

**Research Thesis**

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**To what extent does the issue of water play a role in the  
Israel-Palestine conflict?**

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## Abstract

Mismanagement, occupation and overuse of already scarce water resources in the Middle East are increasingly becoming one of the main contributing factors towards conflict in this region. Most especially, in respect to the conflict between Israel and its neighbouring Arab countries. Usually conflict in this region is associated with religion, terrorism and oil, however, it is becoming gradually more apparent that one of the major driving forces behind heightened conflict in the Middle East is resource scarcity. Fresh water resources, in particular, are becoming a crucial aspect in the tension and any future resolution of the conflict.

Israel's need for securitising water is not a recent phenomenon and can even be traced back to before the Balfour Declaration. This need to achieve environmental security for its people, by occupying land and restricting Arab access to water is having devastating effects on water resources in the region. It's not only effecting the environment, the Palestinian population of the West Bank and Gaza strip *'are receiving well below the recommended 100 litres per capita daily recommended by the World Health Organisation (WHO).'* (Amnesty 2009: 4). This inequality of access to water is created and controlled by Israel, who uses it as a way of achieving security when, in fact, it is only likely to inflame widespread anger towards Israel and its policies. This could in turn increase the hostility towards Israel amongst Arabs and create greater sympathy for terrorist groups like Hezbollah and Hamas. Israel's quest for water security is essentially positioning them in further risk of conflict and even war.

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# Chapter 1 : Introduction

## 1.1 Rational

Fresh water is the most essential resource on the planet; fundamental to all ecological and societal activities, including food and energy production, industrial development, transportation and sanitation. However, fresh water resources are unevenly and unfairly distributed, and some regions of the world suffer from significant water-shortage.

Water-shortage can have a direct link to conflict, as access to basic resources can trigger violence as human populations increase, standards of living increase and environmental changes affect water-supply and create future uncertainty. Regions where water is scarce can often generate competition and conflict for limited resources; nations view access to water as a matter of national security. *'Issues of water security have played a role in regional instabilities.'* (Giordiano and Wolf 2002: 293).

One of the longest ongoing water disputes relating to resource scarcity and resource dependence is the Arab-Israeli conflict, especially in relation to the water resources in the Jordan River basin. More specifically, this study will focus on Israel's dependence on the subterranean water supply of occupied West Bank and its effects on the future prospect of a political agreement between Israel and the Palestinians.

The importance of this issue is under-researched; the continued occupation of the West Bank guarantees the State of Israel control over vital water resources that originate in the West Bank but are consumed in the most part by Israel. This is a non-negotiable prerequisite for the survival of a Jewish national homeland, a fundamental pledge of the Zionist movement. Concerns for economic viability of a Jewish state in arid Palestine drove the World Zionist Organization to be adamant that it was *"of vital importance not only to secure all water resources already feeding the country, but also to be able to conserve and*

*control them at their sources.*” (Kelly and Homer-Dixon 1995: 6)

This reveals the importance of water control to Israel, it exposes one of the major, if not the main reason as to why Israel will not surrender control over the territory. Israel’s survival is dependent on its occupation of the West Bank. Relinquishing control of the territory could potentially be an act of suicide for the State of Israel.

## **1.2 Methodology**

The overall objective of this research is to critically examine and analyse the extent of influence that water scarcity has on the Israel-Palestine conflict. This objective will be approached in a neutral, factual and academic basis, focusing on Israel’s need for control and security over water resources in comparison with oil resources. The objective can be broken into four sub-questions:

- What was the role of water in the early history of the Israel-Palestine conflict?
- What was the role of water in the more recent history of the Israel-Palestine conflict?
- How does the role of water compare with the more widely known influence of oil on the Israel-Palestine conflict?
- What are the remaining major issues in water management with regards to the Israel-Palestine conflict?

The dissertation starts with the literature review (chapter 2), which gives an overview of the core issues which surround the main research topic. It covers other relevant academic study on the subject, looking at the different angles in which it has been addressed and analysed. The literature review is split into four main sections:

‘Environmental Security’, ‘Human Security’, ‘Climate Change and Resource Scarcity’ and ‘The Middle East Conflict and International Politics.’ The first three of the four sections analyse different lenses through which the concept of security can be viewed and the final

section places the concept of security within context of the Israel-Palestine water conflict.

The third chapter is entitled: ‘History of the conflict 1917-1967’ and is split into three parts: ‘1917 and the Balfour Declaration’, ‘Declaration of the State of Israel 1948’ and ‘Arab –Israeli War 1967’. The main objective of this chapter is to answer the first sub-question: What was the role of water in the early history of the Israel-Palestine conflict? This chapter will provide a historical overview of the conflict during its first five decades and linking the key episodes during this period to the issue of water.

Recent History: The Conflict from 1973 onwards’ is the title of the fourth chapter which addresses the second sub-question: What was the role of water in the more recent history of the Israel-Palestine conflict? Like chapter two, it gives a historical overview of the conflict. However, it also analyses the role of water and oil more closely as they become increasingly more prominent features of the conflict. It is again split into three sections: ‘Yom Kippur War 1973-74 and Oil Embargo’, ‘1978 and 1982 Invasions of Lebanon’ and ‘The Peace Process of the 1990s- From Breakthrough to Breakdown’.

The title of chapter five is ‘Water Governance’. The purpose of this chapter is to give an overview and insight of the situation at present and analyse possible future implications. The sub-sections of this chapter are: ‘Current Overview’, ‘Sources of Water and ‘Water Management’. Chapter five also gives an introduction into the concept of ‘Water Governance’ and international developments in relation to water management issues. This chapter aims to answer the fourth sub-question by looking at how effective current water-management governance is in relation to achieving peace in the region.

The data collection methodology behind this study is, in the most part, based on secondary research and investigation undertaken by other academics, governmental departments, international agencies or NGOs. However, some first-hand research was conducted through a study visit to Israel and West Bank Palestine, including primary information from Joint Supervision and Enforcement Teams (JSETS) such as the Annual

Report 2007 from Applied Institute of Research- Jerusalem (ARIJ) and first-hand statistics from Lucy Shabonah: President of the Palestinian Central Bureau of Statistics (PCBS). Seminars, discussions and lectures with individuals and organisations working in the field of conciliation, mediation and research were also attended during the three week study visit to the region. Some of this information although not directly referenced within the dissertation has contributed to improved knowledge and a wider perspective of environmental security.

## Chapter 2 : Literature Review

There are three main angles from which this subject is addressed throughout the relevant literature researched and written; it can be analysed through a humanitarian lens, an environmental security lens and from a resource scarcity and climate change angle. This section aims to study each perspective using the appropriate academic literature. Firstly, by defining the concepts of each of the three approaches- which are all relatively new paradigms; and secondly, by examining the relevance of these concepts to the topic in question. Only after this can we review the literature on ‘the Arab-Israeli conflict’ and international politics and also touch upon the neo-Marxist perspective which questions the role of security altogether as a key factor in the Arab-Israeli conflict.

