CONTESTED WATERS OF THE MIDDLE EAST

BY

AŞKIM İ. SÖKMEN
B.A. in Political Science and International Relations

Boğaziçi University, 1991

Submitted to the Institute for Graduate Studies in Social Sciences in partial fulfillment of the requirements for the degree of Master of Arts in Political Science and International Relations

Boğaziçi University
1995

TABLE OF CONTENTS

ABSTRACT

The Middle East which is one of the most unstable regions in the world has encountered a new reason for conflict in recent years: Water. The accelerating population, expanding agriculture, industrialization, and higher living standards have led to the competition over the inadequate water resources. The existing political hostility and insufficient water to satisfy human needs among all the nations of the Middle East heightens tensions between haves and have-nots. In addition, the international law is yet to be developed in this respect. The absence of binding international law puts strains on reaching the solution to the problem.

There are three major international rivers in the Middle East which have caused water allocation difficulties. These are the Jordan, the Nile and the Tigris-Euphrates. All of them are characterised by having parts of their watersheds in different countries. The countries in that region are bound by common rivers and aquifers. This common usage produces a water competition between upstream-downstream states. In addition,

there are inadequate water resources. The water problem of the Middle East increased considerably after Turkey's initiation of the Atatürk Dam on the Euphrates. The conflictual aspects of the water problem and the possible water war scenarios were emphasized in many western publications. As different causes of conflict and instability are related to each other, to reach a comprehensive and permanent solution at the regional base do not appear to be easy. Approaches to politics and diplomacy are dominated by a mentality of zero-sum games. At the moment, first of all Palestinian and Jordan, then the Arab countries have begun to negotiate with Israel in the main conflicting issues such as territory. In connection with the created common ground, the optimal utilization of water resources and the increase of existing resource are the concrete steps towards the resolution of the problem.

ÖZET

Dünyanın en istikrarsız bölgelerinden olan Ortadoğu, son yıllarda yeni bir çatışma öğesi ile karşı karşıyadır : Su. Hızla artan nüfus, kentleşme ve sanayileşme, çölsü ve kıraç toprakların tarıma açılması nedeniyle, bölgenin kıt su kaynakları üzerinde aşırı bir baskı ve paylaşım rekabeti doğurmuştur. Su kaynaklarını ellerinde bulunduran ülkelerle, bundan yoksun olanlar arasında sürekli anlaşmazlıklar meydana gelmekte, sınıraşan suların kullanımı konusunda uygulanması zorunlu uluslararası hukuk kurallarının olmayışı, sorunun çözümünü daha da güçleştirmektedir.

Ortadoğu'da sorunlu su kaynakları Şeria, Dicle, Fırat, Asi ve Nil havzalarının nehir ve kollarıyla yeraltı sularıdır. Bu havzaların ortak özelliği, birden çok egemen devletin topraklarına dağılmış olmaları, buna karşılık yukarı memba durumunda bulunan ülkelerin kullanım şekilleri nehir ve kollarının doğal akışını etkiliyerek aşağı memba ülkelerinin kullanımında sorunların çıkmasına neden olmaktadır. Bu durumun sorun oluşturması, suların yeterli olmamasının sonucudur.

Ortadoğu su sorunu, özellikle Atatürk barajının su tutmaya başlamasından sonra Batı basınında sık sık işlenmeye başlandı. Anlaşmazlıkları askeri yollarla çözümlemek, çatışmaları güç kullanımı ile sona erdirmek Ortadoğu ülkeleri için yaygın bir davranış olduğundan, su savaşlarının çıkacağı ile ilgili çeşitli yorumlar basında yer aldı. Ortadoğu da pek çok sorunun içiçe geçmesinden dolayı, bölgesel düzeyde kapsamlı ve kalıcı bir çözüm yakın bir zamanda ulaşılacak gibi gözükmektedir. Artık başta Filistin ve Ürdün olmak üzere Arap yönetimleri toprak gibi birincil sorunlar üzerinde anlaşmak üzere İsrail ile masaya oturmuş bulunmaktadır. Yaratılan ortak zeminler, mevcut su kaynaklarının etkin kullanımı ve kullanılabilir su kaynaklarının artırılması ile sorunun çözümüne yönelik önemli adımların atılmasını sağlıyacaktır. Problem oluşturan her bir nehrin kullanıcı devletler tarafından aralarında eşitçe,hakça ve optimal şeklinde paylaşımı ortaya çıkan sorunların çözümlenmesini sağlayacaktır.

I. INTRODUCTION

From the beginning of civilization, the human race has been involved in a battle to control water resources. Many works and facilities have been constructed to benefit these resources for humankind and society. Along with land and air, water is another vital human resource. Its importance for society and for the Earth system has led to increase an awareness among policy makers and development planners on how much water there is and how we can best benefit from it.

As it has no substitutes, it is essential for life as well as for agriculture, industry, energy and many other aspects of civilization. At the same time, it is increasingly a scarce resource. This scarcity is the result of partial aridity due to a dry climate, sanitation and increasingly Human activity. (Frey 1992 :1-6) Three- quartes of the world is covered by water, however 2.6 of it is potable and also 99 % of that amount exists in polar zone. In addition, the usable water resources do not exist equall across the world. Some regions are more lucky than others such as North America and Central Europe at

where there is a satisfactory annual rainfall. However there are the regions where the amount of annual rainfall does not compensate the needs of the region such as Africa, South America and the Middle East.(Clarke 1993 :10-11) In the above mentioned regions, usable water is very scarce. It can be seen that its availability depends on the climate. Low precipitation with a high evaporation causes a decrease in the amount of water. By the help of high-technology the negative effects of climate has been partly removed. There exist also some options to make better use of scarce water resources such as choosing the right crops or the storaging of water.

Furthermore, in addition to overall scarcity and maldistribution, water has become politicized through crossing national boundaries. These rivers in the world called 'international rivers', ' contiguous rivers', or 'transboundary rivers', are shared by two or more nations. This leads to an ongoing conflict among nations, especially the riparians of transnational rivers, because they compete with each other and adapt methods of consumptive water utilization so curtailing other riparian's rights to the river water. There are two riparian positions, upstream and downstream.The Upstream riparian is advantaged as being the first with a significant flow. In other words, being upstream is a favorable position. Most of

the water resources are generated within their territories. The Downstream riparian is disadvantaged, being dependent on the flow of the river from upstream riparians. When upstream states implement a dam construction project on an international river, it leads to the reduction of the flow of water downstream. Ground-water abstraction in one state also leads to a large amount of reduction in the water rate in neighbouring states. (Beaumont 1978 :3)Cooperation is also possible among co-riparians, but states' proclaim sovereignty over their resources causes difficulties.

Many water-scarce regions in the world are located in the shared basin of a major river system. Generally these regions are often areas of political instability. Thus, there is always the risk of conflict in these regions. Control over the national water supply often becomes a political issue. Such actions make international disputes inevitable when countries that have an increasing water scarcity, do not hesitated to take action to ensure their own supply. To illustrate the enormous potential of conflict in the world, let us have a look at the following figures :

".... Globally, 47 percent of all land falls within international river basins, and nearly 50 countries on four continents have

more than three-quarters of their total land in international river basin. Namely, in human terms, this means that almost 40 percent of the world's population lives in international river basins. These people are dependent on the cooperation of all the countries sharing the basin....". (Clarke 1993 :91).

Some of the transboundary rivers in the world which cause this conflict are; Beas-Sutlej and Ravi between India and Pakistan in South Asia; the Basin of the Rio de la Plata among Bolivia, Brazil, Argentina, Paraguay and Uruguay in South America; the Colorado and Rio Grande between Mexico and the United States; and the Middle East Rivers, Jordan, the Nile and Euphrates and Tigris. (Clarke 1993 :94-105)

This research will analyse the water problem in the Middle East, looking at the apparent transboundary water systems in the region. The Middle East is a region of international concern and political unrest. International intervention in the region has historically been strong. Oil was the main cause of disputes among the region's countries, and any access to oil led to the involvement of superpowers. Recently, water is as valuable as petroleum in that region. It plays a very important role, because it is scarce and it is shared by more than one state. Most countries in the Middle East are linked to one another by

common aquifers. The transboundary waters are the reason for problems in the region as they are flowing within different sovereign countries 'territories, binding their lands. Here,we refer to a conflict among two or more sovereign states' control over the water resources of international river basin that flows within their territories. The riparian state in international law, that any state which bounds a river.

There are three major international rivers in the region which have caused water allocation conflicts. These are the Jordan, the Euphrates/Tigris and the Nile. All of them are characterised by having parts of their watersheds in different countries: The Tigris-Euphrates crosses four nations, Turkey, Syria, Iraq and Iran; the Jordan also directly involves four, Israel, Syria, Jordan and Lebanon while the Nile basin includes nine diverse nation states.

The Jordan river is one of the smallest international basin in the world. Its limited water supply is very important for its co-riparians ; Syria, Jordan, Israel and Lebanon. Hence, it is an additional side of the Arab-Israeli conflict. The Euphrates and Tigris are shared by Iraq, Turkey and Syria (Euphrates) and by Turkey, Syria, Iraq and Iran (Tigris) respectively. The Nile river has a large drainage basin and nine co-riparians, Egypt

and Sudan primarily, but involving seven other riparians, as well.

Of the three cases, all are located at least partially, in arid or semi-arid zones. Existing rivers are vital to the agricultural economies of the region's countries. Agriculture is the region's traditionally basic economical activity and many states are agriculture-dependent such as Syria and Jordan. It even has an ideological meaning. For Israel, irrigated agriculture is the ideological foundation of their state. Many of the region's countries want to become self-sufficient in food production. Rapidly growing population and inefficient water management policies which support water waste, have caused the problem to be significant. For some of the riparian states in each basin, access to the water resources is linked to national security concerns. (Beschorner 1993 :5)

In addition to this, there are historical mistrust and ethnic cleavages among the Middle East states. Although the water problem can be avoided technically, it has always been related with the political arena. The integrated water utilization of the Middle East rivers and implementing international cooperation in water use seem not to be easy. Cooperation will be the result of lengthy negotiations and the goodwill of states. Underlining

the importance of the issue for the region, many scientists have asserted it as a possible *casus belli* and there is no possibilty of peace and stability in the region unless the water problem is solved. (Gruen 1991 :1 and Naff and Matson 1984 :3-4)

The severe water shortages in recent years have caused people to understand that water is a scarce resource in that region and this threatens the region's social and economic structure. The resources of the Jordan river are over-used owing to human behaviour. Israel has recently begun to lose its major underground water resources because of contamination.

The different chapters of the thesis are designed to explain the above comments. In order to present an analysis of the water conflict in the Middle East, the thesis will comply with the following plan ;

First , the introduction, refers to the meaning of the problem. Chapter two outlines the three cases of the riparian dispute that are introduced comparatively. The technical and political dimensions that sets the means and the motives of the riparian states in the conflict are presented. Chapter three examines the legal background of the conflict by studying the legal principles and procedures that exist within every river system.

Chapter four, within the light of the facts derived in each chapter, concludes the research by underling the outcomes and the possible options for each river system.

II.CONTESTED WATERS OF THE MIDDLE EAST

As one of the richest oil producing regions in the world, the Middle East, still presents itself as an area at the core of continuous conflicts and hostility. The region has many potential and actual conflicts. Different causes of conflict and instability are also related to each other.

One of the new causes of instability in the region is water due to the scarcity of water resources. There are several reasons for the problem ; the nature of water allocation, the very limited availability of water in the desert and the semi-arid desert climate, the shortage of annual rainfall, the rapid population growth, the high cost of developing new sources of water, the inconvienent usage of water in agriculture, the tensions and present distrust among countries.

Water is a vital factor in the politics of the region as well as the lives of its people and its scarcity has become acute in the last decade. It can be said that it has become the new candidate of replacing oil as the region's most contentious commodity and the reason for the region's next war might be a fight over water. Already water has had a crucial influence in one major war, the Arab-Israeli conflict of 1967. Agreement on the use and distribution of the Middle East's vital and limited water would go far towards enhancing the achievement of stabiliy in the area. The fact that failure to reach a consensus will almost obstruct current efforts to attain this purpose, could even lead to another Middle East war. Up to now, numerous attempts have been made to overcome the area's water conflict, none has so far succeeded.

Most of the states of the Middle East depend heavily on water resources that originate outside their own borders. They get their water from transboundary rivers and aquifers. Since most of the region's major water resources flow across boundaries, cooperation among riparian states is essential to achieve efficient and equitable use of these scarce resources. It can lead to cooperation between old enemies, as it has between Israel and Jordan, which have agreed an agenda for the discussion of their shared waters.

There are three major international rivers in the Middle East which have caused conflict. These are the Jordan, the Nile, and the Tigris- Euphrates. In the Jordan river, four countries are involved; Israel, Syria, Jordan and Lebanon. In the case of the Nile there are nine riparian states, while with the Tigris-Euphrates basin four countries have an interest in the basin. In addition, one state has demonstrably identified itself as the key state in each of these basin areas. Israel, Turkey and Egypt act on the assumption that their water needs and their control over water resources gives them precedence over their co-riparians.

Each state in the region has acted to control and use as much water as it can, without regard to the effect on its neighbours. The upstream's usage of water has heightened tensions and raised a new conflict, because any attempt to control water resources is considered by beneficial states as a direct threat to the national security. The existing mistrust and the lack of economic cooperation in the region also cause more difficulties and keep them from seeking help from one another.

During the Ottoman Empire, the watersheds of the Jordan and the Tigris-Euphrates were part of it. Namely, they were involved in the same administration, not being international.

Therefore, both river basins were within a single political unit and the disputes concerning the use of water resources did not occur. Since the nation states of the region started to come into existence in the present form with their borders fixed for the benefit of the Western forces, many etnic and border problems started and are still continuing today .

In this chapter, the main three river systems are presented separately. The research will examine the characteristics of the water problem of each river system and the position of each riparian state in the system. The focus will include historical, legal and technical aspects of the river systems. Each part is further divided into the riparian states' stiuation, historical and political dimensions. Finally, the existing cooperation efforts are involved at the end of each river system.

A. THE JORDAN RIVER

The Jordan river has much graver political implications than the other basins. The water question in this river system is linked directly to the political problems that characterize the relations among the riparians.It holds the greatest potential for conflict and is the flashpoint of Arab-Israeli disputes. The unresolved fate of Palestinians is also linked to the solution of the water resources problem. Besides it is an international river with more than one country concerned with its development.

The most critical shortage of water in the Middle East has long been manifested in the Jordan-Palestine-Israel area. There is not enough water for the desired standard of living ; nor enough irrigation to expand food production for domestic consumption and export earnings. Rationing of domestic consumption, reducing allocations to agriculture and damage to vulnerable ground water resources are the common patterns of

the Jordan River basin. Additional water supplies should be found to fill the current supply problem.

Among the main obstacles to the peaceful and efficient utilization of the Jordan river together with its tributaries is its division among four riparians : Israel, Jordan, Lebanon and Syria. This basin also includes the Occupied Territories (West Bank, Gaza Strip and Golan Heights), Jordan and South-Western Syria, however about 80 percent of it is located in present -day Israel ,Jordan and West Bank. Moreover, Israel and Jordan are the most dependent on its waters and face a serious water deficit. For Israel, the problem has been complicated by the fact that it depends for more than three-quarters of its water supplies from sources whose origin is located in Arab states which have been hostile to Israel since its creation in 1948. Lebanon and Syria have an abundance water.

Although Israel is a downstream state on that basin, its water policy prevented it from reaching cooperation on water management in many instances. Until recent peace negotiations, Israel's entitlement was not recognized by the Arab countries, especially Syria, as a riparian state for sharing the region's waters. For instance, the absence of a formal Arab-

Israeli agreement due to the hostility and mistrust has prevented the full implementation of the Unified Water Plan known as the " Johnston Plan" for the Jordan basin.

Syria has stated to discuss regional issues with Israel as long as Israel withdraws from all "Occupied Territories". Many conferences have not occured due to the controversy over Israeli participation, but now this objection seems to be changing with the new peace agreement between the Palestinians and Israel that gives autonomy to the Palestinians within the Gazze and Jericho territories. Thus, an Arab-Israeli peace settlement covering at least the territorial problems has resulted in the beginning of a meaningful dialogue that should cover issues involving the region as whole. In addition, the current written agreements between Israel and Jordan have illustrated their general willingness at least to discuss the water question between them.

1. Hydrological Context

By any standards, it can be said that the Jordan is a small river from its sources in Southern Lebanon to its mouth in the Dead Sea. It covers 18,300 km2, of which % 3 lies in pre-1967 Israel. (Naff and Matson 1984 :21) The Jordan river basin covers 18,300 km. Its total discharge is between 1,200 and 1,800 mm according to some authors is assumed to be equivalent to about 2 percent of the annual flow of the Nile, and 7 perent of the annual flow of the Euphrates. (Lowi 1993 :28)

Its geographical situation strengthens the interdependence of Israel and its neighbours : it originates in the Southern Lebanon hills, and runs through Syria. The main sources of water supply of the Jordan river are surface water and ground water. It flows in three separate tributaries, the Dan, Hasbani, and Banias Rivers. It flows along the eastern border of the West Bank for apporoximately 60km.(Lowi 1993 :22)

The Upper Jordan is fed by springs, the largest of which is The Dan Spring which originates in Israel, and discharges its flow into the Sea of Galilee which is the major storage within the

basin. Israel diverts water directly from the lake into its National Water Carrier, which pumps water from the Sea of Galilee to the Northern Negev.

