer
Ramallah
Jericho
Jerusalem
Green Line
Mountain
Eastern Aquifer
Coastal Aquifer
Gaza
GAZA STRIP
Gaza Aquifer
Hebron
Dead Sea
Wadi Wala
Wadi Mujib
ISRAEL
Beersheba
0
20 km
Map: PASSIA, 2002

Map 3



Map 4. *Source: World Bank, 2007.*



Map 5

Source: FREEMAN CENTER FOR STRATEGIC STUDIES - http://www.freeman.org/