### 2.1 Environmental Security

*“Environmental security implies a freedom from environmental threats that can contribute to instability and outbreak in conflict.”* (Liotta et al. 2007: 217). The need for Israeli environmental security is seen as one of, if not the most important factor, in the foundations that the State of Israel is built upon. Environmental security is a relatively new concept, security, has conventionally been recognized through territorially defined terms within state boundaries. Environmental security is ordinarily *‘concerned with intentional physical (mainly military) threats to the integrity and independence of the sovereign state.’* (Westing 1989: 6).

However, developments in political literature on the topic have broadened the view of security since the late 1980s in relation to the actual definition of security and how it can be achieved. According to academic Simon Dalby *‘environmental concerns have been an important part of the discussions of global security’* (Dalby cited in Westing 1989: 3). He goes on to explain that under the recently labelled concept of ‘environmental security’ are

the developments of new global dangers as a result of ‘*access to scarce resources*’ (Dalby cited in Westing 1989: 134), such as water. This has subsequently resulted in an increase in academic research conducted in this area: ‘*environmental themes are now part of the calculus of international politics and part of the scholarly debates in international relations.*’ (Myers 2002: 610).

There are many critiques against the concept of ‘environmental security’, especially from a Realist perspective. The main argument being that security is of central importance to the state and, environmental issues can never be resolved as they transcend borders and conflict with the state’s interests. Due to the anarchic lens in which Realists view international relations the two terms clash with one another and cannot exist within one concept. “*It is analytically misleading to think of environmental degradation as a national security threat, because the traditional focus of national security—interstate violence—has little in common with either environmental problems or solutions.*” (Deudney 1995: 47).

Despite the criticism, environmental security is now becoming a widely recognised concept within the United Nations (UN) and NATO. Both institutions are recognising the link between resource scarcity and conflict as a major issue in the international spectrum which needs to be addressed. ‘*The Alliance is looking closely at how to best address environmental risks to security in general as well as those that directly impact military activities. For example, environmental factors can affect energy supplies to both populations and military operations, making energy security a major topic of concern.*’ (NATO 2010).

Although the concept remains a debated one, especially over intricate details, there is a general consensus on the basic notion of environmental security being defined as the ‘*relation between the environment and the security of humans and nature*’ (Kelly and Homer-Dixon 1999: 6). The national security of individual states is increasingly dependent on the environmental aspect of security, which is itself, transboundary and therefore more

fragile and hard for states to manage, due to the lack of authority and sovereignty in global governance. Also, inter-state tensions over shared resources, such as water, can often cause hostility between countries, particularly in areas of the world where natural assets are especially scarce.

Most literature on the issue, despite the angle from which it is written comes to a similar conclusion; the paramount significance of environmental security and the reality that Israel's very existence is dependent on the future of their control over water resources in the occupied West Bank territories.

## **2.2 Human Security**

*“Human security is the latest in a long line of neologisms.... that encourage policy-makers and scholars to think about international security as something more than the military defence of state interests and territory.”* (Paris 2006: 87). The concept of ‘human security’, like ‘environmental security’, is a relatively new concept, and again the definitions can vary across literature. However there remains one common belief throughout the different formulations; the emphasis on the welfare of ordinary people. Human security stems from human rights and can be defined within the framework of the ‘Declaration of Human Rights’ which was adopted by the United Nations Assembly in 1948 arising directly from the Second World War. *“(Human security) is, in essence, an effort to construct a global society where the safety of the individual is at the centre of the international priorities and a motivating force for international action; where international human rights standards and the rule of law are advanced and woven into a coherent web protecting the individual; where those who violate these standards are held fully accountable; and where our global, regional and bilateral institutions – present and future – are built and equipped to enhance and enforce these standards.”* (Oberleitner 2002: 4)

The notion of human security could be described as a reaction to non-traditional threats to security, the example used most commonly within the literature is the terrorist attacks of 9/11. *“The events of September 11, 2001 have sharpened the debate over the meaning of being secure.”* (Liotta et al. 2007: 5).

However, it is clear that some literature written from a human security perspective is over focused upon the Palestinian population of the West Bank e.g. Palestine Solidarity Campaign’s ‘Environmental Factsheet’ which states: *‘They [Israel] have prevented Palestinians sinking any new wells, while allowing the illegal settlements a water supply that provides them with swimming pools and lawn-sprinklers.’* (PSC, 2009). Although this statement may hold some truth, this literature often contains too much partiality and spin on words and facts for it to be analysed too seriously. Another example of this style of literature which focuses centrally on the human security aspect of the issue is Amnesty International’s article entitled *‘Troubled Waters- Palestinians denied fair access to water’*.

### **2.3 Climate Change and Resource Scarcity**

There are many links between environmental and human security on a basic level, for example: lack of clean water resources affects the welfare of people. *“Environmental Security has always required attention to non-traditional threats linked closely with social and economic well-being...2.6 billion lack proper sanitation, 1.2 billion lack safe drinking water...”* (Liotta et al. 2007: 5). This is because resource scarcity can have direct adverse effects on both environmental security and human security. However, it is important to differentiate between types of resources and the effects that a shortage may have on security. For example, a lack of water will directly affect society first and the economy second. Paradoxically, oil scarcity will affect the economy first and society second. *“People often associate the Middle East with oil. But in the region’s cities, villages and farms, access to a different source is becoming problematic: water.”* (Edelstein 2010).

*'Environmental change is only one of three main sources of scarcity of renewable resources; the others are population growth and unequal social distribution of resources.'* (Homer-Dixon 1994: 8). Although resources such as water and oil have seldom been the single root of conflict, these resources are increasing in value in many regions but especially the Middle East and thus the likelihood of resource conflict is on the increase. In this region all three scarcity boxes as outlined by Homer-Dixon: there is the problem of growing populations, especially in this area due to the high influx of Jewish immigrants, unequal access to natural resources and the new danger posed by 'climate change'. *"Global climate change will affect water availability in many ways."* (Gleick 1993:96).

Nonetheless, the effects of climate change are unpredictable as we may not know precisely to what extent it will affect resources. The processes associated with oil are claimed to be contributing to the effects of climate change with the greenhouse gases that they omit, whereas it is believed that fresh-water resources are affected at the other side (especially in arid parts of the world such as the Middle East) by climate change. The scientific evidence on the causes of climate change is strengthening all the time. In particular, scientists are now able to attach probabilities to the temperature outcomes and impacts on the natural environments and also now understand much more about the potential for dynamic feedbacks that have in previous times of climate change, strongly amplified the underlying physical processes. Food and water security is a key issue in relation to climate change. As mentioned previously, the hardest hit areas are generally those countries of the global south who, already suffer from food and water shortages.

Literature on this issue recognises that water resources in this region pose a serious security dilemma both human and environmental. The Israeli public have been made acutely aware of its nation's dependence on water resources. However, there is no conservation of water for future generations, water quality is constantly deteriorating and part of the damage is irreversible; the restoration of reversible damage will be long, difficult

and expensive. Most literature also touches on the subject of climate change as a future threat which pressurises Israel's water system by increasing temperatures, evaporation rates and changing rainfall patterns.