The Hasbani River is formed by springs in Lebanon,and flows through Syria. The third and the smallest of the headwater tributaries is the Banias which rises in the Golan Heights. It flows for less than two kilometers in Syria before crossing into Israel. The Golan Heights has a strategic importance that it can control major water sources of the Jordan, river system, including the Banyas and Hasbani and other springs.(Naff and Matson 1987 :19)

The Yarmuk, its principal tributary and another international river, has a basin that lies in both Jordan and Syria. The northern portion of the river forms the present boundary between Syria and Jordan, the southern portion is also the boundary between Jordan and the Occupied territory. It originates in Syria and 80 percent of it lies within Syria and the remainder in the Kingdom of Jordan. (Lowi 1993 :32)

Moreover, the major groundwaters of the mountain aquifers the Yarkon-Taninim Aquifer represents a political crisis for the Israel. These acquifers are located within the 'Green Line' (the

1949 Armistice Demarcation Line between Israel and the West Bank). They account for 40 % of Israel's water supplies and the location of settlements in the mid-1970s to the east of the 'Green Line' was generally thought to be linked to Israeli claims on the western aquifer. (Beschorner 1993 :10)

2.The Riparian States of The Jordan River

a.) ISRAEL

Water for Israel have been central importance. Even in religion resources, the boundaries of the desired Jewish state are drawn accordingly water resources. Israel as a kingdom was mentioned in the Old Testament and was going to be built within territories lying from Nile to Euphrates. Its 1948 boundaries were fixed almost accordance with the places pointed out in the Old Testament. According to the book of Joshue, the Old Testament :

> ".... Every place on which the sole of your foot treads, I have given it you, just as I spoke to Moses. from the wilderness and this Lebanon, even as far as the great river, the river Euphrates, all the land of Hittities, and as far as

the Great Sea toward the setting of the sun will be your territory...."(The Joshua 1977:162).

As it can be seen that the Jewish state would be covered the territories between the present Nile and Euphrates. Some Arab scientists asserted that since its establishment Israel has tried to acquire these places and behind its occupation efforts, this fact is taken place.(Zarour and Isaac 1992: 2-3)

To live easily in those territories they needed water. Thus before the foundation of Israel, many surveys were made on water resources, the demands were discussed, and the ways to increase the existent water resources investigated by Zionist organizations. They paid attention to extend water resources into the Israel boundary, but all desired resources could not be included during the foundation process.

From the establishment of the Zionist movement, Palestine was focus of their attention it being the place on which their state now stands. Under the British mandate Jewish homeland was created there and this was the beginning of many problems prolonged up until today. Since Jewish immigrants in large numbers made Palestine a melting-pot, the water disputes started to come into existence. (Zaraour and Isaac 1992 :3)

The newcomers immigrating from all the countries of the world had nothing in common with which to establish a national identity except their shared religion. In order to rebuild the Land of Israel the rootless Diaspora jews organized Kibbutz or collective farm communities. Their aims were to create a green hinterland in Palestine. This, namely agriculture had also an almost mystical belief and Jewish culture was based on it. These factors put heavy pressure on existing water resources. (Gruen 1992: 36)

Agricultural development was considered a national goal. It would provide the following factors for the Jewish state; its economic development, its economic self-sufficiency and the occupation of land. In accordance with this agricultural aim, water became an imperative for them. They drained swamps and revived the desert soil by irrigation. Their attempts related to water allocation caused many tensions between the Arab and jewish population. To give an example; the Arabs, all water sources are a favour of God to mankind and, therefore, each person has a right to use it from its source. However, the jewish immigrants challenged the idea that water could not be

used for the public good, and they created the right of possession over it. (Armaoglu 1989: 27)

Palestine, had not enough water resources for all the jewish population. Many studies and plans for developing resources were made. The Negev area played an important place in those studies. However the Arab inhabitants of the area opposed several plans in order to protect their water resources. These plans posed a direct threat to Arab rights in the area.

When Palestine was divided into Jewish and Arab states by the U.N. partition proposal in 1947, water problems were ignored. With the establishment of Israel in 1948, the Arab Palestinians were forced to immigrate to neighbouring Arab states and this event caused the water conflict in the region to worsen.

Since the 1967 occupation of the West Bank, the Gaza Strip the Golan Heights and Sinai, Israel expanded its control over water resources in the area, including Mount Hermon, the West Bank aquifers and the entire length of the Jordan River. As part of the Camp David agreement in 1978, Israel withdraw from the Sinai desert, but kept the Golan Heights, because the tributaries of Jordan flow through it. It can be said that the the

occupation of Golan Heights provided a control of the sources of the Jordan river. (Irani 1991 :24)

After the occupation,Israel issued military orders in order to gain control over all the water sources of the West Bank and the Gaza Strip and embarked on the policy of establishing Israeli settlements in the occupied teritories. Severe restrictions were and still are imposed on Palestinians. The Israeli authorities have refused the drilling of new wells and deepening of old wells. Every activity connected with wells requires a licence from the Isreali authorities. Therefore, the Palestinians have claimed legal entitlement to various portions of the Jordan river now used by Israel. They have insisted on the restoration of historic rights and a minimum quota of 200 MCM/yr to be granted. (Zarour and Isaac 1992 :9)The economy of the Palestinian state will rely, in the early stages, on agriculture. Existing water supplies are inadequate. In the peace treaty, Israel and the PLO agreed on the cooperation of water issues, however the wells issue has not determined specifically.

After the 1967 war, Israel acquired a strong position against their neighbours. Its occupation of the Golan Heights prevented any Arab attempt to divert the headwaters of the Jordan, and

its presence in the West Bank provided it control of half the length of the Yarmouk. This improved position allowed Israel to use water strategically in relation to the Arab population. They minimized the amount of water following the Jordan Valley. Thus Jordanians were not allowed to extract from the Yarmuk to the East Ghor Channel. (Bulloch and Darwish 1993 : 53)

In 1978 and 1982 Israel invaded Lebanon; on both occasions it was forced to withdraw by international pressure and guerrillas in Lebanon, but Israel did not withdraw completely. According to many researchers, the reason of this invasion was not really for strategic reasons, but rather to gain control of the water resources of the Litani. (Beaumont 1993 :10)

Unlike the Nile, Jordan and the Tigris -Euphrates Basins, the Litani basin lies entirely within one country. Neverthless it has been subjected to international attention due to Israel. The idea of using the Litani water has been an old Zionist dream. When the foundation of the Israel state was first being discusssed, the Litani was considered as its northern border. In 1920, during Anglo- French discussions on the boundaries which would be a Mandated Palestine,the leader of Zionists Chaim Weizman in his letter wrote to the British Foreign

Secretary Lord Curzon, expressing their interest in the Litani clearly :

" ..... Your Lordship realizes the enormous importance of the Litani to Palestine. Even if the whole of the Jordan and the Yarmouk are included in Palestine, it has insufficient water for its needs.... The irrigation of Upper Galilee and the power necessary for even a limited industrial life must come from the Litani ... If Palestine were cut off from the Litani, the Upper Jordan river and the Yarmouk could not be economically dependent..." (Bulloch and Darwish 1993 : 37)

In 1982, after the second Israeli invasion of Lebanon, Israeli forces established the front line of their security Zone along the Litani river and examined hydrological datum of that river. The fact is that Israel has still not withdrawn from the Lebanon. As yet, though, Israel does not appear to have any plans to divert the waters of the Litani.

Israel is also interested in the waters of Nile. Having failed to secure Egyptian approval for diverting the waters of the Nile under the Camp- David agreements, Israel has shifted its attention to Ethiopia. The waters of the Blue Nile originate in Ethiopia and flow into Egypt. Any attempts related to divert its

waters, have been considered as a threat against Egypt's national security and a *casus belli* with Ethiopia . For that reason, Israel have enabled Ethiopia to dictate the flow of the water to Egypt and the Sudan. In accord with this help, Israel could build three dams located near the River Abay, one of the Nile tributaries. (Nasrallah 1990 :17)

b.)JORDAN

Jordan is a country created by the British in 1921 that has limited water resources. Geological factors have also contributed to this limitation. Only 11 % of the land of Jordan is arable and 1 % is forested. The remaining part is mostly desert. The rainfall is irregular .(Lowi 1993:22)

Jordan shares its principal water resources with its neighbours: The Jordan and Yarmouk rivers with Syria and Israel, and groundwater reserves with Syria, Iraq and Saudi Arabia. The Yarmuk is the most important river of the country. But Jordan uses only a small portion of its flow since both Israel and Syria have been increasing their withdrawals for their own development projects.

At the time of independence in 1946, the East Bank of the Jordan river constituted the territories of the Kingdom of Jordan. At the foundation of the Israel State and later as a the result of the Arab-Israel Wars of 1948 and 1967, several thousand Palestine Arabs poured into Jordan. These refugees settled on the East Bank constituting two-thirds of the population. (Tal 1993 :49)

In the aftermath of the Arab-Israel war in 1967, the West Bank was occupied by Israel and the Kingdom of Jordan lost direct control over part of its territory. The demographic pressure generated by refugees and displaced Palestinians and the loss of its rightful share of the Jordan Basin has created water stresses for Jordan. If Jordan had storage on the Yarmouk river, it would have access to an additional water supply.

c.)SYRIA

Syria is a relatively water-rich country. The Jordan river provides only about 5 per cent of Syria's needs. Syria depends mainly on the Euphrates for its water, so that its chief concern is over its relations with Turkey, but dominates Lebanon, and so has a close interest in that country's relations with Israel.

d.)LEBANON

Compared with its neighbors, Lebanon has plentiful water resources. The country's numerous rivers and underground water resources are reliably recharged, however, at present severe hydrological difficulties exist in Lebanon. The main water supplies consisted of 15 permanant rivers. Of these, four are international : the Kabir, the Orontes draining into Syria,

and the Hasbani which flows into Israel and the largest one the Litani river. Their potential use of water lies in hydroelectric power generation. According the Israeli officers, % 80 of Litani waters have still not being utilized.(Beschorner 1993:18) Lebanon, on the other hand stresses that its water supplies are non-negotiable and hydrologists maintain that there are no exportable surplusses.

3.Water Projects of the Jordan River System

Numerous water projects relating to the Jordan river and its tributaries have been proposed either by Israel or Jordan or a third party, but most of them could not be carried out due to political conflicts. In consequence, each of the riparians preferred to utilize it with their own projects.

Ideas for the development of the waters of the Jordan river date back to the Ottoman Empire period. During the 1930s and 1940s, several plans were made to allocate the waters of the Jordan river, however, no progress was made. With increasing Jewish immigration to Palestine in the 1930s, water problems in the region intensified. As to the Arabs, their arguments were of insufficient water resources to sustain a Jewish state. The 1939

Ionides Plan, published in Jordan suggested conservation measures and proposed diverting the Yarmuk into a canal. (Naff and Matson 1984 : 32)

In contrast, in 1944 W.C. Lowdermilk, publicizing a plan for the Jordan Valley, reinforced the Jewish argument that properly managed water resources would support both Jewish and Arab populations. Lowdermilk's plan included the Litani river, irrigating the Negev, diverting the Yarmuk river into Lake Tiberias, and building a canal from the Mediterranean to the Dead Sea. (Naff and Matson 1984 : 32)

Unable to agree on cooperative water development projects, Israel and Jordan unilaterally pursued plans and projects. In 1949, the Jordan government with the help of UNRWA (The United Nations Relief and Works Agency for Palestine Refugees) began to work on the plan which would improve its agriculture and help resettle Palestinian refugees. In 1950, Jordan received a report commissioned from Murdoch McDonald. This report recommended diverting the Yarmuk into Lake Tiberias and constructing irrigation canals both sides of the Jordan. This report also assumed that there would eventually be a joint Arab-Israeli arrangement. It was unable to be carried out due to the intense conflict between Arabs and

Israelis. In 1952, the USA sent Mills A.Bunger, an American engineer, with a proposed plan for UNRWA. The general feature of the plan was to construct a dam on the Yarmuk river. The water impounded by the dam would be diverted by a canal along the East Ghor. In 1953, the Bunger Plan was put into practice. (Drezon-Tepler 1994 :286)

The plan did not make any reference to Israeli participation. As a result, Israel began to put pressure on the USA by claiming that Israel had riparian rights over the Jordan and the Yarmuk rivers. The Tennessee Valley Authority (TVA), at the request of UNRWA and with United States approval, conducted an engineering study in 1953, and formulated proposals for developing the Jordan-Yarmuk river system. The TVA Plan, sometimes referred to as the Main Plan after Charles T.Main who supervised the study, prepared a full utilization of the Jordan River and its tributaries disregarding political boundaries. The Main Plan served as a basis for the negotiations. The negotiations, however continued over several years and plans and proposals from both Arab and Israeli sides were advanced and discussed. The Main Plan was based on a regional rather than on a national basis. In the plan, the unified development of the water resources of the Jordan Valley region

recognized but omitted the Litani River.(Drezon-Tepler 1994 : 286)

While the Arab states and israel objected to different aspects of the Main Plan, the United States tried to get agreement for a unified water resource development plan for the Jordan river in 1953. Eric Johnston was appointed by Eisenhower to mediate among its riparian states and his name is usually associated with the plan. The plan was originally drafted by UNRWA . Its main principle was that any solution must be equitable, economic and efficient. (Beschorner 1993 :20) A two-year negotiating progress centered on water quotas; use of Lake Tiberias as a storage reservoir; use of the Jordan water for 'out-of-basin' areas, including Lebanon's Litani river in the system; and the shape of international supervision and guarantees.

Israel's 1953 Seven Year Plan included the Litani river, out-of-basin use of the Jordan waters and the Mediterranean Dead Sea Canal proposal comprised a response to the Johnston Plan. The Israeli Seven Year Plan was worked out in detail with another plan prepared by Joseph Cotton in 1954. The Cotton Plan encompassed the Litani for irrigation and power generation.

With the combination of Jordan and Litani, the output water flow would be 2500 MCM. (Wishart 1990 :539)

There were also Arab responses and counter proposals to the Main Plan. In 1954, the Arab League established a Technical Committee and prepared a plan. This plan maintained the principle of the in-base use of the water, but rejected the integration of Litani and the storage in Lake Tiberias. Most Arab plans refused to regard apportioning the Litani waters to the benefit of Israel. Consequently the Arab Technical Committee ignored the Litani and allocated only Jordan-Yarmuk water. The water quotas according to this plan would be 200 MCR/yr for Israel, 861 MCM/yr for Jordan, 132 MCM/yr for Syria and 35 MCM/yr for Lebanon. (Naff and Matson 1984 :32) Though the Arabs allotted Israel a much smaller amount than it was granted under the Main Plan, the Arab allocation itself was significant for implicitly recognizing Israel as a riparian state. (Gruen 1992:17) In 1955, the Jordanian government had conducted a hydrological survey called the Baker-Harza study to determine the amount of water needed for the irrigation of the Jordan Valley. (Naff and Matson 1984 :40)

As negotiations continued on the Main Plan, with some changes and objections, disagreements were gradually reduced. Israel gave up on the integration of the Litani river, and the Arabs gave up their objections to out-basin use of waters. The Arabs rejected the idea of using Lake Tiberias as a regional storage to benefit all riparians. International supervision had been demanded by Arabs, but opposed by Israelis. This plan also gave Israel 36 % of the Jordan river. The remainder was shared out as follows ; Jordan 54 %, Syria 9 % and Lebanon 3 %. (Bulloch and Darwish 1994:52) This unified plan was accepted by the technical committees of both parties in 1955. However the final approval of the plan at the Arab League Council, was rejected because of political considerations. The Arabs feared that the acceptance of the plan would be considered as recognition of the Israeli state. Also according to the plan, the irrigation of the Negev desert would increase the economic potential of Israel which meant a threat to their security. Israel also opposed it due the existing international supervisory body. (Doherty 1965:21)

To the present day, the "Johnston Plan" has remained the only comprehensive approach to the water resources of the Jordan basin. With the breakdown of the plan, Jordan, Israel, Lebanon and Syria, went ahead with their own projects to increase their

water supplies. Individual projects caused to worsen disputes, because the scarcity of water is always a zero-cum security issue and thus creates a constant potential reason for tension. Israel's water programs and projects in particular continually encountered Arab hostility.These plans are ; Israel's National Water Carrier and the draining of marshes around Lake Huleh; Jordan' East Ghor Canal Project, the Arab's plan related to the diversion of Jordan headwaters and Lebanon's dam project on the Litani. Israel and Jordan pursued their projects in a way consistent with the Johnston Plan.

Israel designed a transport water system called "National Water Carrier". This system transports water via pipeline from the water-rich north to the coastal plain and the Negev Desert. region. The carrier completed in 1964, lies entirely within Israel's pre-1967 boundaries and diverts water from Upper Jordan. (Naff and Matson 1984 :23) As a result of that project, Israel takes about 600 MCM/Y from the upper and lower Jordan waters. The plan led to an increased salinity level of the river downstream.

Another Israeli project was to drain the Lake Huleh swamps in order to reclaim land for intensive cultivation and use the waters collected for irrigating other parts of the country.

However, the project involved work in a demililatarized zone, some of which was Arab-owned. Syria threatened Israel regarding diverting the sources of the Banias. This brought about fighting between the two parties, then the cease-fire was ordered and Israel was inhibited from this project by a UN Security Council Resolution. (Lowi 1992 :80)

Jordan proceeded with its own water development plans and projects, most notably the Great Yarmuk project, including canals, dams and hydroelectric plants. In parallel to Israel's work on the water carrier, Jordan constructed The East Ghor Canal in the Jordan Valley to use Yarmuk waters for irrigation. It was carried out in cooperation with Syria and financed jointly by the United States and Jordanian Governments. The basic concept behind this project was the diversion of Yarmouk river waters by gravity flow into a canal meandering along the Jordan river. Also as part of that project, two dams were constructed on the Yarmuk (Mukheba and Magarin). Political tension between Syria and Jordan emerged due to Syrian opposition to the dam which would stand in part on Syrian territory. (Dees 1959:357)

In 1959, Israel's plans to pump fresh water from Lake Tiberias led to concerted action by Arab states to prevent this project.

When the 1964 Arab Summit decided to divert the headwaters of the Jordan, two possible methods were considered; the diversion of the Hasbani to the Litani and of the Banias to the Yarmouk, or the diversion of both the Hasbani and Banias to the Yarmouk in Jordanian territory. This second option was chosen. Thus , Israel was threatend to be deprived of 50 % of water supplies from the Upper Jordan to the National Water Carrier. Work began on the schema in 1965, Israel warned that if this plan was carried out, it would consider it as an infringement of its sovereign rights. (Lowi 1993:123)

In retaliation against the Arab Headwaters Division Plan, Israel decided to build an embankment on the Dan , the third source of the Jordan. Thus the flow of Dan to Syria territories would be enclosed and brought water within Israel. For that reason , mutually attacks started between Syria and Israel and led to the 1967 Six Day War. With the war, this diversion plan was abandoned. (Beschorner 1992 :151)

The Lebanese authorities have built dams on the Litani around Qiraoun and Khardale and diverted Litani water into the Awali river to generate hydroelectric power and irrigate the Bekaa Valley. In the early 1980s, there was speculation that Israel was planning to divert 500 MCM from the Litani at Khardale

into the Jordan river. Finally, Israel invaded Lebanon to control the waters of the Litani. As yet however, Israel does not appear to have any plans to divert the waters of the Litani. It has made diversion plans, but its has been waiting for the right political circumstances to implement these projects.

More recent developments have not presented a basin-wide cooperation. The principal hydraulic schemas currently under consideration are: The Mediterranean-Dead Sea Canal Project, the Al-Wahda (Maqarin) Dam Project on the Yarmuk and various schemas to increase water supplies in Israel, such as the diversion of the Litani, the building of a canal from Ismailia in Egypt to transport the Nile waters to Gaza and the Negev desert, the importation of water from Turkey vith tankers . (Turan 1993 : 26) In addition, high-technology options have been used such as recycling, saltwater irrigation and desalination of seawater and brackish groundwater.

Israel's plan to unite the Dead Sea to the Mediterranean by a canal and tunnel will be expensive and politically it is dangerous. The main aim behind this project is to keep the level of the Dead Sea stable. It does not offer any permanent solution to the urgent need for fresh water. Moreover, there is the adverse fact that the Dead Sea is not Israel's alone, half of

it lies in Jordan. Jordan' s attitude to the Israeli plan, because if the level of the Sea was raised, Jordan's huge potash plants would be flooded. Potash is Jordan's second most important natural resource, after phosphate. This plan has not been implemented due to the Arab financial barrier, no bank or government will put up the money for the canal. (The Alive and Kicking, Economist,Sept. 1980: 31)

The Al-Wahda dam plan (Maqarin) was relaunched in 1974 and ratified by the governments of Jordan and Syria in 1987. Israel has refused to approve the project. This is presently held up by the lack of political agreement among the riparians.

Buying water from neighbouring countries is another optional solution to the problem. In 1987, the Turkish Prime Minister Turgut Özal proposed the construction of a huge pipeline to transport water from the Seyhan and Ceyhan rivers in Turkey to Syria, Jordan, Saudi Arabia and the Gulf States. Israel has not involved in the plan. Turkey is the only country in the Middle East with enough water to actively consider exporting it to the region. In parallel to the peace process, Turkey has proposed to supply water to Israel sources from the Manavgat river. The Manavgat project proposed by Turkey has been aimed to provide 250 MCM water per year at the first stage. In 1992,

the infrastructure of the project began, but it has not yet been implemented.

There exist some negative sides related to this project. One reason which concerns Israel is that it will not want to depend on a water project which originates in Turkey and runs through Syria, because of the unstable political alliances in the region. Israel would like to have 15-20 years guarantee from Turkey. On the other hand, Turkey asserts that the guarantee should be given by the firm which is responsible for all the project. The other point, the idea of using the Turkish Republic of Northern Cyprus as a terminal has been rejected by Israel. The shipping of water by tankers also reveals extremely high cost. During Prime Minister Tansu Çiller's visit to Israel on November, 1994, Turkey proposed the modernization of F-4 jets in return for Manavgat waters. (Ekonomik Evlilik,Milliyet 1994 : 17) Syrian has also opposed any cooperation in joint projects. It appears to depend on the solution of the Golan problem with Israel and settlement of their dispute with Turkey on how to approach the problem of the waters of the Euphrates. Therefore, they are looking for alternatives which do not involve Syria. In addition, after the peace agreement between Israel and the PLO, many Arab countries have started to pay attention to that project.

Furthermore, Israel has been trying to find permanant solutions to its water problems by applying advanced technology and supporting research projects in this field. The only reasonable source of new fresh water is desalination of sea water. This process requires both more money and an enormous amount of power. Israel does not have efficient coal or oil resources. Nuclear power facilities are also not possible owing to its neighbour's opposition. Hydroelectric power is the only solution to desalinate water.

To sum up, it would appear that in spite of the lack of any formal agreements concerning the use of the Jordan waters, many co-riparian states have been carrying out projects and schemes diverting the waters of the Jordan.

4.The Legal and Political Setting of the Jordan Basin

Water is an increasingly divisive issue in the Jordan basin.The attainment of water agreements in that basin is tied with the resolution of political and security issues. Security which includes secured and peaceful borders and an adequate supply of water is important for all countries. While Israel and the West Bank Palestinians are at odds over diminishing supplies of

water in the face of growing populations, Jordan and Syria accuse each other of stealing water from the border river.

It should be noted that in many instances the borders drawn for the Middle East did not take into consideration history and geography. The Jordan river best demonstrates this. With the Paris Peace Conference in 1919, many jewish settlers started to arrive in large numbers in Palestinian and this event led to serious problems arising.

The Jordan river had never formed a boundary until the French and British mandates decided on an administrative division between them at the Paris Conference. In 1947, The United Nation resolution which divided Palestine into Jewish and Arab States added an artifical division to the map of the area. With the establishment of Israel in 1948, the Arab Palestinians were forced to immigrate to neighbouring Arab states and this event caused the existing water conflict in this region to worsen.

During the 1967 Six Day War, Israel occupied areas formerly held by the Hashemite Kingdom of Jordan, (The West bank) and Egypt (Gaza Strip),namely "the Occupied territories", southwestern Syria and Sınai. This war's outlet reason was the Arab plan to divert the headwaters of the Jordan. The fact

caused open warfare between Israel and Syria. The decision by King Hussein to join in the battle gave Israel the opportunity to capture the territories mentioned above. This occupation was the beginning of *Intifada* which is the symbol of revolt against Israel as throwing stones.

Further changes in the area's maps resulted from the 1973, 1978 and 1982 wars. In addition, in 1978, a peace treaty between Egypt and Israel contributed to this process as well. (Armaoglu 1989:415) In 1978 and 1982 Israel invaded Lebanon. Though international reaction forced it to withdraw on both occasions, Israel found the way to access the Litani and Hasbani rivers that lies ten miles on the north of its border. This has shown that Israel's ambitions are not limited to the waters of the Occupied territories, they also include Lebanon. The 1.000.000 Soviet Jewish immigrants would be settled within these territories.

As can be seen, no legal settlement of the utilization of Jordan waters is possible unless a clear demarcation of the boundaries between Israel, Lebanon, Syria and Jordan is reached, and the temporary armistice agreements do not constitute a defined boundary settlement. If the political situation is changed

basically and based on mutual agreements among co-ripariens, the allocation of the waters of this basin will be achieved.

The crucial point of peace meetings which began after the Gulf War in 1991, is for Israel to return to its pre-1967 boundaries. In due course, Israel encountered many pressures from both its Arab neighbours and the Western powers . It appears that the Israeli government were fundamentally opposed to any territorial withdrawal. The solution to the instabilities of the region can only come from the exchange of land for peace.

Water was a main issue at the talks in Madrid on the Middle East process in 1991. In their joint invitation to the Madrid Peace Conference, President Bush of the United States and President Gorbachev of the Soviet Union pointed out "water" as one of the issues that was crucial to peace and stability in the Middle East. (Gruen 1991 :1) Accordingly, a special working group to deal with regional water issues was established during the first multilateral round of the Middle East Peace Conference. Multilateral discussions have taken place between Israel, Jordan, and Palestinian delegates in Moscow, Vienna and Washington in parallel to bilateral talks on territory and sovereignty and on administrative arrangements for the Palestinians. Yet little essential progress has been made. Syria

and Lebanon have stated that there can be no discussions on any multilateral issues, including arms control, refugees, economic development and land unless Israel withdraws from Occupied Arab land. For instance, Syria was opposed to the participation of Israel in a Middle Eastern Water Summit to discuss regional water matters, that had been scheduled to begin in Istanbul on Nov.4, 1991. Turkey had to cancel the conference.

Up to now, Syria has been working on its old policy of non-recognition of the legitimacy of the Jewish state, however the Israelis, Palestinians and Jordanian have agreed to cooperate in the conflicting issues. The Syrian attitude constitutes a serious obstacle to Arab-Israel regional cooperation on water issues.

Recently, the permanent peace in the Middle East has begun to lay a foundation after many conflicts and wars. With the disintegration of the USSR and the end of the Cold War,as well as the end of Gulf War, The Middle East Peace Conference was held at Madrid in 1991. The new borders have begun to be formed by agreements. The peace agreement between Israel and PLO was written at the White House on September 13, 1993. Thus the historic breakthrough in Palestinian-Israeli relations was marked by the mutual recognition of the Palestine

Liberation Organization and the State of Israel. By this agreement, the Palestinians have acquired the right of self-determination and limited autonomy. In addition, they can settle the Gaza and Jericho. (Bektaş in Şen 1993: 298) It is expected that this beginning will lead to the establishment of a Palestinian State. (Dogan 1993: 15-14) The water issue in this agreement was included within the Economic Cooperation as below :

".. Cooperation in the field of water, including a Water Development Program prepared by experts from both sides which will also specify the mode of cooperation in the management of water resources in the West Bank and Gaza Strip, and will include proposals for studies and plans on water rights of each party, as well as on the equitable utilization of joint water resources for implementation in and beyond the interim period..." (Gruen in Bagış 1994: 275)

It is natural that this peace process also covers Jordan and Syria. Therefore, one day after that agreement Jordan signed with Israel a " Common Agenda" for negotiations, whose ultimate goal is to reach a peace treaty. The Israeli-Jordanian Common Agenda chiefly involves water issues as follows ;

".. - Securing the rightful water shares of the two sides,

-Searching for ways to alleviate water shortages..."

(Gruen in Bagış 1994 :275)

In reality, Israeli and Jordanian officials have been meeting secretly for many years. On October 26, 1994 Israel and Jordan signed a peace agreement. This peace agreement has been a concrete step towards peace with an Arab country after the 1978 Camp David agreement. Each party recognise and respect each other's sovereignty, territorial integrity and political independence. Israel will give back to Jordan some territories captured during the 1948 Arab-Israel War. (Savaşma,Barış, Milliyet 1994:24)

The water part of this agreement can be considered important for peace. In the utilization of the Jordan and Yarmuk waters course, the parties agreed mutually to recognise the rightful allocations of both of them. In addition, Israel will provide Jordan with 50 million MCM water annually. At the next step, three dams will be constructed on both the Yarmuk and the Jordan river in order to increase the two countries' water

resources. Thus the prohibition of Israel over the usage of the above mentioned rivers by Jordan will come to a close.

The recent peaceful negotiation developments are the sole means for achieving progress and prosperity in the water usage. The existing attacks of islamic militants (HAMAS) against Israeli civilians have made it difficult to provide peace between Israel and the Arabs. The last peace treaty between Jordan and Israel did not please Yaser Arafat and was boycotted due to giving some rights related to the administration of religious institutions in the East Jerusalem. Despite all adverse problems, the Cairo summit on February 2, 1995 shows that with the exception of Syria and Lebanon, the leaders of Israel, Egypt, Jordan and the PLO have been insistent on reaching a permanent and comprehensive peace in the Middle East. (İsrail-Ürdün Anlaşması,Yeni Yüzyıl 1995: 14) It should be noted that without an Israeli-Syrian and Israeli-Lebanon agreement, a comprehensive peace will not be achieved in the Middle East. As mentioned earlier, Syria has insisted on Israeli withdrawal from the strategic Golan Heights. In the same manner, Lebanon has strongly opposed any proposals to export Litani waters. Its water supplies are non-negotiable. In shortly, despite differing perceptions by the riparian states, the allocation of Jordan and Yarmouk waters based on equitable

and resonable mannner will be realized by political peace agreements instead of military action. It appears this will not be far away if it takes into account the existing peace negotiations. Moreover, additional sources of water and appropriate guarantees on joint research, control and management will increase the chance that they will succeed. Turkey's proposals related to imported water can provide the supply of additional water to region.

To sum up, the Jordan river, more than the Nile or the Tigris-Euphrates, needs measures of conservation and development of the use of water resources, since all surface water and groundwater resources are over-utilized. Syria and Lebanon have surplus water supply whereas in Israel and Jordan, the demand is higher than supply and this creates constant deficit in the water balance. Technological solutions to the supply problem provide to solve the problem such as the large scale desalination projects with solar power , drip irrigation, cloud seeding and recycled sewage, if co-riparian states of the Jordan river can agree to cooperate.

B.THE TIGRIS-EUPHRATES RIVERS

For most of the past decades, the Tigris-Euphrates Basin has been severed by war, first the Iran-Iraq war and latterly, the Iraq and Kuwait crisis, The Gulf war. The valuable resource, Oil was partly the reason for those wars. Water as a resource is now the new candidate to raise a warfare position in that region.

The Euphrates is an international river shared by Turkey, Syria and Iraq. The Tigris is also an international river basin shared by Turkey, Iraq, Syria and Iran. Iran is a minor contributor to the Tigris and its rights in the basin are minor.The two rivers are almost separate basins which unify at Shatt al-Arab. In contrast to the main Jordan river riparian states, neither Turkey, northern Syria, nor Iraq is facing a water shortage. Instead, the extensive irrigation and hydroelectric power projects in the basin are the main reasons of conflict. There has not existed any coordination among the co-riparians in the utilization of rivers. The separate development of consumptive water usage in all three co-basin states and the absence of any

formal agreement on allocation of the waters of the Tigris-Euphrates waters have led to tensions and conflict. Consumptive usage of Tigris-Euphrates waters began in Iraq in ancient times. This is the reason for Iraq's assertion regarding ancient rights to the Tigris-Euphrates waters. Syria was the second to utilize the water of the Euphrates during the 1960s and 1970s. Turkey began to use it in 1970s. Turkey has currently the most important geopolitical position as it contributies most of its water. Iraq is the most dependent country on the Tigris-Euphrates waters.

Although Turkey, Syria and Iraq have been having diplomatic negotiations and technical discussions over the waters of the Euphrates river for a long time, they have been unable to reach an agreement related to allocation of the river's flow among them. In the early 1970's, Iraq threatened to go to war with Syria owing to the construction of the Tabqa dam and the filling of the Lake Assad reservoir. Syrian's action would deprive Iraq of the natural flow of the Euphrates. With the help of Soviet and Saudi mediation, tension diminished. (Gruen 1993: 100-107) After Turkey's initiation of the Atatürk dam on the Euphrates, water shortage topics has gained wide currency. Syria and Iraq signed an agreement over the allocation of the river flow's in 1990 against this decision.

As the upstream state on the Tigris-Euphrates, Turkey's plans for the use of the water affect its downstream neighbours in terms of the quantatity and quality of avaliable water. Even

though a water shortage is not predicted for this watercourse system in the next years, the hydro electric projects to exploit the waters of these rivers are the cause of problems.

Turkey's SouthEast Anatolia Project (GAP) is creating anxiety for Syria and Iraq. If all the projects of GAP are realised as planned, the volume of water flowing through of these transboundary waters will be considerably reduced. This is a massive regional development scheme on the upper Euphrates and Tigris.

Iraq and Syria sometimes use diplomatic channels and sometimes use informal means to show their reactions. They even use their oil policy or their PKK policy as a political weapon against Turkey. Kurdish nationalism and other regime opponents have been supported by Turkey's neighbouring states.

Anti-Turkish activities referred to by the presence of the outlawed Kurdistan Workers Party (PKK) members and its leader Abdullah Öcalan in Syria and Syrian controlled Bekaa Valley in Lebanon. There exist their military camps. PKK militants have carried out armed attacks crossing the border. During the 1980s, the question of Syrian support for PKK guerrillas overshadowed Turkish-Syrian relations. With signing of a security protocol between Syria and Turkey in 1992, the Syrian government prohibited the activities of PKK in Syria.

Iraq and Syria, like all downstream countries, claim that the Euphrates-Tigris are international rivers and that they should be shared equally by their riparian states and cannot be restricted by territorial sovereignty claims of the upstream state (Chalabi; 1992) However, Turkey, like all upstream countries, insists that they are only transboundary rivers which are subject to respective use determined by states without any harm to other users, and according to the principle of equitable and reasonable use of available waters.

These political issues have affected approaches to water policy. The water issue between these three states seem to be overshadowed by events such as the Gulf War. However, amount of the water , already depleted by the steadily increasing population and needs, are giving signals that the subject will come up in time in a chronic form.