## **2.4 The Middle East Conflict and International Politics**

The concern raised throughout the research on this subject is not merely an academic one. Most writers stress the importance of water as a key factor in Israeli security: '*Where water is scarce, competition for limited supplies can lead nations to see access to water as a matter of national security.*' (Gleick 1993: 79). The environmental security of Israel is a recurrent theme in academic literature: '*Since the Arab-Israeli War of June 1967, the continued occupation of the West Bank has remained, for the most part, basic to the official rhetoric with regard to the security of the state*' (Lowi 1993: 124).

Academic and scientific literature on the subject matter include articles such as that by Giordano and Wolf entitled '*The Geography of Water Conflict and Cooperation: Internal Pressures and International Manifestations*' which includes a case study of Israel that discusses Israel's mismanagement of water supplies within its own borders but also analyses the impact of volatile relations with the surrounding Arab populations; this includes the Palestinian West Bank inhabitants. '*With rising demand and significant water supply constraints, disputes between Israel and its co-riparian neighbours over water have not been an uncommon occurrence.*' (Giordano and Wolf 2002: 295). They also go on to develop this point further, arguing that the water conflict between Israel and the Arab populations is intrinsic to the broader issues in relations in the area: '*While territorial issues lie at the heart of Arab-Israeli conflict, notable connections to water exist.*' (Giordano and Wolf 2002: 295). This point is central to the aim of this dissertation and is supported further in many other articles of a similar nature such as '*Bridging the Divide: Transboundary Resource Disputes and the Case of West Bank Water*' written by Miriam

Lowi who focuses on *'Israel's dependence on the subterranean water supply of the West Bank and its effects on the prospects for a political settlement in the region.'* (Lowi 1993: 114). Articles such as these are written in the academic style in which this dissertation's research and findings will be predominantly approached, not only in content, but also in the technique of how this question is described, investigated and analysed.

There is one other notable perspective from which this issue can be viewed which is completely different from all others. With a neo-Marxist theoretical underpinning, popular academics such as Noam Chomsky and Naomi Klein claim that Israel is completely neo-conservative in its interests; the economy is the driving force behind all government actions. From this perspective, security is not the principal interest behind the water conflict. Israel's economy is built upon homeland security technologies and it therefore serves them to be involved in constant conflict with the surrounding Arab populations; their existence relies on it. Therefore, their need for secure water resources and their justification of being involved in conflicts as a result, is not driven by environmental security, but by economic interests. *"Israel's political situation is disastrous, but its economy has never been stronger, with 2007 growth rates rivalling those of China and India... Israel has crafted an economy that expands markedly in direct response to escalating violence."* (Klein 2007: 433). Klein states that Israel is currently developing the I.D. card system that is planned to be introduced into the UK (a multi-billion dollar contract) alongside developing most modern surveillance and network systems used in the majority of airports worldwide. Israel is *'the most tech-dependent economy in the world.'* (Klein 2007: 434). They rely on their security and military technology to deter other states from diverting water; they also rely on a constant conflict and threat from neighbouring states and Palestinian populations in the West Bank and Gaza to sustain their economy which is greatly dependent on homeland security technologies. *"United Nations observers believed that Israeli actions frequently violated UN agreements and were intended to provoke*

*retaliation and justify their accusations of Arab hostility.* (Smith 2007: 409).

To gain a true insight into the state and nature of the current relations between Israel and Palestine, it is essential to analyse the history of the conflict from when tensions began to emerge between the Jewish and Arab populations. Chapter three aims to do exactly this by focusing on the emergence of conflict and the issue of trans-boundary control over water and oil and addressed the first sub-question: What was the role of water in the early history of the Israel-Palestine conflict?

### **Chapter 3 : History of the Conflict 1917-1967**

One of the longest ongoing water disputes relating to resource scarcity and resource dependence is the Arab-Israeli conflict, especially in relation to the water resources in the Jordan River basin. It is only, however, over the last two decades that it has become top priority of the environmental security agenda of the Israeli government. This conflict between the Jewish and Arab populations of the Middle East has lasted more than a century and countless historical commentaries have been written. The conflict began in the mid-nineteenth century when inhabitants of Ottoman Palestine and the Jews of Eastern Europe began to consider themselves members of national communities. From this time onwards, the conflict has developed and become more complex.

In order to prove the importance that the issue of water plays in the conflict, it is useful to compare it with another natural resource which has been linked to political tensions between the Arabs and Israelis: Oil. The issue of oil in the Middle East has played a key role in the Peace Process between Israel and Palestine as the National Security of any state is dependent on this commodity and the products it produces. *'Oil is one of the most important commodities in the World's economy. Oil is the "engine" of the modern world.'* (Alexander 2004: 6). This chapter will therefore also focus on the issue of oil as a key factor in the Peace Process as a way to prove that water has a greater importance in the historical development of the conflict and therefore answer the first sub-question: What was the role of water in the early history of the Israel-Palestine conflict?

This chapter will focus on the early part of the conflict from an environmental perspective, as aspects of environmental policy were viewed crucial during the many historical stages of the conflict. The key stages that will be examined are the 1917 signing of the Balfour declaration, the 1948 declaration of the State of Israel and Arab-Israeli War 1967.

### 3.1 1917 and the Balfour Declaration

Theodor Herzl was a Jewish journalist living in Austria and Hungary in 1896 when he began to assert the idea of a Jewish State to be established in Palestine and went on to found what became the World Zionist Organisation. The Zionist movement gained momentum and by the end of the Great War, the United Kingdom had the British Mandate for Palestine and they used this mandate to implement the Balfour declaration which was written in 1917 and stated: "*His Majesty's Government view with favour the establishment in Palestine of a national home for the Jewish people, and will use their best endeavours to facilitate the achievement of this object, it being clearly understood that nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine, or the rights and political status enjoyed by Jews in any other country*".

(Gelvin 2005: 46). It was only a statement of British Policy, but it became legally relevant when it was written into the British Mandate for Palestine by the League of Nations. This is where the root of the issue began as from then onwards there was a large influx of Jews. Many of these immigrants were survivors of the Holocaust and were promised '*A land without a people for a people without a land*'. (Weizman cited in Muir 2008: 55).

However, it was not a land without a people and the Arab population expressed disapproval in November 1918 at first anniversary celebrations of the Balfour Declaration. They felt betrayed by the British, with whom they had sided during World War 1 in the hope of gaining freedom from the Ottoman Empire and forming an independent Arab state covering all Arab areas of the Ottoman Empire. Both ethnic groups were filled with hope of a new and peaceful beginning for their people, however these aspirations were shattered by their hopes for their respective homelands clashing with each other; they felt disenchanted by the reality of the situation. '*Palestine was not desolate and all the land available for cultivation was already being worked by the indigenous Arab population.*' (Finkelstein

2003: 95).

The issue of water security has also been at the heart of the peace process from the start. *'Even before the Establishment of Israel, Zionists viewed access to water resources as a necessary component for the long-term visibility of a Jewish state.'* (Giordano and Wolf 2002: 295). The World Zionist Organisation (WZO) insisted from the very start, for example at the 1919 Paris Peace Conference, that the Jewish state should control not only the water resources designated to them under the British Mandate of Palestine but also the source from which they flow. *'With that in mind, the Organisation submitted a frontier claim to the conference that included the whole of the Jordan River basin and the headwaters, as well as the Litani River'*. (Lowi 1993: 123).