1. Hydrological Context

The Euphrates and Tigris rivers both originate in Eastern Anatolia and travel 971 km into Syria and 523 km into Iraq. These two rivers unite to form the Shatt al-Arab before flowing into the Gulf. (Tekeli 1990 :206).The basin is characterised by high mountains to the north and west and extensive lowlands in the south and east. Both river regimes are dominated by snow waters. The flow of rivers varies considerably on a seasonal and annual basin and has been prone regular to severe flooding. (Beaumont 1978 :179)

The river Euphrates has its source in eastern Turkey. It is formed in Turkey by two tributaries; the Karasu and the Murat. The two streams join and are combined in the Euphrates before it flows southwards into Syria where it is united by the river Khabur, its largest tributary and the Balikh, both of which also rise from the southern slopes of the mountains in southeastern Turkey. The Kharun river is the longest river of Iran. From there it goes through the desertic regions of Iraq, before uniting with the Tigris, and then discharging its waters into the Arabian / Persian Gulf. (Kolars and Mitchell 1991 : 4)

The Euphrates' length is 2330 km , from which 455 km are in Turkey,675 km in Syria and 1200 km in Iraq. Contrary to this distribution, 88 % of its annual flow is provided within Turkey, while there is far more river in Iraq. The remaining 12 % is occurrs from Syria. (Naff 1984: 84-83)

The area of the Tigris Basin is of a similar order with the Euphrates. It is the secod longest river in southwest Asia after the Euphrates river. It also rises in the mountains of southeast Turkey and flows through Iraq. On its journey through Iraq, numerous tributaries,namely; The Greater Zab, the Lesser Zab, the Adhaim and the Diyala unite with Tigris. Nearby Qurna in southern Iraq, the Tigris and Euphrates join and continue until discharging into the Shatt al-Arab. (Kolars 1986: 7)

The river 12 % of is located in Turkey , 0.2 % in Syria, 54 % in Iraq and 34 % in Iran. The effective area is distributed among Turkey (21 %), Syria (0.3%), Iraq (31%) and Iran (48%). (Anderson 1990: 2-3)

2. The Riparian States of The Tigris-Euphrates

a.)TURKEY

Turkey has relatively abundant water resources. It contains a variety of climatic zones and a good amount of annual precipitation.Average annual rainfall in Turkey is 642mm and the country has 26 major river basins. Turkey is rich in water resources in relation to its neighbours. Although it has sufficient water resources for the time being, it might encounter water shortage problem in the near future, since the existing water resources are not equally distributed. The economically most developed western regions of the country such as the Marmara and the Aegean regions are already face to face with poor water resources. (Bagış 1989 : 45 and Turan 1993 :1)

Although Turkey is endeavouring to be an industrialized country, it is still considered as the leading agricultural country of the region. Turkey is largely self-sufficient in food production and is a leading regional exporter of fruit and vegetables to the Middle East and Europe. This sector contributes to 18,5 % to its GDP. 28.05 million hectares of the country is designated for agriculture.Agriculture has an extensive water consumption. The rapid population growth and urbanisation put pressure on existing water resources. At the moment, Turkey's population is nearly 60 million people. This

means that the country concerned may face serious problems in the years of drought.

The existing water resources are used for agriculture and Hydro electric power. Hydropower development in the Turkish energy policy plays an important role , since its petroleum and coal resources are poor . In addition, the production of electricity from a variety of energy sources has attracted special attention. The rivers and dams built on them, therefore provide generate electricity and hydropower for industrial infrastructure. The Tigris and Euphrates account for 40% of hydroelectric power potential (Kolars 1986 : 53-66)

The rivers Tigris and Euphrates constitute 28.5 % of Turkey's total surface water potential. Although Turkey has a relatively smaller share in the drainage basin and in river length compared with Iraq, it makes enormous contribution to its water volume. Their waters have been utilized for hydroelectric power and irrigation. That rivers are realized as an extremely significant asset by Turkey. If they are developed and used efficiently, they could aid the economic growth of the South natolian region and the comformation of political stability in the region.

b. The Southeastern Anatolia Project (GAP)

The key development scheme in the development of the Euphrates basin at the moment is the South-East Anatolia

Project which is designed to control the waters of the Tigris and the Euphrates rivers for the hydroelectric power and irrigation. At the same time, it is the main reason of the Tigris-Euphrates river problem.

The GAP project was planned in the 1960's by the State Hydrolics Works (DSİ) which is an institution that managed Turkey's hydrodevelopment program and converted in 1984 to an integrated development plan encompassing social and economic infrastructures.

In addition, GAP is the major priority of the Turkish government. The aim is to accomplish only by Turkish resources, specifically using Turkish money, Turkish companies and Turkish technical know-how, because the financial aid has been inhibited by Syria's attempts. Therefore, the cost of the accomplishment of GAP has been extremely high over Turkish economy.

The GAP project covers a region of 74,000 km2 within the Euphrates-Tigris Basin. It is a combination of 13 major projects altogether, seven of which are on the Euphrates and six on the Tigris. The project also conceives the construction of 22 dams, 25 irrigation systems, 19 hydroelectric power plants on the Euphrates and Tigris rivers and their tributaries. (Tekeli 1990 :206- 216, Kolars 1986 : 62)

In the development of the Euphrates region course, three major dams were planned ; the Keban dam, the Karakaya Dam and the Atatürk Project. The Keban dam is already completed and producing electricity. Although, this dam is a part of the management of Euphrates water aimed to regulate the flow of Euphrates and to generate electiricty, it is not involved in the GAP project. It is expected to produce 7.35 billion Kwh annually. One of the other regional development projects, with the same aim as the Keban dam, is the Karakaya Dam completed in late 1988 and its hydroelectric generation will be between 7.3 and 7.5 billion kWh. (The State Hydraulic Works, South-Eastern Anatolian Project 1989)

The centerpiece of the GAP project and the third Hydroelectric Power plant on the Euphrates, is the Atatürk Dam started in 1983. With the Şanlıurfa Urfa Tunells will divert the water to the region. This dam is designed for electrical energy production and for supplying irrigation water to the Urfa Tunnel and the Hilvan Canal. The start of impoundment at the Atatürk dam during January 1990 focused attention on GAP. The temporary stoppage of the flow of the Euphrates river to fill the Atatürk dam, has caused great anxiety to Turkey's downstream countries. Syria and Iraq have feared that this action will damage their own agricultural and energy projects. In addition to, enviromentalists have pointed out that this degradation of the flow will cause saltier water to reach downstream states.

The Şanlıurfa tunnels are the major unit of the GAP project. The two tunnels will convey water from Atatürk to Harran and Mardin. Although there have been financial problems, works has continued. One of tunnels, T-1 tunnel was opened in 1994 and the completion of the tunnels (T-1 and T-2) will be in 1997.

In the Tigris portion of GAP, 7 dams and 12 small power plants are scheduled to be constructed with the aim of the irrigating about 600,000 ha of land and generating 8 billion kWh electricity.The Tigris portion of this project is less important than the Euphrates side.

GAP, covering the provinces namely Adıyaman, Batman, Diyarbakır, Gaziantep, Mardin, Siirt, Şanlıurfa and Şırnak, is a multisectoral regional development project. The project area does not cover the whole of the Kurdish region, which also includes the provinces of Van and Hakkari. This conform 9.5 % of the total land surface area. Nearly 5.3 Million people live in the region which is 8.5 % of Turkey's 1990 total population with immigration trends.

When GAP is fully accomplished, it is expected that the area will be transformed into a regional bread-basket; thereby diminishing regional disparities, creating new employment opportunities and ensuring economic growth and social stability in the region by the year 2005. In Turkey, there exists regional development differences between east and west. The

Eastern side of the country has always been considered as underdeveloped on the economic side. The political instability has also prevented new investments coming to the region. By the accomplishment of GAP, the industrial growth of region will be provided for and the internal immigration decreased.

The economies of all the GAP region rely largely on agriculture.Dry farming in the South Eastern region is still carried out . Therefore the agricultural productivity always is low. Importance is attched to the the agricultural development of South East Anatolia. GAP will introduce profitable farming by bringing irrigation to the region. Thus the region will develop its agriculture and raise the standard of living of the Kurdish population in the area.

In short, the GAP project has both political and national importance for Turkey. The Turkish government has given it top priority. Though there exist technical, financial and political problems, there are no possibilities of giving it up. It will be completed by the year 2010 at the latest . Therefore, for Syria and Iraq, the ten year delay period will not change anything if they are not able to reach an agreement with Turkey over Tigris-Euphrates water allocation for themselves. Hence, the financial difficulties are enormous. The World Bank and many international funding agencies are not prepared to lend money for water projects unless the interested riparians have come to an agreement. Thus, any agreement on the question of

sharing the Tigris-Euphrates waters will be beneficial for each riparian.

c.) SYRIA

As the downstream state of the Euphrates and its tributaries, Syria relies entirely on those rivers for drinking, irrigation and industry, and partly for electricity. The more than half of country consists of desert, semi-desert and steppe regions. The annual rainfall is less than 250 millimetres. Other water sources like the Orontes has been used extensively since 1961 for irrigation purposes.

In the late 1950s, its fast growing economy based on agriculture caused extensive use of the waters of the Euphrates and its major tributary, the Khabur for large scale irrigation and hydro-electric power schemes, but as the Tigris forms only a small part in the aspect of resources, only the Euphrates gained attention. With the help of Soviet assistance, Syria carried out many dam projects. The most significant and the centerpiece of the Euphrates valley project is the Tabqa Dam (later renamed Ath-Thawrah) implemented in 1975. The Soviet design of the Tabqa dam produces 60 % of the country's electricity and irrigates 850,000 ha. The additional two dams have already been built on the Euphrates: the al-Baath regulatory dam and the Tishreen HEP dam. (Beschorner 1993: 32)

d.IRAQ

From the time of the Sumerians, as early as 4000 BC till the modern Iraq of today, Mesopotamia has been the center of attention due to its water management and irrigation developments. In other words, Iraq's utilization of the Tigris-Euphrates has existed from time immemorial. Iraq has a better position with regard to the Tigris because it has the largest portion of the area of the Tigris drainage basin, but makes no water contribution to the river. Iraq's total surface water resources are approximately 80 km3/yr: 31 km3 from the Euphrates and almost 50 km3 from the Tigris. It can be said that Iraq, like Turkey has relatively abundant water resources. Its main problem is water quality rather than quantity. Iraq has encountered serious problems with soil salinity since ancient times. Two-thirds of the country's area is desert and gets less than 125 millimetres of rainfall per year.

Among the three riparians of the Euphrates and Tigris, Iraq was the first country to begin to develop water management with the construction of Al-Hindiya barrage on the Euphrates in 1913. Iraq has been using the waters of the Euphrates for irrigation since 1950. As the rivers' flow change from year to year, the storage of spring floodwaters is the major point of water resource development in Iraq. In the mid 1970s, Iraq launched a major project to compensate a future reduction of the Euphrates river which might a result from the projects undertaken by the upper riparian states, Syria and Turkey. The

aim of the project was to divert the waters of the Tigris to Euphrates by a canal. (Naff and Matson 1991:91-92) Another project worth mentioning was to pump water from the Euphrates to the Hashemite Kingdom of Jordan via canal, but the Gulf War delayed this project together with a number of its hydraulic projects on the major river.

The Euphrates carries about 30 billion cubic metres of water into Iraq. Turkey's Gap, and planned Syrian water projects could cut this amount to 11 billion.("Troubled Waters",Economist 1993 :107)

Iraq considered that its projects would be under risk in the event of substantial reductions in the flow from Turkey and Syria. Particularly, the building of the Atatürk dam was widely mentioned as a threatening act against Turkish-Arab relations. In turn, Turkey has argued that any temporary shortfalls in the Euphrates flows could be compensated to some extent by water from the Tigris, however, Iraq rejects this suggestion as it claims to have plans to utilize all the waters of the Tigris along the river itself.

3. Politics Of Water

Although the conflict over water rises mainly due to the shortage of water resources in the case of the Nile and Jordan water basin, the reason for water problem in the Euphrates-Tigris basin is different. This is because this river basin has the only surplus water in the Middle East. Conflicts are arising from the implementation of riparian states' separate intensive hydrological and irrigational projects . There are several areas of tension which exacerbate their conflict over the Euphrates waters.

Until the 1970s, no conflict was brought about around water usage of the Tigris-Euphrates. After that period, both Turkey and Syria had begun to store water in the Keban Dam and Tabqa Dam respectively. The first crisis between the riparians of the Tigris-Euphrates took place in 1974. Iraq suffered from severe water shortage for which it blamed Syria. Iraq mobilized its army near Syria's Iraqi border. Finally Syria released 200 MCM of water from the Tabqa dam and the crisis was over. (Gruen 1993 :100)

Just as with the other upper riparian states, Turkey's huge hydrological and irrigational project, GAP has been the impelling force for bringing about current conflict. Especially, the Tigris-Euphrates water problem has gained weight recently and only after Turkey's initiation of filling the Atatürk Dam on the Euphrates. Though Turkey has denied that there is any

political aim behind its allocation of the Euphrates waters, Iraq and especially Syria have never held the same opinion.

Turkey temporarily stopped the Euphrates flow for one month in order to fill the Atatürk Dam in January 1990. This action was perceived as aggressive by its downstream neighbours, even though the governments of Syria and Iraq had been notified for technical reasons of the cut-off two months previously. In addition, Turkey released additional water from its reservoir during the 23 November 1989 and 13 January 1990 period and during this period also increased the flow from 500 m3/s to 750 m3/s. Thus, the initial filling of the reservoir gave the opportunity to create water wars scenarios in the Middle East. Both Syria and Iraq governments protested about the water closure of the Euphrates and expressed immediate alarm over their water security. In the Arab media, predictions were written that both countries would go to war with Turkey if the flow did not increase.(Jansen 1990 :2) In return, Turkey pointed out that it was sensitive to downstream countries' water need and had no intention of cutting the water of its transboundary rivers.

In order to obstruct or in other words to render more difficulties of the implementation GAP project,in the international arena the two downstream countries have given weight to the works of the negative aspects of it on them . They succeeded in blocking any credits being given to Turkey for dam construction by the World Bank, but they could not

stop Turkey's building the Atatürk dam which is completely financed domestically. (Yetkin 1993 :5)

Iraq has indicated that the reduction in the Euphrates would affect 1.3 ha of rich farmland, 40 percent of its irrigation land and force Iraq to keep four power plants out of order.(Jansen 1990 : 12). It should be noted here that Iraq can compensate this reduction by using the waters of the Tigris via the Thartar Canal which joins the two rivers. So, according to water experts, after realization of Turkey's GAP project, Syria's share of the Euphrates could be cut up to 40 percent and Iraq's by 80 percent. (Anderson 1990: 6)

On the other side, Turkey without putting forth the adverse sides of the GAP, impresses that this project with a such wide scope and magnitude will contribute the development of the region in the Middle East. In fact, GAP will not diminish Iraq and Syria's water supply, because the existing dams on the Euphrates serve to regulate seasonal fluctuations. It can take care of the fact that the discharge of Euphrates can fall down to 150 m3/sec. in summer, whereas after winter it can go up 5200 m3/sec., the dams will prevent the shortage in Syria and Iraq during the times of drought. (Gölhan in Bagış 1994: 9-10)

Apart from the recent event, indeed the first crisis over water within the basin occurred during the 1970s, between Syria and Iraq due to Syrian water management projects. Syria's action to construct the Tabqa dam and to fill the Lake Assad as a

reservoir led to a temporary decrease in the natural flow of the Euphrates to Iraq. The two countries had come to the threshold of war, but with the help of Soviet and Saudi mediation, the tension reduced. (Gruen 1993: 100)

Bilateral relations between Turkey and Syria have not been based on mutual understanding and mutual confidence in many years. There are two main sources of conflict between the states : Syria's supporting the PKK, the Kurdish Workers' Party which is the opponent of the Turkish regime and Syrian irredentist claims to the province of Hatay.

Turkey has continously accused Syria of allowing the settlement of the PKK in both within its territories and in the Bekaa Valley of Lebanon, part of the area under the control of the Syrian army. In reality, Syria has over the years permitted various militant groups opposed to the Turkish regime to operate from bases in Syria, such as the Armenian ASALA and left-wing DEV-SOL guerrillas which tried to turn Turkish cities into battlegrounds in the 1980s. Turkey is very sensitive about the Kurdish nationalism and border security and the support for regime opponents by neighbouring countries. Significant Kurdish minorities live within the territories of Turkey, Syria and Iraq. The South-Anatolia region of Turkey has been a battleground between the PKK guerrillas and the Turkish army since 1984. The Marxist Kurdish group, PKK's aim has been to create a Kurdish state from Turkey's Eastern Anatolian provinces and unite it with neighbouring Kurdish areas.

Therefore, its attacks backed by Syria, Iraq and Iran have caused instability and chaos in eastern Anatolia (Bulloch and Darwish 1994 : 60-61).

Therefore, the question of Syrian support for PKK guerrillas has overshadowed Turkish-Syrian relations for a long time. Syria has allowed these groups to use its territory as a base of operations. It can be asserted that Syria has always needed something with which it can bargain in his dealings with Turkey. Recently, this bargaining device seems to be the PKK. Syria appears to support the PKK as a counterweight to the possibility of Turkey's turning off the waters of the Euphrates. In exchange for an assured quantity of water from Turkey, Syria has always been ready not to permit anti-Turkish activities in its borders.

Turkey and Syria signed a protocol on water and security in 1987 As to this protocol, Turkey settled at the commitment to maintaining a Euphrates flow of 500 cubic meters per second at the Syrian border on a yearly basis. The parties would co-operate on the issues of security. One of the results of this protocol was the Syrian government's removal of PKK camps from Syria to Lebanon. (Yetkin 1993 : 5-6)

After the protocol, there has been improvement in border security with decreased numbers of crossings of the PKK militants to carry out armed attacks. The PKK centre of operations was moved from Syria to the Bekaa Valley in

Lebanon, but this area is also under the control of Syrian army and PKK' attacks from here have been going on to through today. This means Syria has still been using the PKK as a trump card in his continuing controversy with Turkey over the water issue.