### **3.2 Declaration of the State of Israel 1948**

Since the end of the Second World War every [US] president has become *'embroiled in the complex diplomacy surrounding the Arab-Israel conflict.'* (Quandt 2001: 1). The dispute has been at the top of many countries' political agendas for many decades, with many failing efforts towards achieving peace. West Bank Palestine has seen intense conflict especially since the establishment of Israel in 1948, at which point it was made unmistakably clear that *'the Jordan River is an integral part of the ongoing conflict.'* (Gleick 1993: 85).

The declaration of the State of Israel was a result of the United Nations Partition Plan for Palestine which was a resolution adopted on the 29<sup>th</sup> November 1947; it recommended the termination of the British Mandate for Palestine and the partition of the territory into two states; one Arab and one Jewish. The UN resolution outlined an economic strategy to create a union between these two states which included an integrated water policy to ensure peace between the two sides over the subject of this amenity, however, only selected parts of the UN resolution were adopted and recognised, mainly on behalf of

Palestinian leaders, as the proposed plan was initially accepted by the leaders of the Jewish community; *'the Arabs rejected a United Nations plan for Palestine'*. (Brown 2001). There were a couple of minor exceptions e.g. the National Liberation League in Palestine and emir Abdullah of Transjordan). The passing of the UN resolution was blamed by many as the cause of the 1947-1948 Civil War where Israel was under attack from its surrounding Arab neighbours. Israel had the financial and political support of the USA and therefore managed to defeat the invading forces and grab significant chunks of UN designated Palestinian land.

There existed no plans for a peaceful transition of ruling authority to another administration when the British voiced its plan for withdrawing from Palestine on the 15<sup>th</sup> May 1948. *'The British refused to hand over territory or authority to any successor.'* (Gleick 1993: 97). One day before the withdrawal, the Jewish people within Palestine announced its Declaration of Independence as the State of Israel. This caused five of the surrounding Arab nations (Syria, Lebanon, Iraq, Jordan and Egypt) to invade Israel and began the first of many wars in this area known as the Arab-Israel War 1948 (or the War of Independence for Israelis).

This Declaration of Independence was very carefully planned out and accompanied by the 1948 Hays Plan which was developed from the earlier Lowdermilk Plan of 1943-1944. It outlined land and agriculture as being of central importance to the future survival of the State of Israel- politically, economically and spiritually. *'The Hays Plan is credited with making the first proposal for the 'Palestine Water Carrier' - a project rejected outright by co-riparians Syria and Jordan for its aspirations to divert part of the Upper Jordan River and pump it out of the basin into the Negev desert.'* (Zeitoun 2008: 66). The issue of water control was an integral part in the Arab-Israeli War 1948. It was won by Israel who immediately implemented the Hays Plan by building the 'Israel National Water Carrier' (NWC). The year of 1948 marks Israeli Independence with most of the British Mandate

becoming officially part of the newly-formed State, whilst paradoxically marking Palestinian 'Nakba' (tragedy); when Palestine West Bank became henceforth administered by Jordan and Gaza by Egypt.

Although water was considered an important component of security to the newly established state at this stage, oil was also seen as a key commodity: *'The State of Israel from its very inception in 1948, considered the supply of oil to be of greatest importance.'* (Alexander 2004: 27). This is because Israel does not have access to any other sources of energy e.g. coal, nuclear (theoretically), etc. Therefore, the State's dependence on a regular supply of oil is of crucial importance.

### **3.3 Arab-Israeli War 1967**

The period between 1948 and 1967 is one of the most turbulent and chaotic, *characterised by rapid development on the Israeli side, minimal development of the Palestinian side, and clashing Arab and Israeli strategies to secure shares of the Jordan River system.'* (Zeitoun 2008: 66). There was significant insecurity on the Israeli side, despite tripling groundwater resources by identifying the most accessible (mainly groundwater found in aquifers) most of which were well within the borders of neighbouring states Syria, Lebanon and Jordan. These actions were viewed as outright theft by those Arab countries and Israel's NWC was resisted politically by Syria. After being threatened by US sanctions the intake was subsequently diverted to a much lower point on the shore of Lake Tiberias, albeit still successfully completed. Jordan and Syria also made strenuous attempts to implement ambitious water schemes as there was an urgent need to provide adequate levels of water to the 700,000 displaced Palestinian refugees, especially those who fled across the border to Jordan.

*'The hydropolitical tensions that occurred during this decade [1960s] eventually led to the well-documented mediation efforts of US envoy Eric Johnston, known as 'The*

*Johnston Plan*, and-notably- to the plan's demise.' (Zeitoun 2008: 68). The conflict heightened when the PLO directly attacked the NWC in 1965 followed by Syrian attempts to divert the Hasbani water flow away from the Upper Jordan River which the Israel Air Force immediately responded to by destroying their newly constructed water carrier.

Although the Arab-Israeli War 1967 is also referred to as the 'War over Water' by many including academic John Cooley who states: '*In 1967 Israel went to war against Syria, and Syria's ally, Egypt, partly because the Arabs had unsuccessfully tried to divert into Arab rivers Jordan headwaters that feed Israel.*' (Cooley 1984: 1). Israel successfully attained control over both shores of the Upper Jordan Headwaters along with Syria's Baniyas River as a result of the war.

Another important driving-force behind the Arab-Israeli War 1967 was the issue of oil- another natural resource essential to increase Israel's sense of security. The Sinai Peninsula of Egypt, West Bank Palestine and Syrian Golan Heights were captured also and Israel tripled in size over six short days. Although oil imports to Israel were barricaded during the Six-Day War and Arab states such as Saudi Arabia and Iraq boycotted Britain and the US (supporters of Israel) by cancelling oil contracts, Israel benefitted in the long term as it provided an opportunity for oil exploration in the Suez Canal.

The battle of importance between oil and water took place from the very beginning of the conflict, albeit in the background of the conflict. However, the issue of resource scarcity has become a predominant feature at the forefront of Arab-Israeli relations; identified as one of the main contributing factors of heightened tensions between the two sides.

## **Chapter 4 : Recent History: The Conflict from 1973 Onwards**

This chapter will analyse the recent history of the conflict with a sharper focus on water and oil and the transition of oil-focused environmental security in the 1960s and 1970s to an increased awareness of water as the commodity of central importance. *"Water's own role in prompting unrest has so far been relatively limited, but that is unlikely to hold. Future water scarcity will be much more permanent than past shortages, and the techniques governments have used in responding to past disturbances may not be enough."* (Alterman cited by Vidal 2011).

This chapter will be split into two sections: the first will study the Yom Kippur War and Oil Embargo in 1973-1974 and then move on to the 1978 and 1982 Invasions of Lebanon and finishing with the 1990s period of Israeli Hegemony.