Indeed, to establish a causality between two issue might be misleading. Turkey has a natural right to use these water sources according to its necessities and requirements. In this framework, Turkey does not need to give something in return to Syria. It is a very obvious fact that Syria has still been in the United States' list of states supporting international terrorism. If Turkey gave water in return for the PKK, though it is not obliged to, it would gain no more than if it allowed Syria to be more arrogant. In addition, if water is released in return for certain things, there is no guarantee that the flow cannot be cut-off in return for others favours in the future. (Kut 1993: 9)

The second issue which affects negatively the Syrian-Turkish relationship is the problem of Hatay province since 1939. France as the mandatory power in Syria handed over to Turkey the area called Alexandretta (Hatay in Turkish) during the Second World War by a plebiscite. Syria, however has never accepted this territorial loss and Syrian maps still show the territory as a part of Syria. In the Orontes river issue, the Syrians rejected to discuss its allocation which will result in the recognition of Turkish sovereignty over Alexandretta. This

shows Syrian double standard attitudes on the different river systems. (Picard in Bagış 1994 :217)

Turkey and Iraq, at least until the Iraqi invasion of Kuwait had better relations. They were on favorable grounds especially, during the Iraq-Iran war. The two countries have well-developed trade relations. Turkey and Iraq have often a common interest in putting down Kurdish guerrillas within their territories. This has extended even to military cooperation, particularly during the Iran-Iraq war, Turkey and Iraq signed a "Hot pursuit" agreement. This means that Iraq had granted the Turkish army the right of hot pursuit against the Kurds backed by Iran across its border up to five km. (Gürkan, 1993, p.61) But this situation changed after the end of war. The Iraqi army was not allowed to pursue them.

During the Gulf War, Iraq was supported only by Jordan. Turkey, Syria and Iran sided with the U.S. So, the relations among the riparian states of the Tigris-Euphrates have changed .After the Gulf war, Iraq has been divided and become more vulnerable than before. Especially 'The United Nations' food and oil embargo has put strain in the country. The Iraqi occupation of Kuwait and later withdrawal of the allied powers from northern Iraq (the area between the north of 36o parallel and the south of 32o parallel) had created a power vacuum which caused instability and interrupted Iraq's water and agricultural developments. In those territories, the Kurdish people were established as an autonomous Kurdish state. This

event has affected both Turkey and Iraq and has not preferred development for either country. In addition, the economic relations between Iraq and Turkey have been corrupted due to the embargo.

Turkey had become a major trading partner of Iraq during the 1980s. Oil constitutes the most important commodity in Turkey's trade with Iraq. Iraqi oil is carried to foreign markets through the pipeline in Turkey but also provides oil to Turkey. The closure of the pipes in the fall of 1990 with the UN sanction against the Iraqi occupation of Kuwait has caused serious economic consequences for Turkey. The Turkish pipelines are still closed. Neverthless, Turkey would like to renew their relations with Iraq, mainly economical.

Therefore, it can be asserted that Iraq heavily depends on Turkey's goodwill. In the water issue, the two sides are in cooperation about the Euphrates course at the technical level since the Euphrates and Tigris rivers were on the agenda. The relations have been complicated by Turkey's plan to control the waters of Euphrates.

Relations between Syria and Iraq have been based on mutual mistrust. This enemy has come from many events as follows; The rule of the different branches of the pan-Arabist Ba'ath Party are in both countries. Syria and Iraq have accused each other of giving shelter to regime opponents. In addition, Syria supported Iran in the Iran-Iraq War.(Kut 1991 : 111) The two

countries were brought to the edging of armed conflict in 1975 on the Euphrates water issue. Iraq accused Syria of reducing the river's flow, while Syria passed the blame on to Turkey. With the help of Saudi Arabian mediation, Syria released extra amounts to Iraq.(Naff and Matson 1991 : 93-95)

Recently, Syria and Iraq have been trying to avoid any crisis between them and have been inclined to ally against Turkey on the water issue as considering the easiest solution to the problem. For this aim, in 1990, Iraq and Syria agreed on the allocation of water between each other. As to the agreement, Syria would receive 42 % and Iraq 58 % of annual flows. (Gruen 1993 : 100) The two countries have forced into Turkey for the following aim : the annual water amount flowing to them should be determined with a fixed figure before the GAP project is completely implemented. However, their demands seem not be rational under the light of the region's enviromental conditions. The water capacity of the Euphrates and Tigris can be variable according to the annual rainfall and snowfall. At the same time, huge differences can also exist in their flow between the same years and months (EP 1993 :18-19)

Therefore, Turkey has offered to use the rivers in an optimal and reasonable manner instead of the determined figures, but Syria and Iraq have not accepted this usage type. The main reason of this disagreement is that Turkey has its hand on the tap as generating 90 % of water within its territories, and can cut off the water whenever it chooses so to do. As they can use

oil as a political pressure tool against the other countries, they have much to fear that water can be used in like manner against them. Thereby, in order to prevent this Syria and Iraq have insisted on the allocation agreement.

4. Cooperation Efforts of the Riparian States

Although Turkey, Syria and Iraq have been involved in various diplomatic negotiations over the waters of Euphrates-Tigris for many years, they have been unable to agree on a permanent tri-partite treaty. Rights and obligations related to the basin were organized by bi-lateral treaties.

The first formal agreement regarding to the Euphrates waters was the Iraq - Turkey Friendship and Good Neighbourliness Treaty in 1946 in which Turkey agreed to consult Iraq before carrying out any development projects on the Tigris or Euphrates. (Kut 1993 : 3-4) The recent agreements are oral or written agreements among the co-riparians to the Tigris-Euphrates. All these agreements refer directly only to the Euphrates. In 1980, a ***Joint Technical Regional Rivers Committee (JTC)*** was established between Turkey and Iraq for information exchange and to look for ways for more optimal usage. Syria also joined in 1983. Although the JTC has met regularly, except for interruption during the Gulf War, it is of only limited utility due to the differences of their views, even in technical issues.(Jansen 1990 : 12)

In 1987, Turkey and Syria signed a Protocol on Economic Cooperation which covered a wide range of issues . Water was one of the principal issue. Turkey accepted to release a yearly average of 500 cubic meters per second at the Turkish-Syrian border. (Yetkin 1993 :5) It must be underlined that the Protocol was regarded as a temporary arrangement.

In January 1990, Turkey began to divert the Euphrates water for nearly 30 days to fill the lake behind the Atatürk Dam, in accordance with the existing agreements. Turkey, at the same time assured that Syria would receive a minimum flow of 120 Cu/sec from tributaries below the Atatürk Dam and also additional flows at a rate of 750 m/sec from 23 November to 13 January, thus all together the flow would be 509 Cu/sec within the terms of the 1987 protocol. (Bagış 1994 :21) But, Syria protested to Turkey that it had not provided sufficient water and technical details about its plans. Whereas Turkey asserted that it had done everything technologically not to cause any adverse effects in Syria and Iraq.

Furthermore, despite the hatred between Iraq and Syria,the two countries signed a sharing agreement on April 1990 under which Syria would receive 42 % and Iraq 58 % annual flows. In June 1990, a summit meeting of the Foreign Ministers of Turkey, Iraq and Syria took place in Ankara. In this meeting, Iraq and Syria proposed that Turkey should increase the minimum flow of the Euphrates from 500 m3/sec to 700 m3/sec

Iraq and Syria proposed that Turkey should increase the minimum flow of the Euphrates from 500 m3/sec to 700 m3/sec and that a formula should be agreed for the allocation of the waters. (Beaumont in Bagış 1994 :206)On the other hand Turkey proposed a Joint Action plan called the "Three Staged Plan for Optimum, Equitable, Reasonable Utilization of the Transboundary Watercourses of the Tigris-Euphrates basin because Turkey considered that technical solutions should be taken into account for the distribution of water in the basin of Tigris-Euphrates. Together with the plan Turkey also proposed to regulate the flow of the Euphrates river according to seasonal needs of the downstream countries. (Beumont 1978 : 16-17 and Turan 1993 28-29) These ideas were rejected by Iraq and Syria.

The main reason of the non-existence of a tri-partite agreement stems from the different legal views of riparian states. At the first instance, Turkey's approach to the legal definition of the rivers are different from its two neighbours, Syria and Iraq. According to Syria and Iraq, the Euphrates and the Tigris are international rivers that have to be treated as an integrated whole (common rivers) and should be shared equally between its co-riparians by a treaty. Turkey has not the absolute sovereign right over them. Secondly, the Euphrates and Tigris water basin is not considered as a single hydrological unit and they should be evaluate separately. (Sınıraşan Sular ve Ortado u'da Su Sorunu, Harp Akad. 1994 :124-127)

On the other hand, the rivers which run through the territories of more than one state according to the Turkish argument, are transboundary watercourses which are not subject to equal sharing. Waters of transboundary rivers have to be utilized in an equitable, reasonable and optimal manner. International rivers are also only those which form the border between two or more states and those waters must be shared by the riparians through the median line or the Talweg line. For instance, the Maritza river (Meriç) forms the border between Bulgaria and Turkey and is shared equally. (Tekeli 1990: 213 and Chalabi 1993 : 30-36)

Turkey views the Euphrates and the Tigris as a single hydrological system, not only because they merge before discharging into the Persian Gulf to form the Shatt-al Arab, but also because Iraq uses the waters of both rivers in its Tharthar Canal Project which transfers the Tigris waters to the Euphrates. Their waters are under Turkey's exclusive sovereignty until it flows across the border into Syria. Throughout, Turkey has continually insisted on its sovereignty control over the waters. (Kut 1993 :10) To give an example, the former Prime Minister Demirel stated that :

"... Water is an upstream resource and downstream users cannot tell how to use our resources. By the same token oil is upstream resource in many Arab countries and we do not tell them how to use it ..."("The Politics of Thirst", Middle East August 1991 :29)

Moreover, Turkey stresses the optimal and rational utilization of the waters of the Euphrates-Tigris instead of mathematics sharing. In connection with its view, the Turkish government has proposed " The Three Stage Plan" for optimum equitable and reasonable utilization of the transboundary water courses of the Tigris-Euphrates Basin. This plan comprises inventory studies for water resources, inventory studies for land resources and evaluation of water and land resources. The plans are considered by the downstream states as violation of their sovereign rights. (Turan 1993 : 27-29) Turkey complained that the agricultural facilities in Syria and Iraq waste waters and not suitable to the nature of region. Turkey argues that there is sufficent water in that basin for all the countries if it is used properly, but Syria and Iraq have been wasting their water resources for many years. For instance, their open irrigation channels cause the loss of 60 %of used waters. That means Iraq and Syria loose 60 liter of every 100 liter water given by Turkey before utilization. However by the usage of dripping method, which is used widely in Israel and Jordan where the water shortage is very acute, this loss can be diminished to 20 %. ("Su Savaşının Eşi inde",Ekonomi Politika 1993 : 19) The Turkish government's thesis and the joint cooperation offers on developing water saving technologies have been rejected by Syria and Iraq as what they considered Turkish efforts in the imposition of modern technology on them.

Turkey has been volunteering to cooperate with the other riparian countries since the 1980s. A notable example would be its declaration of the policy on the water issue in the 1986 Conference of the Center for Strategic and International Studies :

"....Turkey regards the Euphrates-Tigris waters as the foundation to further mutual cooperation and prosperity, a goal attainable with... "... more cooperation among the countries concerned and less interference from the outside..." (Tekeli 1994 : 214)

In connection with this aim, Turkey's peace pipeline project and the other water export projects (the export of Turkey's Manavgat river in tankers) may be to impel toward regional cooperation. The Peace Water Pipeline Project was proposed at the Istanbul Water Conference, in 1987. The project's aim is to pipe potable water from the Seyhan and Ceyhan Rivers to regions of need in Syria, Jordan, Saudia Arabia, and other Arabian Gulf states.Turkey has offered a great part of its water to cooperate in this course, and in this way to promote regional peace and stability. (Gruen 1991 : 13)

It is important here to mention briefly the peace pipeline because it can be used as a device to settle the disputes over the water usage. The project envisioned the construction of a major pipeline out of the Adana province of Turkey into Syria. In Syria, the pipeline would separate into two branches. The

Western branch would go through Syria and Jordan, eventually reaching Saudi Arabia. The total route length of the western pipeline is nearly 2650 km. It would carry 3.5 million m3 of water daily. The second eastern branch named the Gulf pipeline, would travel through Jordan, Kuwait, Saudi Arabia, Bahrain, Qatar, and the United Arab Emirates, after Syria. This route would transport 2.5 million m3 of water daily and would have a total length of 3900 km. (Official Presentation March-May 1988 p 2-3)

The Peace Pipeline project has not been approved affirmatively by the countries of the region as Turkey had hoped for. The political aspect of the plan that this pipeline would also provide water to Israel water as well, caused the Arap states' to objection. The Arab states are not completely ready to rely on Turkish water provision. In addition, the high cost of the water project together with the continuing mistrust of Turkey based on the resentment over the memories of 400 years of Ottoman Turkish rule, led to rejection of the project. Although a variety of reasons may account for this lack of response, the project continues to constitute an imaginative way of providing a solution to one of regions most pressing problems. (Giray in Bagış 1994 :244)

As a conclusion, both the Euphrates and the Tigris have been used for hydro-power production in Turkey as this is a non-consumptive use. Iraq is able to use water from the Tigris and its tributaries and divert the water to the Euphrates river. The

question of water within the basin can be achieved by the most efficient use of water. In order to avoid a conflict between the countries of that basin, cooperation is the only way to have a reasonable solution. Therefore joint technical projects and cooperation are essential . The differences of co-riparians political and legal views on the subject and lack of confidence between them have led to a minimum sitting and reaching an agreement. Briefly, in the Euphrates-Tigris Basin, there seems to be not way forward which would lead to an agreement about water allocation, unless each riparian state agrees on common approaches at the moment. Under these conditions, Turkey's water problem with Iraq and Syria seems as if it will continue.

C.THE NILE RIVER

As the longest river in the World, the Nile and its headwaters flow through nine African states : Burundi, Egypt, Ethiopia, Kenya,Rwanda, Sudan, Tanzania, Uganda, and Zaire. It is calculated that the whole catchment area of the Nile river basin is 2.9 million km2, representing approximately one-tenth of African continent. The average annual discharge of the Nile is nearly 92.600 MCM. (Naff and Matson 1991 :125).

What are the particular political aspects of the Nile basin which might give rise to conflict over its waters ? First, the Nile basin encompasses nine countries, however there is a great contrast in the use of the waters of the Nile between the riparian states. At present, significant use of the waters of the Nile is made by the two downstream countries ; Sudan and Egypt, the latter being the main user. They have been also directly involved in the discussion of its waters. Though Egypt makes no contribution to the Nile, it uses most of its water. In addition, it is in a very weak position as a dowstream user state if the upstream states decide to go ahead with their own

schemes without any new agreement being reached. Therefore, Eygpt considers that any covertion action is a threat against its national security and a reason of a *casus belli.*(Gruen 1991 :1)

On the other hand, the other seven upstream countries have not as yet used the Nile waters to any appreciable degree, except Ethiopia. Rwanda, Burundi, and Zaire have litte interest in the issue of water utilization in the basin; Kenya, Tanzania, and Uganda are most interested in sharing the Equatorial Lakes (Victoria, Kyoga, and Albert). Ethiopia having a strategic position, uses the river as a geopolitical bargaining tool against its downstream neighbours. This is because 86 percent of the waters of the Blue Nile originates in Ethiopia and then flows into Egypt. At present, it contributes almost all the water to the Nile, but it uses almost none.

Second, sharing the waters of the Nile has become urgent for rapid population growth, and the needs of the agricultural economies of the riparian states, especially after drought and the low rainfall in the 1980s. Although rainfall briefly returned to a more normal level and improved the situation somewhat recently, countries sharing the basin still confront the periodic drought, deteriorating water quality and starvation in some areas. (Kliot 1994 : 69-70)In parallel, their rapidly increasing populations lead to the Nile waters being turned into a greatly demanded but scarce commodity. The situation is more chronical if it is taken into consideration the fact that Kenya has the world's highest birthrate.

Up to now, there is no basin-wide agreement in regard to the management and allocation of the Nile involving all watercourse states. The only agreement on Nile water is a bilateral agreement between Egypt and Sudan in 1959.

1. Hydrological Profile

The Nile is consists of two main tributaries : the White Nile and the Blue Nile, which rise in Lake Victoria (Kenya,Rwanda,Tanzania, Uganda) and Lake Tana (Ethiopia), respectively. The two branches unite at Khartoum (Sudan) to form the main Nile, which flows through the Sudan and Egypt to the Mediterranean Sea. (Naff and Matson 1991 :126 and Beumont 1991 : 4)

The White Nile Basin known also as the equatorial sub-basin is geographically divided into two sub-systems. The first of those systems is the lake terrain region. This region contributes nearly 30 billion cubic metres of water annually. Lakes Victoria, Albert,Edward and Keoga are involve in this group. The other sub-basin is the Equatorial region and the Semliki River tributaries, its main tributaries, contribute 8.5 billion cubic metres annually flowing through Zaire and Uganda. (Sınıraşan Sular ve Ortadoğu'da Su Sorunu, Harp Akad. 1994:67)

The White Nile provides approximately % 15 of the flow when it merges with the Blue Nile in the north. An estimated 36 billion cubic meters are lost due to evaporation. It is the high temperatures of that region combined with the great expense of swamp and marsh raises the level of that evaporation. (Starr and Alley 1988 : 11)

The Blue Nile with its tributaries consists in the Abyssinian Highland basin. The Blue Nile flows from the lake Tana, and on the north it merges with the White Nile just south of Khartoum, where the two rivers can be seen flowing side by side. That river provides over 80 % of the water that reaches Egypt. The Blue Nile, its tributaries the Sobat and the Atbara drain the high plateau of Ethiopia, carry the fertilizing lime to Sudan and Egypt. Ethiopia is the most important contributor of water to the Nile. The Ethiopian catchment area covers the Blue Nile, Sobat and Atbara which provide some 86 per cent of the Nile's water. (Bulloch and Darwish 1994 : 86-87)On the basis of its share, Ethiopia should be entitled to a large portion of the Nile's water but in reality it uses a small portion of it. In addition, Sudan has the largest share of the drainage area of the Nile and its share in the basins of the White Nile, Atbara and Sobat make it a significant partner in the utilization of the Nile's waters. However,its particular contribution to water balance of the Nile is negative due to the huge water loss in the Sudd. In short, most of the Nile waters is consumed by Sudan and Egypt.

2. The Riparian States Of The Nile River

a).EGYPT

The Nile is considered by Egypt to be its life and has shaped its culture over the years . Without the Nile, its existence would be very different. The Blue Nile waters are its unique source of water. It contributes no water to the river, but it uses most of its waters. 97 % of its territories, except the Nile delta, are desert and nearly empty. The majority of the population live in the Nile valley and on the Nile Delta .(Gowers and Walker 1989: 58)

The agriculture in Egypt is extremely dependent on irrigation. If it is taken into consideration the fact that the rainfall level is almost at the lowest avarage and no additional water resources exist in that country, the Nile waters are the only water resource for this purpose. The water is distributed through public canals. In addition to this fact, all Egypt's water resources are shared among eight countries and can be controlled by three countries that provide this flow . (Ghali 1992 :33-34)

A number of dams have been built on the Nile with the aim of regulating its flow and to provide water during the low seasons. The most important of these dams is the Aswan High

Dam completed in 1971 with Soviet help. Egypt has developed its own separate water projects. Many water projects were primarily intended to serve Egyptian needs. Its water policy is centered on an over- year storage at Aswan. The Aswan High Dam's purpose was to provide long-term storage of water against floods and droughts which it did successfully during the 70s and early 1980s. The Aswan dam is a guarantee of Egypt's hydrological security because the sources of the river are in different, or even in hostile countries. This dam would provide freedom from foreign control over Egyptian waters.However it has been criticized for its effectiveness as a water regulating system. As well as its storage facilities, it also generates electricity. (Beschorner 1993 :47-52)

Until the 1980s, Egypt faced no real problems in dealing with the shortage of Nile water. For that reason, no comprehensive planning and development related to the Nile waters was made.When the Nile water flow level dropped to its lowest point during the summer of 1988, Egypt encountered a water deficit. This event led to thinking about the dangers of unpredicted water shortages and to modify old irrigation methods. After that event, the water security issue came to the top of their national priorities.

The rising population growth rate in Egypt led them to be aware of the fact that the existing water supplies will not be able to meet expected demand in the future. In addition to that

problem, inefficient use of avaliable supplies have jeopardized the life in

Egypt. These internal difficulties have also been putting extra pressure on the Egyptian government. In his speech, Dr. Bouthros Ghali, the UN Secretery General stated this sitatiuation:

> ".... According to estimations, If the present conditions continuing by 2010s, Egypt will encounter water shortages.... We need 5 milliard MCM every year....." (Ghali 1993 :5-7)

As the main user of the Nile waters, Egypt makes no contribution to the flow of the Nile. Owing to its downstream position, it is extremely sensitive to the developments in upstream countries. The other Nile's eight riparian states held a trump card against Egypt by threatening the change of the Nile flow,especially Ethiopia, but The Egyptian Foreign Policy decisions show that the issue, namely the water security, has been the country's main security concern and in case of a direct threat to the flow of Nile, this will be a reason for war and military intervention.

Instead of military aims, they prefer diplomatic solutions. By the help of diplomacy, the Egypt has been trying to realize a comprehensive regional development and cooperation which

will concern all riparian states. But at present, these attempts have not reached any important level and treaties.

b).SUDAN

As the second riparian state of the Nile waters, Sudan has considerable need for its waters. The Sudan is divided into two regions by development and climatic aspects. In parallel to these differences, there exists the geographic settlement contrast. The north region of the country is desert and semi-arid whereas its south is covered with marshes and swamps.The most productive, fruitful areas are those the surrounding its capital, Khartoum and its middle territories.(Kliot 1993 :30)

Both the White Nile and the Blue Nile flow within the country.The average annuall discharge of the White Nile at the south of Khartoum is 26 km3, the Blue Nile and its tributaries,the Rahad and Dinder is 51 km3 and that of the Athaba river 12 km3. (Beschorner 1993 : 52-54)

The country's economy is heavily dependent on agriculture. The country's cultivated area is nearly 11.2 m ha and 50 % of its irrigation has been made by rain-fed. Cotton cultivation has increasingly taken place over agriculture, since it has been Sudan's principal export crop over the past 50 years.(Beschorner 1993 :53) At present, this trend has changed in favour of food crops due to the existence of drought in the south region of the country. To develop irrigation and to

improve water resource management, Sudan needs a great deal of investment in the most basic infrastructures, However, the country's political instability has affected negatively the implementing projects related to the development of the White Nile.

These projects aimed to recover the Upper Nile, are Jonglei I and II. Due to the political and technical difficulties, implementation has been hindered The Jonglei Canal projects were put forward in 1936 with the aim of using he Central African Lakes as huge reservoirs which would regulate the flow of the water between seasons. While the evaporation level of the White Nile is very high, assisted by the building of these canals, the estimated 25-50 billion cubic meters lost due to the evaporation in the swamps the southern Sudan, would be available. The canal working was stopped in 1989 by guerrillas. By reason of the civil war in the southern region and not providing regional security, only 2/ 3 of the canal has been completed. (Bulloch and Darwish 1994 : 98-110)

Since its independence in 1956, the country has suffered from civil war. The under-developed southern region where the negro and non-muslim population live , is opposed to integrating with the northern regions where the Arabs live and the imposition of Islamic law. They have demanded authority over the resources used by the north.(Bulloch and Darwish 1994 :121)

Today, an Islamic government has taken power in Sudan and is attempting to prosecute the war in the south brought about by the rebellion of the ***Sudanese People's Liberation Army (SPLA).***

d).The East African Riparians

The upstream countries of the Nile waters, namely Uganda, Kenya, Tanzania, Burundi, Rwanda and Zaire are not yet making any significant use of its waters. Their interests in the Nile waters mainly concern power production and the control of floods. In the East Africa, Kenya, Uganda and Tanzania are intending to develop projects around Lake Victoria which would lessen the flow of the White Nile. but none of the states has achieved their share to a significant extent.

d).Ethiopia

During the last twenty years, Ethiopia has struggled with rebellion, civil war, disintegration and famine. Today, he country is slowly emerging on the international stage is a nation. Although it has been called the water tower of Africa, it could not use efficiently these resources due to financial and technical difficulties and civil war.

Ethiopia's power over the Nile is derived from its being effective over eleven rivers that rise in the Ethiopian highlands and flow through Sudan and Egypt. By the far the largest river,

the Blue Nile provides nearly 50 billion cubic meters to Ethiopia and delivered to Sudan and Somali territories. It can be said that Ethiopia has its hands on the taps that supply Sudan and Egypt.

Until recently, Ethiopia showed little interest in the hydraulic potential of the river. Studies for a variety of storage, irrigation and hydro-power projects along the river already exist, but the government seems to have no power to fund these projects. It needs foreign financial and technical aid. Israel has offered to advice Ethiopia on where and how dams should be built. Hence, Israel can affect indirectly Egypt's diminishing use of the Blue Nile.(Kliot 1993 :66-69)

In Ethiopia, various projects were put forward over the years. One of these plans was to use Lake Tana for storage. However, due to great powers rivalry, no plan has been implemented. In many places such as at the UN international conference on water at Mar del Plata in Argentina in 1977 and at the 1981 UN conference on Less Developed Countries, Ethiopia notably offered its Blue Nile development and utilization projects. As Egypt assumed no diverse action as a hostile intent, Ethiopia can not use effectively its water resources for irrigation and hydro-electric purposes. In addition has made no effort to promote basin-wide cooperation. (Bulloch and Darwish 1993 : 89-98)

3. Development Projects of the Nile River

The first hydraulic works on the Delta Barrage were undertaken by Egypt during the 19 th century. From that time, Egypt has pursued many plans for land reclamation and for a number of dams and barrages. The Aswam dam was built in 1970 in order to provide stored water. It was followed by the strengthening of the Delta Barrage and by the building of other barrages at Assiut and the Esna, with the aim of raising the river's level. (Irrigation Project To Boost Crop Yields in Nile River Valley, Middle East Water & Sewage 1981 :265-267)

At present, the favourable and unfavourable consequences of the Aswan Dam are being discussed in Egypt. It has provided to generate hydro-electric power and for flood control. During the extented drought of the 1980's, the Aswan High Dam enabled Egypt to cope with this situation and even increase its agricultural producion while Ethiopia and Sudan suffered severe famines. In addition, all the fertile silt from Ethiopia is stored in the Lake. This situation has caused deprivation to the farmers of valuable natural fertilisers and to increase the risk of coastal erosion. This is the controversial side of the dam.(Kliot 1993 :48-49)

Outside Egypt, on the Blue Nile in the Sudan, a number of dams were built in order to store water in the period of floods for the usage in the seasons of low water and for the generation of electricity. These are Jabal Auliya, Sennar, Roseiras and Khashm al-Girba. The Roseiras dam is the most important dam

among them. It was built near the Ethiopian border. Its primary purpose has been to increase the Blue Nile storage. (Beshorber 1993 :53-54)

While Ethiopia and the other upper riparian countries have not substantially utilised the Nile waters for irrigation purposes in their territories, they intend to supply a share of its waters for their own future hydraulic development. In Ethiopia, there are plans to utilize the waters of the Blue Nile. To give an example, the Tana Beles irrigation project which is going to divert the waters of Lake Tana into the valley of the Beles.(Beschorner 1993 :56)

In Uganda, the Owen Falls Dam completed in 1954, is the first control work on the Upper White Nile. It has hydro-electric power as its principal function, but at the same time, it controls the outflow of Lake Victoria, which has been converted into the largest reservoir in the World. Furthermore, Kenya and Uganda governments have turned their efforts to the swamp reclamation in the Lake Victoria sub-basin.(Labib in Bagış 1994 :382)

To realise a comprehensive Nile Basin development, the neighbouring countries have been engaged in a joint project called , *HYDROMET* since 1967. This project has been aimed to coordinate studies among co-riparians and to conduct hydro analysis of Lakes Victoria, Kyoga and Mobutu Sese Seko. A water quality and enviromental impact model of the Upper Nile

basin has recently been created, However, Ethiopia are not involved in this joint project consequently, it has not reached the desired outcome for all co-riparians. (Ghali 1993 :33-34)

4.Water Negotiations And Political Relationships Among the Riparians

Up to now, the Nile basin disputes over water allocation have been not satisfied by a comprehensive agreement and treaties which would bind all riparian states. The most significant point in the Nile course is the fact that the upstream states are not yet using efficiently the waters of the Nile. At present, the significant usage of its waters is made by the two downstream countries, Sudan and Egypt.Especially Egypt, as a prominent downstream user state has been seeking some formulations to secure the control of its waters and to prevent itself from political threats made by upstream states.

Egypt has been claiming priority through its " historical rights ". Under the British Colonial Period, these rights were protected in every existing agreement. Any irrigation works or building dam which would result in decreasing the flow of Nile to Egypt, was not approved. (Kliot 1993 :81)The Nile Waters Agreement of May 1929 between Egypt and Britain (representing Sudan, Kenya, Tanzania, and Uganda) was based on the assumption that Egypt's utilisation rights were paramount. As to this agreement, 48 km3 water was allocated

to Egypt and 4 km3 to Sudan. Moreover, Egypt acquired a right of veto, if it encountered any upstream-dam projects which leads to a reduction of the water quantity arriving and to modify the way of its arrival. (Beschorner 1993:57)

Egypt and Sudan solely have a considerable interest in the basin-wide management scheme and only those two countries have been trying to renegotiate, However no long term political and technical solution to the Nile waters are possible without the involvement of Ethiopia, because reservoirs on the Blue Nile located in Ethiopia territory offer to compensate for all the co-riparians water needs. Ethiopia does not yet appear to cooperate in this issue.

The two downstream countries have already allocated the flow of Nile between themselves without appearently taking into account the upstream water course states' development needs and rights. To date, this treaty is the 1959 Agreement for Full Utilisation of the Nile Waters between Egypt and Sudan.Flows were allocated on a ratio of 3 : 1 in Egypt's favor. Implementation and supervision of the agreement was placed in the hands of a Permanent Joint Technical Commision (PJTC). The agreement has been applied until now.

This position has perpetuated the ignorance of legal, natural and not yet fully utilised rights of Ethiopia and other upper riparians. The upstream watercourse states have asserted that the 1959 Nile Waters Agreement was from the outset,

inequitable in that the water allocation of the Nile was bi-lateral in nature. Therefore, they insist that a new agreement should be made which will take into account all watercourse states' demands.

In recent years, the Nile watercourse states have endeavoured to establish regional cooperation for the management and utilisation of the Nile waters. It can be said that the initial step towards regional cooperation was the agreement for the Hydrometrological Survey of Lakes Victoria, Kyoga and Mobuto Sese Seko in 1967. (as mentioned previous pages.) All members of Nile co-riparians, except Ethiopia participated in the Hydromet Project. It aimed to provide an intergovernmental cooperation in the storage, regulation, and use of the Nile, but this project is related to only the Equatorial Lakes, not including all the Nile basin. On the other hand, it has served as a forum for informal discussions among the Nile's riparians.(Labib in Bağış 1994 :382-385)

Apart from the Hydromet Project, there have been several efforts towards regional cooperation under the auspices of international organisations, like the United Nation Development Program (UNDP). The role of international organisations at present is that they can support the projects technically and economically and organise a forum to discuss the water problems among all the Nile watercourse states. As mentioned earlier, the watercourse states lack the neccessary investment

and capital to implement large scale water resources development projects without external assistance.

Recently, as a consequence to lack of consensus among them, these efforts have failed. One of main reasons for these disagreements come from the fact that no certain decision as been taken on which of the international legal rules and principles should apply as regards the allocation of the Nile waters. All the Nile watercourse states are of the view that regional cooperation should be based on the basis of the principle of equitable utilisation and not to cause appreciable harm. However, Egypt and Sudan, seem to insist that the 1959 Nile Waters Agreement is non-negotiable. On the other hand, the fact that most of the upstream Nile watercourse states have not yet exactly defined their future water demands prohibits the regional cooperative efforts.

III.THE LEGAL ASPECTS OF THE NON-NAVIGATIONAL USES OF THE TRANSBOUNDARY RIVER SYSTEMS IN THE MIDDLE EAST

In recent years, the increase in competing demands for fresh water resources has increasingly led to the requirement of legal rules and institutional mechanisms. Especially, the utilization of transboundary rivers has acquired considerable importance. The rivers that run through two or more states, create conflicts between upstream and downstream users of the water.

However, there is no comprehensive set of international rules applicable to all cases in this field. Many series of bilateral and multilateral treaties are settled between interested countries. Some treaties form a reference tool of State practice. But, they have not led to the generally binding customary law on non-navigational use of transboundary watercourses due to the different features of each river in the world. In the absence of

precise rules and principles that define the rights and obligations of the riparian states, except navigation, cooperation and negotiations among watercourse states play an important role in the allocation of an international watercourse.

The transboundary rivers produce an upstream-downstream dichotomy which results in a water competition between the riparian states. As a consequence to the generation of water within their territories, the upstream states usually base their claims on the right to do whatsoever they wish with the available water resources. They can unilaterally affect the amount of water reaching countries. The downstream states, on the other hand assert the idea that they have been using water from the rivers for a long time. Therefore, they should have acquired the right of continual usage. When water resources have become increasingly scarce, countries have tried to ensure their own supply. (Beaumont 1978: 3) Such conflicting interests makes international dispute inevitable and increase the probability of armed conflict between downstream and upstream states.

The principles of navigational uses of transboundary waters were determined a long time ago by multilateral and bilateral agreements. The codification of non-navigational uses of the transboundary waters began at the beginning of the 20th century, after the question of the utilisation of the flow of

international rivers had acquired considerable importance except for navigational purposes. Many non-governmental organisations have taken part in this codification process.(Kara Kuvv :1994 15-21) It should be mentioned here that the acts of international organizations may identify general principles of law which are binding on states. Chief among them the International Law Association and the United Nations of International Law Commission. The International Law Association adopted practices of states as guiding principles.We will mention the works of those organizations in the next chapter and briefly these principles in the second section.

The Middle East is not the only place where water crises and disputes exist, but it is the region in which the potential for conflicts over water is at its most extreme. A long history of war, border disputes and the presence of oil make the binding international agreements most pressing. While the rights and obligations of the interested states of transboundary rivers have not been defined clearly by international law, to reach an agreement which satisfies all states seems not to be easy in that region. All states have tended to assert their exclusive sovereign rights of the water usage flowing within their territory. (Solanes 1992 : 117-118)

In addition, in the Middle East, countries are not accustomed to resort to negotiations, law or arbitration in settling differences. For instance, as the Jordan river's dominant power,

Israel had little interest to take into account the existing agreements. Moreover, to reach a comprehensive solution over some Middle East's transboundary waters, a political settlement should be provided before negotiation as with the Jordan river. The application of existing international law principles to three cases, namely the Jordan river, the Euphrates/ Tigris and the Nile will comprise in the third section of this chapter.