### **4.1 Yom Kippur War 1973-74 and Oil Embargo**

1973 is a year remembered for the 'Oil Crisis' which began as a result of Organisation of Arab Petroleum Exporting Countries (OAPEC) deciding to declare an oil embargo, boycotting the US and its Western European allies as a result of US President Nixon's decision to support and supply weapons to the Israeli military during the Yom Kippur War.

The Yom Kippur War could itself also be linked to Oil as it was instigated by Egypt and Syria who launched a surprise assault on Israel on the Holiest day of the Jewish Calendar, Yom Kippur to regain control over Israeli-held Syrian Golan Heights and the Egyptian Sinai Peninsula which had both been occupied since the 1967 Arab-Israeli war. The occupation of the Sinai Peninsula had given Israel both greater control of and opportunities in oil and gas exploration in the Suez Canal and this was one of the main

driving forces behind Egypt's attempts to regain control over the region. *'Since shortly after the 1967 Middle East War, Israel has sought to reduce its dependence on imported oil by exploiting resources of captured Egyptian territory.'* (Clagett and Johnston 1978: 558).

This conflict has massive international repercussions. It provoked the Cold War tension between the United States and the Soviet Union further due to each of them resupplying their Israeli and Arab allies respectively. Other Western European states that were affected by the oil embargo saw their situation as a result of US actions and this caused these European countries and Japan to disassociate themselves from US Middle East policy; it also created a deep rift within NATO. It was only then that the US pressured Israel to withdraw from the Sinai Peninsula and parts of the Golan Heights.

The Oil Embargo resulting of the Yom Kippur War *'signalled a new factor enhancing inter-Arab cooperation and giving the Arabs an improved bargaining position.'* (Caplan 2010: 152). It didn't however, stop Israel's oil exploration in the Gulf of Suez shortly after the conflict in 1975 which again heightened the tension between Israel and its Arab neighbours. *'The question of whether Israel may rightfully exploit the oil resources came sharply into focus.'* (Clagett and Johnston 1978: 558).

Although oil was at the forefront of the conflict, the issue of water was still lurking in the background. Water wasn't seen as important during the 1960s and 1970s for two main reasons: firstly, as the threat of running out wasn't so urgent there was no need to panic, the population of Israel being low enough to sustain with only around 3 million Jews and Arabs living in Israel, including the West Bank and Gaza territories (compared with almost 10 million today); secondly, oil was seen as the number one issue during this period of industrial and commercial development in the Middle East. *'Automobiles, aeroplanes, power stations- all need oil to function... From the end of the Six-Day War the Israeli government assigned it highest priority.'* (Alexander 2004: 3).

However, the fact that Israel returned the Sinai Peninsula to Egypt but only gave

100 square kilometres out of the 1,250 square kilometres of the occupied Golan Heights back to Syria suggests that oil is not so far up the agenda at this point compared to water. This is due to *'the two waterways located to the immediate west of the Golan Heights: the Jordan River and Lake Tiberias.'* (Hof 1997: 130) along with Golan Heights surface water. These actions would suggest that water is viewed as more vital to Israel than oil, even during this period of development where oil was seen to be at the top of the agenda *'second to national defence issues.'* (Alexander 2004: 3).

#### **4.2 1978 and 1982 Invasions of Lebanon**

Although Israel's 1978 invasion of Lebanon was supposedly because Hezbollah had captured and imprisoned two IDF soldiers who had violated the Lebanese border it was generally perceived that Israel's actions were provoked by water security. They had their eyes set on the Litani River which would augment Israel's annual water supply by up to 800million cubic meters (around 40% of consumption at the time). This water was also of a much higher quality, having significantly lower saline levels. *'Israeli occupation of the water-rich area in southern Lebanon raises questions about Israel's hydrological imperative.'* (Amery 1993: 229). The Litani River has been of interest to Israel since 1905 when it was first suggested that Litani water should be diverted southward into the Hasbani River by an engineer as he concluded that *'the waters of the Jordan basin would be insufficient for the future needs of Palestine.'* (Saleh cited in Amery 1993: 229).

*'The hydrostrategic significance of southern Lebanon is rarely considered as an explanation of current Israeli occupation of the security zone there.'* (Amery 1993: 229). Following Israel's invasion in 1978, the zone was unilaterally occupied as troops remained there declaring hegemonic authority. Shortly after the invasion, the Israeli army declared that drilling wells was hereby prohibited. After the second invasion in 1982, Israeli engineers began planning the building of a diversion tunnel to be situated at the bend of the

river and *'confiscated hydrographical charts and technical documents of the river and its installations from the Litani Water Authority'* (Cooley cited in Amery 1993: 229). Since then there have been reports of water siphoning from the river into the Jordan River Basin.

The issue of oil during this period was relatively unreported; water had by this time taken precedence. Most oil in Israel was imported from the US which is more expensive than producing its own, but steps were being made towards producing oil in Israel and oil exploration and drilling in the Suez Gulf was still being undertaken at this point by the Israel National Oil Company and *'a special Energy Ministry was established'* (Alexander 2004: 36) to deal with the steady growth of oil production.

#### **4.3 The Peace Process of the 1990s- From Breakthrough to Breakdown**

1992 was a year of realisation: with both sides put under pressure by the international community. Israel and its surrounding Arab neighbours began to understand that many areas of the conflict needed to be resolved for the benefit of both nations. *'At the second round of Middle East peace talks, held in Moscow in January 1992, the participants agreed to the formation of working groups on five substantive issues of mutual concern- refugees, the environment, economic development, arms control, and water resources.'* (Lowi 1993: 113). The water resources working group met many times but no clear agreement was established. The only consensus was that there was clearly not enough water in the region due to the growth in consumption demand and the deterioration of water quality.

However, in 1994 and 1995 *'Israel signed two bilateral peace agreements, both of which included substantial provisions concerning shared water.'* (Giordiano and Wolf 2002: 295). The 1994 agreement was a significant step towards progress and peace; Israel and Jordan cooperated over areas of enhancing water supplies and improving water quality

and agreed to allocate shared surface and groundwater supplies. The PLO and Israel also sign the momentous 'Oslo 2' agreement in Washington 1995 which sets out the framework for a two-state solution. *'Israelis and Palestinians began to see the future in terms of partitioning the area of former Mandatory Palestine between themselves.'* (Caplan 2010: 204).

The majority of narratives which analyse the effects of the Oslo Accords and agreements characterise them as the breakthrough moments of the Middle East 'peace process' particularly in relation to water governance: *'water relations were transformed by the Oslo Process... with the signing of the Initial Oslo Accords opening a new era'* (Selby 2003: 121). Management of water systems and supplies, monitoring of water resources and development of new supplies were all major features of the Oslo Accords.

The Oslo and Cairo agreements of 1994 and 1995 followed by the first Palestinian elections all took place *'in a moment of optimism in the Israeli-Palestinian peace process, and many Palestinians believed that the government they were electing would be the first of an Independent Palestinian state.'* (Selby 2003: 121).

During this period, Israel's shift towards creating peace in the region suggests that political powers are beginning to realise the extent of the effect that water shortage in the region is having on state security. Much external pressure was placed on Israel to adopt less aggressive tactics in securing environmental security. US Secretary of State James Baker *'used diplomatic and economic pressure to break taboos about Arabs and Israelis never appearing in the same room or at the same negotiating table.'* (Caplan 2010: 202).