A.Works Of Non-Governmental Organizations On The Law Of The Non-Navigational Uses Of International Watercourses

To codify the use of transboundary waters, some non-governmental organisation such as the International Law Association and the International Law Commision, an organ of the United Nations have made many efforts. The attempts by International Law Association and its UN appointed commission to address the issue of inter-state water share are fairly recent, as the earliest efforts go back only to Helsinki Conference of 1966. In that conference, a set of rules were accepted and published that also known as the ***Helsinki Principles for the Use of International Rivers.*** These principles were a starting point by any international organisation to codify the law of

cross-boundary rivers and waterways.(Bulloch and Darwish 1994 : 167-168)

The Helsinki rules were based on four main principles of international law accepted during the forty-eight session of the International Law Association in 1958. Although these rules have not a binding character, they have become a useful base for settling some disputes and have impacts in the formulation of bilateral or multilateral agreements. These principles laid down :

" Each river draining into a single basin has to be treated as an integrated unity unless agreed in separate treaties; every state on the system has the right to a reasonably equitable use of the water within the system; the states sharing the basin have to respect the legal rights of other states in the basin; there is a duty to hinder others from violating the rights of the riparian states." (Bulloch and Darwish 1994 : 150).

The ILA's Helsinki rules provides a convenient framework for the development of an appropriate body of rules and principles governing international watercourses.

The attempts of the United Nations in this field had started in 1959, by the appointment of an International Law Commision with the purpose of codification and progressive development of the law of the non-navigational uses of international

watercourses. But the commision included this topic into its programme at its twenty-third session in 1971. The ILC's progress was extremely slow.

In March 1977, the United Nations Water Conference was held in Mar Del Plata, Argentina. The " Mar Del Plata Action Plan " adopted in this conference. The plan includes a number of recommendations and resolutions concerning the management and utilization of water resources. In addition, the Action Plan has proposed an international co-operation on the basis equality, sovereignty and territorial integrity of all states. (Falkenmark 1990 :184) Downstream countries argued strongly for a " code of conduct" to encourage upstream countries to recognize their vulnerability to any changes. The outcome of the conference was that the efforts of the ILC to codify non-navigational uses of international rivers are being fulfilled to a certain extent.

In 1980, the ILC submitted the first set of draft articles to the UN General Assembly. Until the mid-1980s, the commission dealt with the nature of international watercourses. There had major difficulties in the determination of a precise definition of international water resources. Many words and terms used to describe rivers that flow across territorial boundaries, such as contiguous waters, successive, drainage basin, international river system, transboundary water course etc... (Krishna 1992 :

11)The ILA at its fifty-first conference in Helsinki in 1966 adopted the term 'drainage basin' which means;

> ".. a geographical area extending over two or more states determined by the watershed limits of the system of waters, including surface and groundwaters, flowing into a common terminus.. " (Helsinki Rules, Chapter I, Article II, 1966)

On the other hand, the ILC in its first part of articles defines the term ' international watercourse ' as follows;

> ".. a watercourse, parts of which are situated in different states; watercourse means a system of surface waters and groundwaters constituting by the virtue of their physical relationship a unitary whole and normally flowing into a common terminus.."(The UN Draft Article 2, Use of Terms,(a) and (b), 2May-22July 1994).

Thus, international watercourses are now recognized as systems of surface and underground waters whose various components form a unitary whole.

By 1987, several articles had been provisionally adopted by the ILC. In 1988, at its meeting, the ILC took up draft articles on

exchange of information, environmental protection and preservation. At the forty-third session of the ILC in 1991, the draft articles had grown from seventeen to thirty-two. Finally, on 22nd July 1994 , at its forty-six session in Çeneva, the ILC had been completed on the second reading a set of draft articles of non-navigational uses of international watercourses. (Orta-Dogu'da Su Sorunu, Dışişleri Bakanlıgı 1994 : 26-27) Those draft articles have not yet been transmitted to the UN General Assembly. They have consituted general rules that can be applicable and alterable to agreements concluded between watercourse states. Moreover, in the absence of specific agreement, those set of general rules will be guidance in order to settle disputes between interested states.

One of the most important parts of the draft is part II where general principles are presented. The first refers to the right of a riparian state to ' equitable and reasonable utilization ' as set out in articles 5 and 6. According to Article 5 and 6

Article 5

Equitable and reasonable utilization and participation

(1) Watercourse states shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and

developed by watercourse states with a view to attaining optimal utilization thereof and benefits therefrom consistent with adequate protection in the watercourse.

(2)Watercourse states shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof as provided in the present, articles.

Article 6

Factors relevant to equitable and reasonable utilization

1.Article 6 requires taking into account all relevant factors and circumstances, including ;

(a) geographic, hydrographic, hydrological, climatic, Ecological and other factors of a natural character;

(b) The social and economic needs of the watercourse States concerned ;

(c) The population dependent on the watercourse in each watercourse states;

(d) The effects of the use or uses of the watercourse in one state on other watercourse states;

(e) Existing and potential uses of the watercourse,

(f) Conservation, protection, development and economy of the use of the water resources of the watercourse and the costs of measures taken to that effect;

(g) The availability of alternatives, of corresponding value, to a particular planned or existing use.

2. In the application of article 5 or paragraph 1 of this article, watercourse states concerned shall, when the need arises, enter into consultations. " (Draft Articles of the ILC on the Law of the Non-Navigational Uses of International Watercourses adopted on Second Reading at its forty-six session, Chapter II, 1994).

Apart from the ILC' draft articles, the equitable utilization principle has been replaced by the ILA in the Helsinki Rules and used in a number of international agreements. This is shown that in practice, the equity principle and equitable usage is becoming a norm of international law. According to this view, every riparian states has the equal right to use the waters of international watercourse and this utilization should be in a reasonable and equitable manner.However, this equality does not mean portionally or equally sharing the waters, rather the usage in a equitable manner. (Orta-Dogu'da Su Sorunu, Dışişleri Bakanlıgı 1994 : 26-27)

For optimal utilization mentioned in the article, the cooperation is required between riparian states through their participation in the protection and development of the watercourse in such following matters; as flood-control, pollution, drought and river regulation. In 6 many indicative factors are given in order to determine the scope of a state's right of equitable and reasonable utilization. The important point here is taking into account other alternatives which can compensate the country's social and economic needs in equitable utilization.

The other most widely recognized principle is to duty not to cause substantial injury set forth in Article 7 of the ILC draft. This principle stems from the proposition to use your own property in such manner as not to injure that of another --latin mean, **Sic utere tuo ut alienum non laedas.** (Solanes 1992: 117) In this way, watercourse states are obliged not to cause significant harm.

According to Article 7;

Article 7

Obligation not to cause significant harm

(1)Watercourse states shall exercise due diligence to utilize an international watercourse in such a way as not cause significant harm to other watercourse states.

(2)Where, despite the exercise of due diligence, significant harm is caused to another watercourse State, the State whose use causes the harm, shall, in the absence of agreement to such use, consult with state suffering such harm over :

(a) the extent to which use is equitable and reasonable taking into account the factors listed in article 6;

(b) the question of ad hoc adjustments to its utilization, designed to eliminate or mitigate any such harm caused and, where appropriate, the question of compensation. (Draft Articles of the ILC on the Law of the Non-Navigational Uses of International Watercourses adopted on Second Reading at its forty-six session, Chapter II, 1994).

This article was completely rearranged in the last draft. The term ' appreciable harm' used in the previous draft was changed to 'significant harm'. The harm must be significant, that is, it must have an impact of some results, in order to breach of a riparian interest. In an international watercourse system, each riparian state naturally maintains its full sovereignty over the part of the watercourse within its territory.But, riparian states, while utilizing the water, should take into account not to give substantial harm to lower riparians. Moreover, the harm has been connected with 'due

diligience'. The states must take all reasonable measures to prevent adverse effects from one territory to another. Namely, a country will not be responsible for significant harm when it exercises due diligience to prevent. (Dışişleri Bakanlıgı 1994 :30)

Another important principle is the general obligation to cooperate in the attainment of optimal utilization and adequate protection of international watercourses' as referred to in article 8;

Article 8

General Obligation to Cooperate

> Watercourse states shall cooperate on the basis of sovereign equality, territorial integrity and mutual benefit in order to attain optimal utilization and adequate protection of an international watercourse. (Draft Articles of the ILC on the Law of the Non-Navigational Uses of International Watercourses dopted on Second Reading at its forty-six session, hapter II, 1994)

This article intends that a waterbasin should be elop jointly and managed as a unit without regard to international borders.

The importance of cooperation in the utilization of international watercourses has been emphasized in many declarations and plans like the Mar del Plata Action Plan. At the same time it forms the basis for the regular exchange of data and information for the other parts of the draft.

The third parts of draft deals with the procedural duties of notification, and exchange of data and information, and pollution. There is an obligation to give prior notice to other states about the possible effects of its projects, before it is implemented. This notification is aimed for technical reasons and never means the affirmative consent of the interested riparian states. Thus, the interested state can take the necessary technical measures.

All of these are the affirmative sides of the draft, there are some missing points concerning the confined groundwaters.The draft does not directly deal with confined water resources. This topic is now on the agenda of the ILC for future codification. The main feature of the draft is the notion of equitable and reasonable utilization with an obligation to cooperate and not to cause significant harm to others. Moreover, the draft articles give prominence to negotiations among watercourse states in the event of a conflict. If mediation or concilitiation cannot be provided, in the last article it is suggested to establish a Fact-Finding Commission.The ILC's efforts concentrate on the development of a framework or namely an appropriate

reference tool for the riparian states.In the absence of any agreement, the general principles will be taken into consideration in order to settle a conflict.

B. Background To Legal Aspects Of Non-Navigational Uses Of Transboundary River Systems

In international watercourse legal issues, there are four competitive general doctrines which are applicable to international watercourse disputes. They are ; Absolute Territorial Sovereignty, Absolute Territorial Integrity, Restricted Territorial Sovereignty and Optimal Development and Community of Property. (Frey 1993 :7-8)

The first doctrine, the Absolute Territorial Sovereignty called also the Harmon Doctrine, asserts that a riparian state has the absolute freedom to utilize the water flowing in its territories regardless of any effects upon other riparian states. All water resources are the sovereign property of the country in which they rise and that downstream countries have no rights. This view was first applied in the Rio Grande conflict between the US and Mexico in 1895, which considered the absolute sovereignty of the upper riparian state, namely the US in the mentioned dispute. But, this view was criticized from the point of giving all rights to only one side, therefore it is nowadays obsolete. ("Sınıraşan Sular ve Ortadoğu'da Su Sorunu", Harp Akademileri Yay. 1994 :26).

According to the second doctrine, Absolute Territorial Integrity, a riparian state may not use waters flowing within its land in a way that could have unfavorable results on other

riparian states. This doctrine anticipates to prohibit any facilities which will affect the flowing of water and the benefit of lower riparian states. For this reason, upstream countries do not have the right to alter the flow in a way that would affect the use of the downstream country. (İnan in Bağış 1994:231) For instance in the Nile basin, Egypt and in the Tigris/Euphrates basin, Iraq have a veto right to hinder any diversion facilities. This doctrine like the first one, is rejected and not considered as an international law.

Midway between the two above-mentioned doctrines, there exist a third doctrine which has been supported by states and international organisations. According to the Restricted Territorial Sovereignty doctrine, sharing of international water resources should be 'reasonable' and 'equitable' meaning that a riparian state is not allowed to utilize the water of an international river in a way which causes significant harm to the reasonable utilization by the others rights. With this view, the sovereign rights of the upper riparian state is limited and the rights of lower riparian is protected. "Equitable and reasonable utilization" have two main aspects; one is that the interests of all riparian countries have been taken into account and the other one is to provide an interchange of data, information and co-operation in their use. Restricted sovereignty has become the customary rule of international law as evidence by many treaties based on this doctrine.(Chalabi 1994 : 33-36)

The fourth doctrine, optimal development and community property favors ignoring political divisions in order to achieve maximum utilization of international water courses. This concept requires a high level of integration between the riparian states.But this seems to be very difficult in places where political conflicts' grade among states are high. In fact, a number of international meetings recently have adopted this principle. (İnan in Bagış 1994 :231)

In practise, the equity principle is becoming a norm of international law, both in optimum usage and also in the settlement of international watercourse disputes. With the acceptance by the ILC of this principle, the riparian states should take it into account .Up to now, the work on the law of the non-navigational uses of the transboundary river systems could not be complete. In fact, the parties to the Middle water conflicts should negotiate directly between themselves to reach a settlement based on the principles of "equitable apportionment" and "community of interest" at the first instance.

C. The Application Of International Law Principles To The Transboundary River Systems In The Middle East

Application of both the Helsinki and the International Law Commision Rules to the Nile, the Tigris-Euphrates and the Jordan has been very difficult as a result of pursuing each riparian states conflicting sovereignty doctrines. Every states would like to protect its self interest and enjoy full sovereignty over the part of the river flowing through its territory. In addition, they are looking for gaining the largest share of water flowing their territories.

Usually lower riparians assert historical rights based on the natural flow of the river, while upper riparians emphasize the absolute sovereign rights doctrine. Resolution in water disputes in that region might be possible through binding treaties. The few agreements on international river utilization in the Middle East have already existed. The existing principles can only provide a guiding framework for specific negotiations.

In the Tigris-Euphrates basin, each co-riparian refers different relevant principles of international law in support of their arguments. Disagreements can be summerized as follows ; downstream states, Syria and Iraq consider that the Euphrates

and Tigris are separate rivers from each other and the subject of its problem is only the Euphrates. Moreover, they are also international (common) waters that have to be treated as an integral unit and the utilization of its waters should be made accordingly. There cannot be limitation on any upstream country's based on its territorial sovereignty claim. (Chalabi 1994:33-36)As Iraq has established its use of waters, it asserts its prior rights in other words the historical.The realization of the GAP project in the future are assumed by Syrai and Iraq as a direct threat to their usage. As the upper riparian Turkey is the commanding actor among its co-riparians, it stresses that the Euphrates and the Tigris constitute a single hydrological system, since they unite before discharging into the Shatt-al Arab. At the same time, Iraq's usage of both rivers waters at the Thartar Canal Project which convey the Tigris waters to the Euphrates has supported this view.(Kut 1993 :10) Furthermore, Turkey argues that international rivers are only those which form the border between two or more riparians.Therefore the Euphrates-Tigris must be considered as transboundary rivers that whose waters are under Turkey 's sovereignty until it flows across the border into Syria and the waters shall be utilized in an equitable, reasonable and optimal manner. (Bagış 1994 : 23)

Up to now Turkey has tried to apply the above mentioned principles, particularly it took into account not to cause appreciable harm in the two other riparian countries as Turkey has made unilaterally a pledge of releasing an average of 500

cmc/sec of Euphrates waters to compensate the reducement at the Syrian border. Moreover, Turkey did act reasonably in filling the Atatürk Dam, While at the same time keeping Syria and Iraq fully informed of technical reasons and its results.

Turkey emphasizes the cooperation and peaceful agreement with the other riparian countries. It has provided many examples for its sensitivity and peaceful cooperation. For instance, in 1987, Turkey offered to the Peace Water Pipeline to transport potable water from Seyhan and Ceyhan Rivers to Syria, Iraq, Jordan and Saudi Arabia. In addition, Turkey formulated a three-stage plan to realize the equitable,reasonable and optimal utilization of the Tigris-Euphrates waters. The plan consisted of three main section under the following; Inventory Studies for Water Resources, Inventory Studies for Land Resources and Evaluation of Water and Land Resources. It aimed at joint studies for optimal and rational utilization of water and land resources and exchange of data in mentioned topics. But these efforts have not been implemented due to the lower riparian states approach. This plan was considered as a restriction on their sovereign rights. (Kut 1993 :13)

In fact, Syria' legal position on water rights has been contradictory, since it is both an upper and a lower riparian country on different river systems. Syria, the upper riparian of both Yarmuk and Orontes, has been building a series of dams

without taking into account their effects on downstream countries. The waters reaching Israel and Jordan have been significantly decreased as a consequence of the dams on the Yarmuk.

In the Orontes issue, Syria has not recognized it as an international river, however the river rises in Lebanon to flow through Syria and Turkey into the Mediterranean Sea, from the Hatay Region. Not only did any hidrolic project accept decided by Lebanon, but also reject the discussion of sovereign status of Orontes. In addition, its two dam projects are going to cause the reduction of the flow of Orontes through Turkey, particularly during the summer the river dries up before it reaches Turkey. There seems to no fair utilization of the Orontes in the aspect of Syria. There is justified cause for Turkey to complain about how the water of the Orontes is completely consumed by Syria and Lebanon, while Turkey releases informally 500 cubic meters of water. Syria considers that a general agreement with Turkey would have to cover the Orontes, but that would bring in the disputed province of Hatay as the river runs through that region of Turkey. The agreement means the recognition of Hatay as Turkish. Turkey attempted to establish a resemblance between Orontes and Euphrates, however Syria rejected this and showed different claims in the two river cases. (Picard in Bagış 1994 : 217)

Up to now, no written agreement between Turkey and the lower riparian states has been achieved. In the short run, this sort of an agreement seems impossible unless the lower riparians approach to this concern are realistic and by goodwill.