A publication about wetland conservation from the official Israel Ministry of the Environment published in 1999 states that the irresponsible management of the water sector over the past few decades has undermined Israeli security: it has *'Destroyed Israel's future water reserves and caused extreme damage to their quality.'* (Israel Ministry of the Environment, 1999). Israel here admits they have themselves, endangered long- term water

resources in the region.

The problem was intensified by the increasing number of Israeli settlements that were (and still are) continuously being built to deal with the rising Jewish population (mainly due to high immigration levels). *'Preservation of Israel's water resources is one of the major challenges confronting the country today.'* (Israel Ministry of the Environment, 1999).

This affects not only their own population but also the Arab population of the West Bank alongside Gaza and areas of Syria and Jordan. However, all official publications from the Israel Ministry of the Environment during the 1990s fail to acknowledge the existence of surrounding Arab populations; how this problem might affect them and the ongoing water conflict that has existed between Israel and its neighbours. It focuses completely upon the national interests and security of the State of Israel; it outlines the problem without any mention of 'water conflict' or Arab population, emphasising the subject matter purely as an environmental issue that effects only Israel and can only be tackled by the Israeli government. Publicly ignoring the issue would seem to demonstrate a disregard for Palestinians, Jordanians, Syrians and Lebanese and how Israel's actions and decisions on water issues affects them. This fact suggests that although Israel was appearing to commit to peace negotiations and agreements, in reality it seems to be merely a response to international pressure and to keep up the rhetoric of promoting peace.

The positive appearance of the Peace Process earned Israel recognition and acceptance in the international arena: *'The United States has improved its relations with us... In Europe, our dialogue with the EC has been improved and deepened.'* (Rabin cited in Caplan 2010: 204). This opportunity opened many door for Israel who took advantage by forming economic ties with many countries it failed to before and gave it international economic opportunity to become one of the world's top 50 trading nations. It created further opportunity for Israel to seek cheaper oil imports as the only imports prior to the 90s

were solely from US Oil companies.

Since the 'Oil Embargo' in 1974 Israel realises that although it may be able to illegally occupy areas with avid water resources and siphon water flow with discretion but it cannot do the same with oil as the US and other western European states depend on good relations with Arab countries such as Egypt and Saudi Arabia to ensure steady contracts with Arab oil companies. The US has already jeopardised its relations with its policy in the Middle East *'In creating, aiding and arming Israel.... It gave boost to Arab nationalism, radicalized it, and led within a few years to the Arab nationalist takeover of three of the four key states in the Arab world.'* (Alam 2009). Indeed it is argued that since the 'Oil Embargo' that *'oil companies and the arms industry exert far more economic and ideological influence over Washington's policy in the Persian Gulf region than does the Israel lobby.'* (Zunes 2006: 4)

However, these breakthrough events were closely followed by equally momentous breakdowns in the peace process. The first being the considerable policy, outlook and approach differences between the Labour and Likud administrations, the transition between the two when the right-wing party won the 1996 Israeli elections. *'From the very beginning the Likud had been bitterly opposed to the Labour government's land-for-peace deal with the PLO.'* (Shlaim 2005: 254). The second breakdown was the election of Ariel Sharon in 2001 who from the very beginning of his reign as Prime Minister championed the rapid building of illegal Israeli settlements in the West Bank which was one of the main factors that caused the onset of the 'al Aqsa Intifada'. This was the final reversal and dissolution of all that was achieved in the early to mid-nineties. *'The peace process has 'collapsed' and 'died''* (Selby 2003: 121). And with this, all hope of effective water governance between Israel and the PLO had faded.

## **Chapter 5 : A Crisis of Water Governance?**

Water governance is a relatively new concept, however it is already a *'firmly established part of the consensus on international water development, and has become a constant theme in the [international] policy processes.'* (Franks 2004: 1). The concept was not established as a significant international issue until the Dublin Statement on Water and Sustainable Development in 1992. It was subsequently officially adopted by the UN and is significant as the Dublin Statement for the first time identified water in terms of economic value rather than a universal right. This was and remains to be a controversial and debated issue. The topic of water governance has since become a priority issue in development at all major international summits and conferences. At the 2000 World Water Forum which took place at The Hague, the Global Water Partnership (GWP) Framework for Action stated that *'water crisis is often a crisis of governance,'* (GWP cited in Rogers and Hall 2003: 4). Effective water governance has been identified as one of the highest international priorities in recent years as a lack of which being recognised to be a source of conflict, especially between Israel and its Arab neighbours.

This chapter analyses the current condition of water governance between Israel and its Arab neighbours, particularly focusing on the Palestine West Bank Territories and Israeli diplomatic relations in the form of Joint Supervision and Enforcement Teams (JSETs): the Water Authority Board and West Bank Water Department in particular.

### **5.1 Overview of Current Situation**

Poverty, religion, repression and mass unemployment have all been named as caused of the political convulsions in the Middle East. However, a less recognised reason for the conflict and turmoil between Israel and its Arab neighbours is the growing regional water

crisis. An increasing number of Israeli settlements are continuously being built to deal with the rising Jewish population (mainly due to high immigration levels). *'Preservation of Israel's water resources is one of the major challenges confronting the country today.'* (Israel Ministry of the Environment, 2009)

Not only does the water crisis mean water shortages, but also has a knock-on effect on food prices, which are rising fast in the region. *'The Middle East has some of the world's greatest oil reserves, but this disguises the fact that they mostly occupy hyper-arid places.'* (Vidal 2011). In this region, there are only a few rivers, underground water reserves are shrinking with the risk of becoming saline but water demand is increasing as populations grow and nearly all depend on imported staple foods that are now trading at record high prices. Not only does the lack of water in the area cause conflict between states, it can also cause riots and demonstrations within states as has recently been shown in Egypt and Yemen. This could be an indication of what might happen in the future if states fail to effectively govern and share their natural resources.

The Strategic Foresight Group (SFG) which is an organisation made up of independent experts and mandated by Switzerland and Sweden recently published the 'Blue Peace Report' which brought together the opinions and research of hundreds of experts and leaders from the Middle East. The 'Blue Peace Report' examined the current situation and long-term prospects for seven Middle Eastern countries including the Palestinian territories and Israel. They identified the main sources threatening water resources as being *'population growth, migration, urbanization, climate change and lack of transboundary water governance.'* (Strategic Foresight Group 2011).

The 'Blue Peace Report' maintains that water is more important than oil politically, socially and economically and the tensions that water scarcity creates can lead to *'major conflict and political turmoil.'* (Vidal 2011: 20). The key factor that places the importance of water above oil is that there exist many replacements for oil but not for water. It is true

that *'oil is much more important than water as a source of profits and revenue.'* (Selby 2005:345) but oil, as mentioned is replicable and water is not, it is needed for sanitation, for agriculture and at the most basic level, for drinking: *'water is life'* (Selby 2005:345). Water scarcity as a result of overuse and mismanagement can have devastating effects on a country's economy: it drives up food prices and countries would therefore have to engage in costly methods like desalination and water importation.

## **5.2 Sources of Water**

*'Today, Israel uses over 95 percent of the water available to greater Palestine; the Palestinians receive the remainder.'* (Frederiksen 2005: 74). However, Israel also uses resources out with its territorial boundaries including the Negev Aquifer and the Jordan River Basin water. Israel has also in recent years begun producing water by building desalination plants. Within 20 years of the declaration of the State of Israel, using its military power, International financial and political support, *'Israel had gained control over the entire area's water resources.'* (Frederiksen 2005: 74). This overwhelmed the Arab populations of Palestine and surrounding neighbours. The ongoing economic strategy within the water strategy has resulted in economic, political and social opulence for Israel. At the same time it has significantly weakened and devastated the economic and social viability of the surrounding Arab neighbours as they lose significant quantities of water, in some cases it is often then sold back to them from Merkot for the equivalent of 37% of Palestinian's average annual income (Amnesty 2009).

### **5.2.1 Aquifers**

There are two main aquifer systems that underlie Israel and Palestine: the Coastal Aquifer and the Mountain Aquifer. The Coastal Aquifer is comprised of a series of partially disconnected lenses within the sandstone rocks along the coastal areas of Israel and the Gaza strip. These rocks dip into the shallow sea water and have been used for

decades by local communities and farms in the coastal area. However, in recent years this aquifer has been polluted by agricultural chemicals and saltwater infiltration as a result of over-pumping.

The Mountain Aquifer is situated in the Eastern territories, underlying a mountain ridge. This aquifer is unlike the coastal as it is a karstic system which carries rapid rates of high quality spring and rain water. However, only with deep drilling can this aquifer be exploited and much of the water continues to run into the Mediterranean Sea as is not caught.

A specific example that is used by the 'Blue Peace Report' is that of the renewable freshwater resources in the Mountain Aquifer which is shared by Israel and the Palestinian Territories. These freshwater resources *'have been reduced by seven percent from 1993 to 2010 and in the Western Galilee Aquifer by 15-20 percent.'* (Strategic Foresight Group 2011).

### **5.2.2 Coastal Rivers**

There are several small rivers that rise in the highlands in the West Bank and flow through Israel into the Mediterranean Sea. *'These rivers have been heavily exploited for local water uses and wastewater disposal.'* (Brooks and Trottier 2010). Many of these rivers had become open sewers, however, the Israeli government in attempt to protect this water resource, has pumped significant funding into improving the water quality of these rivers. This has been a great success as these rivers have since been acknowledged for their value to ecological services and urban amenities.

### **5.2.3 Jordan River System**

The quality of water from the Jordan River was once very good but has been seriously damaged from agricultural runoff and sewage. It originates from three sources: the Hasbani River in Lebanon, the Dan Springs in Israel and the Banyas on the Syrian Golan Heights. The river flows into Lake Tiberias (Lake Kinneret in Hebrew) which lies

completely within Israel according to the 1948 UN Partition Line. Lake Tibarias is at risk of becoming irreversibly salinised by salt water springs below it, The UN has reported that *'farm lands is becoming unusable [in Israel] as irrigation schemes and intensive farming often lead to waterlogging and desalination.'* (UN cited in Vidal 2011).

The water from Lake Tibarias then flows into the Dead Sea, most of which falls within the Palestinian West Bank Territories. It is illegally occupied by Israel who charge entry to the banks and which Palestinians do not generally have access to. The Dead Sea has fallen by around 25 meters since 1930. *'The Dead Sea is the terminal point of the Jordan River watershed. As such, it serves as a barometer for the health of the overall system.'* (Lipchin 2005: 1) Its speedy decline exposes the present poor water management strategies of Israel.

#### **5.2.4 Recycled Water and Desalination Plants**

Roughly 70% of municipal waste from Israel is currently being recycled and used for agriculture. There are plans to expand the system; the 2020 objective is to have 20% of total water supply being sourced from treated waste water. Although the cost of treatment is significant, it is well below the cost of desalination and imported water.

Desalination plants are located along the Mediterranean coast and at present, supply around 200mcm of fresh water annually which is around 20% of Israel's potable water. However, this process is expensive and un-environmentally friendly. *'Desal water is too expensive (and ironically too pure) for irrigation, which is by far the largest use of water for both Israelis and Palestinians.'* (Brooks and Trottier 2010).

#### **5.2.5 Implications and Water Scarcity**

*'Elements pertaining to environmental security, whereby a sustainably managed environment provides for social, economic as well as environmental benefits are evident with regards to Israeli water resources such as the Jordan River Basin.'* (Lipchin 2005: 1). The overall decline of freshwater undermines the economic, social and political power and

potential of Israel. The decline also raises issues of an ethical nature about current exploitation of water resources by present generations at the expense of the future generations and their natural heritage.

### **5.3 Water Management**

The 'Blue Peace Report' also highlights the inequalities in respect to access to water resources between the Israeli Government and Palestine West Bank Authorities with figures showing the annual water consumption per person in Israel to be 240 cubic meters annually compared with only 75 cubic meters per person in the Palestinian West Bank. The same inequality also exists in water management whereby *'Israel demands full control and sovereignty over the water resources of a state of Palestine.'* (Frederiksen 2005: 74).

The Oslo water Accords implemented a framework to tackle effective water management between Israel and Palestine which set out to achieve three main things: firstly, they established a formal system of Joint Supervision and Enforcement Teams (JSETs) to play a supervisory role over resource management; secondly, they created a formal system for coordinating the management of the West Bank water resources, supply and systems; lastly, they stipulated that resources available to the Palestinian West Bank would be supplemented. Despite these efforts, the realities of this agreement are not as clear cut.

With regards to the JSETs, the idea is that the Israeli and Palestinian Water Authorities can access JSETs data. The main issue however, is that *'Israel has traditionally kept tight and secret reigns over its most important water-related information.'* (Selby 2003: 133). This means that the PWA's water databases remain incomplete and offer little practical utility. In addition, the Palestinian Authority which has been granted full access to this information gathered through the JSETs has been *'denied the opportunity to use it.'*

(Selby 2003: 133). Although the PWA has practically no access to Israeli data, Israel has full access to Palestinian data, IDF soldiers and water officials have to accompany Palestinian hydro-technicians when they are gathering research and information. *'There may well exist a formal mechanism for the 'joint supervision' of the West Bank water resources, but it is one which continues to enshrine overall Israeli control over water-related information.'* (Selby 2003: 133).

The water management structure that was set-up by the Oslo Accords had no real impact as the management structure was already in place, prior to their establishment of the official framework. In fact, if anything, it could be claimed that the second Oslo Agreement had an overall negative impact: *'The water accords of the Oslo II Agreement merely formalised a supply management system which had been in operation for years, presenting it, misleadingly, as part of an egalitarian-sounding 'joint' and 'coordinated' management system.'* (Selby 2003: 130). The Joint Water Committee (JWC) was set up which would set in place mechanisms for the coordinated management of West Bank Water resources and systems, but not supplies; the vast majority of which would be controlled solely by the Israelis with the exception of a couple of small Palestinian projects, for example: rainwater collection systems.

Inequalities are also being seen within water management costs. *'Many Palestinians must buy water- either from Mekorot [Israel's National Water Company], or from private suppliers selling expensive and unregulated trucked water. Even within the Occupied Palestinian Territories, Mekorot's prices are different for Palestinians and Israeli settlers.'* (CESR 2004:1). 2007 figures from the JSET: Applied Institute of Research in Jerusalem (AIRJ) show that Palestinians receive up to six times less water than Israelis but it costs them five times more. (AIRJ 2007: 5).

The creation of a formal joint management system is beneficial only to Israel: *'the formalisation of Israeli-Palestinian cooperation has enabled Israel to divest itself of some*

*of the most onerous burdens of occupation*' (Selby 2003: 131). This means that the Palestinian West Bank Water Department have to take on massive debts due to increasing levels of non-repayments. At the same time Israel haven't lost control over water resources, supplies or had to forgo the discriminatory pricing policy which exclusively benefits them. It keeps their environmental security safe and strong and undermines that of the Palestinian West Bank, only appearing to make it seem more equal with the official label of occupation removed.

The final promise of the Oslo II Agreement was that additional water supplies for the West Bank's Palestinian communities would be provided for. 41.4-51.4 mcmy was to be developed to meet the needs of the communities. This agreement places only a minimal burden on Israel: *'Israel would only have to supply 3.1 mcmy from its national water system.'* (Selby 2003: 133). Again, this demonstrates that Israel's first and only priority is to secure maximum water resources with minimum sacrifice to ensure optimum environmental security.

There remain major issues in water management with regards to the Israel-Palestine conflict which have not been addressed effectively and have therefore triggered a crisis in water governance. This inefficiency in transboundary communication is damaging any hope of peace. *'These Israeli water policies, combined with confiscation of agricultural land for settlers as well as other Israeli restrictions on Palestinian agriculture have.... contributed to the grievances behind the Intifada both on the West Bank and in Gaza.'* (Homer-Dixon 1994: 14).

## Chapter 6 : Conclusion

This paper presented one overall objective, which aimed to systematically examine the extent to which the issue of water plays a role in the Israel-Palestine conflict. The research topic was split into four sub-questions which analysed the role of water in early and recent history of the conflict, comparing the role of water to oil within the context of the conflict and focusing on the current issues in water management within the region.

The main causes behind the water conflict have been identified as rapid population growth, intense agricultural activity and general overuse and mismanagement, mainly on behalf of Israel. All literature and evidence, even that from the official Israel Ministry of the Environment website states that the irresponsible management of the water sector over the past few decades has undermined Israeli security: it has *'Destroyed Israel's future water reserves and caused extreme damage to their quality.'* (Israel Ministry of the Environment, 1995). They themselves have endangered long- term water resources in that region which affects not only their own population but also the Arab population of the West Bank alongside Gaza and areas of Syria and Jordan.

### 6.1.1 Environmental Security

Most academic research on the topic, despite the angle from which it is written comes to a similar conclusion; specifically that which is concerned with environmental security and the reality that Israel's very existence is dependent on the future of their control over water resources in the region.

The need for Israeli environmental security is seen as one of, if not the most important aspect in the foundations that the State of Israel is built upon. Patterns have emerged during analysis of early and recent history of the Israel-Palestine; the issue of resource scarcity and conflict are intrinsically linked. *'Throughout human history water issues have been highly political and in a few cases they have even been 'securitized', where they have become political issues of utmost importance.'* (Spring and Brauch 2009: 175). Israel has placed the importance of

water security as a top priority; it would seem above even peace. Israel has proved that it will continually put itself at risk of engaging in conflict and even initiate it in order to attain valuable water resources sourced from neighbouring countries.

### **6.1.2 Human Security**

The impact of violent conflict has also been considered because *'Human security cannot be separated from the operation of states.'* (Barnett and Adger 2007:646). The effects of water scarcity and conflict have been devastating for many. Israel seeks to tighten its environmental and human security by optimising its control over water resources in the region, sometimes being accused of 'stealing' water from neighbouring countries and the West Bank Territories or acting dictator in seemingly joint water management schemes e.g. Joint Water Committee and JSETs. This inequality is viewed by Israel's neighbours as a source of conflict. They are often receiving a fraction of water in comparison to the Jewish population: 75 cubic meters per person annually in the West Bank compared with 240 in Israel (Vidal 2011: 20). Despite the fact that many Palestinians are receiving over three times less and , they are paying a much higher price for it even though it is often sourced within their own territory. Israeli water policies and practices which discriminate against the Palestinian population of the West Bank and Gaza. *'This discrimination has resulted in widespread violations of the right to an adequate standard of living, which includes the human rights to water, to adequate food and housing, and the right to work and to health of the Palestinian population.'* (Amnesty 2009: 4)

### **6.1.3 Resource Scarcity and Climate Change**

The concept of 'Resource Scarcity' has been linked with conflict in this region for many decades. Climate change, although unpredictable can have adverse effects on water resources, especially in arid climates *'Climate change increases water resources stresses in some parts of the world where runoff decreases'* (Arnell 2004: 31). Climate change and population growth are closely linked with resource scarcity, which, in turn has a direct effect on Environmental and Human Security.

The scarcity of water is not only a problem in itself; it has adverse effects on the price of food: *“In 2008/9, Arab countries’ food imports cost \$30bn. Then rising prices caused waves of rioting and left the unemployed and impoverished millions in Arab countries even more exposed.”* (Cheterian cited in Vidal 2011: 20).

## **6.2 The Middle East Conflict and International Politics**

*‘Today, the monumental task of achieving political stability is further complicated by the PA’s authoritarian tendencies and Israeli policies of economic disengagement.’* (Kelly and Homer-Dixon 1995: 26). Steps towards conservation and rehabilitation of natural water resources alongside a more egalitarian approach to water supply, cost and management are key elements for stable peace in the region: *‘The resolution of protracted conflict would open up vast possibilities for functional cooperation.’* (Lowi 1993: 138). Israel and Palestine must reconsider the magnitude and importance of agriculture within their economies. They should also improve the choice of crops grown, cutting out the production of water-intensive crops for instance: bananas, lettuce, tomatoes and cotton. They should also invest in technologies which improve water-conservation techniques.

If the regional conflict is not ended, Israel and its Arab neighbours will only be able to achieve sub-optimal solutions. The key to dealing with the water scarcity is to co-operate as it is itself a transboundary issue and must be dealt with through transboundary collaboration. Israel is currently adopting policies in response to scarcity constraints of an imperialist and aggressive nature which would suggest that the ‘Neo-Marxist’ theory advocated by Naomi Klein and Noam Chomsky which argues that security can be undermined by economic motivations may hold some legitimacy. If these approaches and policies continue to be pursued the effect is likely only to heighten the scarcity and intensify the conflict. *‘Basin-wide arrangements for sharing and utilizing water are crucial for the long-term stability of the region.’* (Lowi 1993: 138)

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