In the Jordan river basin, Syria being its upper riparian have claimed that the Jordan and Yarmuk rivers arise in Arab Lands and it should have absolute territorial sovereign rights over the parts of the Jordan river which it possesses. This claim was proved by Syria's attempt to divert the Banias and the Yarmouk. It has not taken into account the causes of such actions to the other riparian states. Jordan, on the other hand has accepted the principle that the waters of the Jordan should be divided fairly among the riparians. Jordan has, in fact reached an informal arrangement with Israel over the division of the water under the 1956 Johnston Plan, at the moment however Jordan claims that Israel is using more that its share. The Palestinians suffer from water shortages. Now, there exists a strong inbalance between Isareli and Palestinian uses of these waters. (Kliot 1994 :272-275)

Until 1967, Israel being a lower riparian to the others, supported the principle of an equitable share without causing any harm to others. After that date, Israel eliminated Syria as an upper riparian and greatly reduced the presence of Jordan. As a result, Israel changed its claims through absolute territorial sovereignty. That military occupation brought about

a very important outcome as to whether Israel has full power in the distribution and utilization of waters in the occupied territories or not ? The General Assembly and Security Council of the United Nations have adopted several resolutions declaring the illegality of actions taken by Israel in the mentioned territories, including water resources of the territories. According to the resolutions, the right of permanent sovereignty over natural resources belongs to the Arab States and peoples whose territories are under Israeli occupation. Therefore Israel's plans to convey Jordan river water to the region of the Negev was presumed illegal by the United Nations Security Council in 1962 due to the lack of constent of interested parties and a threat to the peace and security (Gruen in Bagış 1994 : 269).

Syria has always not wanted to negotiate with Israel in matters of Jordan waters. Its policy is the non-recognition of the legitimacy of the Jewish state, in parallel Israel has not been a riparian country of the Jordan river from the point of Syria. Therefore there has not been assertion to a claim to the Jordan waters. In short the Syrian attitude constitutes a serious obstacle to the Jordan water problem even though the Israel-Palestinian question has been solved by the agreement.

Water and political settlement are very much linked to each other in the Jordan River issue. A political settlement should involve the question of distributing waters avaliable to the

region. As the current political differences continue, it is difficult to see any cooperation. Syrian cooperation in joint projects seem to depend on the solution of the Golan problem with Israel. The beginning of the current Arab-Israeli peace process covering at least the territorial problems will no doubt lead to the solution of all conflict issues also including water as a whole. But a point is obvious that without Syria it is not possible to reach an equitable and optimum utilization on the Jordan River. Syria's policy seems to constrain this purpose.

Although the Nile river consists of nine riparian states practically, only two riparian states, Egypt and Sudan have great interest in the allocation of its waters. They have the larger share of the drainage area of the Nile, however their contribution to its flow are nothing. As Egypt has used the Nile since ancient times, it would like to continue with this ancient right in the future, because it is totally dependent on the Nile. The two countries assert that their existing use of the Nile waters are non-negotiable in any future water allocation of the Nile involving all its co-riparians. (Kliot 1994 : 95-99)

During the colonial period, Britain controlled and utilized the whole of the Nile basin at the favour of Egypt. The colonial agreements were denied by all upstream countries, because they were inequitable and did not take care of the rights of the upstream countries. (Beschorner 1993 : 57)

The 1929 agreement to share the Nile's water between Egypt and Britain (representing Sudan, Kenya,Tanzania and Uganda) shows Egyptian solidarity to the doctrine of absolute territorial integrity. As to this agreement, Egypt obtained the veto power to hinder upstream states' dam projects and 48 % of Nile waters were allocated to Egypt and 4 % Sudan. (Beschorner 1993 :57) In the 1959 Egyptian-Sudanese agreement on the Nile waters, Egypt did accept the principle of more equitable allocation of the Nile's waters, particularly in relation to the Sudan. On the other hand, the upstream watercourse states argue that this agreement was, from the outset unfair in that the water allocation of the Nile was bi-lateral in nature. They insist, therefore on a new agreement which will take into consideration the rights of all riparians.

To reach appropriate agreements is very important for Egypt. Ethiopia's projects that will reduce the flow of the Blue Nile to Egypt by a certain amount create anxiety for Egypt. For that reason, Egypt has supported the view of the no appreciable harm and argued that this principle should be the standard legal principle rather than equitable utilisation. Egypt and Sudan insist that Ethiopia undertake no works that cause "appreciable harm" on their existing activities. It can be added that the two countries' presenting utilization of the Nile are in contradiction to the equitable and reasonable utilization principle. On the other hand, Ethiopia claims equitable utilisation. Although Ethiopia has a large quantatity contribution to the drainage

basin of the Nile, it uses only 1% of its water. By a comprehensive agreement based on equal allocation this situation might be changed. (Labib in Bagış 1994 :372)

All states have agreed on the view that regional cooperation should be based on the basis of the principle of equitable utilisation and the duty not to cause significant harm, but an important point worth mentioning is that most of the upstream Nile states have not already defined their actual water demands and they do not know what they can claim, except Egypt and Sudan. This situation, therefore prevents a comprehensive of allocation and regional cooperation of the Nile waters cooperation.

In addition, the lack of political will and distrust among watercourse states, absence of political stability in certain riparians and the developmental differences between upstream-downstream states put constraint to any positive solution. Particularly, the lower -basin states have the military power to enforce their interest in the Nile basin, but the upper basin users have water and can cut it off or contaminate it. If the mutual confidence is enhanced between the countries which are located at the same river basin, it could be easy to move away from military outcomes.

As stated above, there are no comprehensive set of rules applicable to all international watercourses, but there are

certain principles of international law applicable to this field. At present the international watercourses disputes in the Middle East are going to be settled by the goodwill of the concerned states. It should be noted that in the absence of a regular system of binding international law any injustice or inequality can lead easily to further instability. An acceptable solution for the region's conflict over water is to increase the cooperation among the riparian states and to enhance mutual confidence.

IV.SUMMARY AND CONCLUSION

In the Middle East, water is one of the most important resources. Water has indeed always been a source of conflict in the Middle East, but the growing pressures on the existing sources aggravate this situation. Through history, the river systems of the Middle East played an important role in the development of the region. It is so vital in this most unstable region of the world that it could be a force for peace, forcing old enemies to cooperate for the common usage, as it has been between Israel and Jordan, which have agreed by an accord for the sharing of the Jordan river. However, history and current events show that it might also be a cause of war, like the Arab-Israeli conflict in 1967.

Rapidly growing populations, urbanization, water waste forms of agriculture and industrial development are bringing about a large and growing strain on water supplies. There is a growing concern that the Middle East will be confronted by a critical shortage in the near future. According to a report by the

Washington-based Center for Strategic and International Studies;

"...Before the 21st century, the struggle over limited and threatened water resources could sunder already fragile ties among regional states and lead to unprecedented upheaval within the area..." (Starr and Stoll 1988 : 14)

The most critical shortage and conflict of water in the region has been manifested in the Jordan river basin. This region has been involved in interstate conflict since the establishment of Israel in 1948, and the dispute over the Jordan river is an integral part of this conflict. An awareness also exists in every country that their current water resources are insufficient. The existing water resources should be developed immediately. The most problematic side of the water problem is the lack of coordination, mismanagement and inadequate interstate cooperation due to the existence of major political conflicts and the general lack of mutual trust between a number of interested states.

There are three main areas of concern: the Nile basin in, which nine countries are involved - Egypt, Sudan, Ethiopia, Uganda, Rwanda, Zaire, Burundi, Kenya and Tanzania. The Tigris-Euphrates river system, divided principally among Turkey,Syria and Iraq; and the Jordan river involving Israel, the Occupied

West Bank, Lebanon, Jordan and Syria. These Middle East rivers-the Euphrates, the Jordan and the Nile-with their tributaries have led to problems concerning the interest of states located within the river basin. It is a fact that rivers ignore political boundaries, in other words, watersheds are not defined politically. Most of the states in the Middle East depend heavily on water resources that originate outside their own borders. Egypt depends on Nile waters originating in African countries, while Syria and Iraq are dependent on the Euphrates and the Tigris rivers that rise in Turkey. Each country has preferred to use water as much as they can. The result has been a tragic waste of the waters of the region. Moreover, the efforts of states to maximize their benefits from the river without regard to the effect on its neighbours have intensified the tensions that raise the conflict.

All of these cases share certain basic characteristics as follows; there has been a conflict among the riparian states over the allocation and utilization of the three rivers' waters. All are located in arid or semi-arid zones. For some states, in each basin, dependence on the river system is great.The water is used heavily in agriculture and industry. Most of the riparian states have their economy based on agriculture and to achieve agricultural self-sufficiency is paramount. For instance for Saudi Arabia and Libya, food security is the main reason behind desert reclamation schemes in these areas. Furthermore, agriculture is given idelogically importance. We see in Israel.

As to the Zionist aspiration, to make the desert bloom and of national redemption which can be achieved through a return to the soil.(Naff and Matson 1984 : 1926). For some riparian states in each basin, unimpeded access to water resources is linked to national security concerns. In the Nile case, Egypt is almost totally dependent on the waters of the Nile, and considers any attempt to control water resources by other states as a direct threat to its national security. In all three cases, efforts have been made to reach a cooperative, basin-wide arrangement for the utilization of the waters of the river system. Agreement over the utilization of the river waters has been achieved in two of the cases, the Nile and the Jordan river.

Unlike the Euphrates and Jordan basins, the situation in the Nile basin can be considered a low-level conflict for the time being. Although it is shared by nine African co-riparians only two, Egypt and Sudan take full advantage of its waters. As Egypt is almost totally dependent on Nile waters, the country faces the biggest water needs. Since Egypt is the lowest riparian country in the Nile basin, it has little control over the actions of the eight upstream governments. The 1959 agreement had settled the disputes between Egypt and Sudan. However, Ethiopia causes the greatest concern to both Egypt and Sudan, for its tributaries provide some 85 percent of the Nile flow through these two states. Ethiopia has rejected to cooperate with Egypt and to join the Nile Basin association. Ethiopia uses

its strategic position against the other water-scarce riparians a bargaining tool. Egyptian diplomacy has tried to provide regional cooperation to overcome water problems and to improve its relations with Ethiopia, but achieved very little until now. The ideal solution to the Nile river problem is a basin-wide cooperation.

Although the Jordan river covers a smaller area than the others, it features as being the most politically sensitive one involving Israel, the Occupied territories, West Bank, Lebanon, Jordan and Syria. The main potential points in the area are between Jordan and Israel over plans to divert sections of the Jordan river, and among Jordan, Syria and Israel over proposed hydraulic works on the Yarmuk river. Moreover, any plans by Israel to supply its water from the Litani river in Lebanon and dispute over the allocation of water in the West Bank and Gaza Strip are potential causes of regional conflict. Prior to the 1967 War, the water dispute involved the four basin states. Since June 1967, when one of the upstream states, Syria lost its superior riparian position to Israeli forces, the water dispute has engaged Israel, Jordan, and the West Bank.

In order to overcome the problems of the Jordan river basin, the peace process has seemed to be suitable. That is more important for political questions, borders and security arrangements. All have to be solved one by one so that there will be no barriers left for water problems. With the changed

regional environment of the Middle East that has emerged since the end of the Cold War, the collapse of the Soviet Union and the 1991 war in the Gulf, Israel began a peace dialogue with its Arab neighbours. The 1993 Rabin-Arafat handshake set off more lasting change in the Middle East. Palestinians and the Israelis explicitly recognize each other's rights. This shows that the region may indeed be able to rid itself of the Arab-Israel problem within a few years, if Palestinians and Israelis can achieve to live side by side. While Jordan and Israel held secret talks in the last years, Jordan refused to make peace before the Palestinians did so. After the Oslo agreement, Jordan and Israel signed a peace treaty which set forth mutually the recognition of their allocation rights of the Jordan and Yarmuk river. That provides the acceptance of quotas established by American mediator Eric Johnston in 1955. The main difference is in the increase of the water quota in Jordan's favor. Shortly, the allocation of Jordan and Yarmuk waters have been realized by peace agreements.

In the case of the Tigris-Euphrates basin, The problem stems from Turkey's Southeastern Anatolian Project. With this project , the Euphrates river becomes the source of considerable international concern. The project will increase Turkey's hydroelectricity production.In 1990, the construction of the Atatürk Dam, the largest of the twenty-one dams, was finished and the flow of the Euphrates was interrupted for a month to partly fill the reservoir. Despite the notification of

Turkey, Syria and Iraq protested against the temporary cut-off saying that Turkey now had a water weapon that could be used against them. Indeed, Syria has given support to the Kurdish rebels operating in Southern Turkey. The PKK is an important fact of foreign policy of Syria against Turkey in the politcs of water. From that point, it can be asserted that the Turkish government has kept the Euphrates waters as a bargaining tool.

Until today, no progress has been made at reaching a tripartite agreement on water-sharing in the basin, despite the fact that in 1980, all three riparians agreed to establish a technical commision for the exchange of information. In 1987, Turkey and Syria signed a protocol on water and security. Turkey settled at the commitment to maintaining a Euphrates flow of 500 cubic metres per second.Discussions between Syria and Turkey are still continuing. The conflict over the Euphrates waters remains unresolved. The final stage of the GAP project is under way and in 1994, by the opening of the Urfa tunnels, the flow of the Euphrates has been firstly diverted. Syria and Iraq can do nothing to stop Turkey from implementing its project. As Turkey is economically and militarily the most powerful among the Mid-eastern countries, it has material gain from basin-wide cooperation. However, it intends to increase diplomatic relations with its Arab neighbors and to play a leading role in the Middle East. As to Turkey, the cooperative projects, including a three staged plan for optimum, reasonable utilization of the Euphrates and Tigris, will yield further

integrated cooperation among the states in every aspect. Neverthless, downstream users do not think the same way as Turkey and they are trying to bring the Euphrates-Tigris problem into the international political arena.

In the reducement of the risks of water-related conflict, international water law and institutions have played important roles despite the fact that no comprehensive binding set of rules applicable to all international watercourses do exist. Especially, international organizations, such as the International Law Associations and the International Law Commission, have attempted to derive general principles governing shared water resources. Among the general principles set forth are those of equitable utilization, the obligation not to cause significant harm and the obligation to cooperate and to exchange hydrologic and other relevant data and information on a regular basis. Regarding international law, neither upstream nor downstream countries have absolute sovereignty over shared water resources within their territory. These principles of adoption and application to the Middle East rivers are problematic because each state asserts different claims. The application of limited sovereignty principle, "equitable and reasonable utilization" causes a defining and quantifying problem for many nations.

Bilateral or multilateral water treaties have to be more effective in order to settle disputes. In the Middle East, there exists such agreements and statements which carry little weight due to the lack of enforcement mechanism. Developing such agreements on equitable and reasonable distribution is usually difficult because of the uncertainty of data over the volume of water. Reliable data are not available. This reliable data deficiency actually reflects a broader difficulty with information available. For political reasons, riparian governments consider water as a national security matter and closely guard the data. Thus, each riparian may cite data which supports its arguments and accusations.

Generally, states which are heavily dependent upon the basin waters seek to cooperate with the other riparians. In contrast, as the upstream state has a more favorable geographic position, it has no interest in a basin - wide cooperation, unless it benefits from regional cooperation. To give an example, the Jordan basin shows that fact as follows; for Israel and Jordan, an agreement on the distribution of the Jordan waters was essential, since both states are heavily dependent on the river system; it provides one-third of Israel's total water supply and more than two-thirds of Jordan's. However, for Lebanon and Syria, the Jordan river represents only a small resource and they have a favorable position of its basin. They have not been in favour of cooperation.

Although cooperation among the riparians is essential for all regional water development projects, such cooperation is very hard to achieve because it means the recognition of legitimacy . A Syrian-Israeli agreement would imply Syrian recognition of Israel; a Syrian-Turkish agreement concerning the Orontes River would indicate Syrian recognition of Turkish sovereignty over the Hatay region given to Turkey by France in 1939. Additionally, in absence of any agreement, international monetary bodies cannot finance water development projects. Turkey is not able to acquire money for the GAP due to the opposition of Iraq and Syria.

Even if cooperation were politically achieved, the region's waters would not be enough. What solutions are available for these shortages. While agriculture consumes a high percentage of Middle East water, one remedy might be the exchange of agriculture with other kinds of production. However, there is the fact that the states in the Middle East do not want to be dependent on the importation of food. Alternatively a shift from highly water- intensive crops (cotton in Egypt) to low water intensive might be suggested. Another solution might be a regional approach. That is, water from certain countries could be diverted to others, according to need. But the mistrust, lack of confidence and suspense among the riparian states prevent them from putting it into practice. For instance, neither Egypt

refuses to divert Nile water to Israel, nor will Lebanon do the same with the Litani.

There are also some proposed solutions in order to provide additional water resources to the regions. These are ; towing in icebergs, shipping water from Europe in tankers, the Turkish "peace pipeline" which would carry the water of the Ceyhan and Seyhan rivers to the entire Middle East and Persian Gulf, the shipping of water by tankers from the Manavgat River, the diverting of sea water and seawater desalination. However, some proposed solutions seem to be expensive and the Arabs will not want to depend on the Turks concerning the Peace pipeline project. The seawater desalination seems to be more a practical, and cheaper option than trying to settle disputes over available water sources. Similarly, diversion of water from one place to another is more expensive. The riparians would like to be self-sufficient in the water course and not to keep open an way for bargaining with other states or to depend on other states in this unstable region. Most of the Middle East countries are rich in oil and gas and their wealth could produce artificall water through desalinating sea water. For the time being, desalination has been serving mainly domestic and some industrial water supply requirements.However, it cannot be expected that desalination will fully solve the problem of the water supply in the Middle East. Alternative solutions must be taken into account disregarding unfair political atmosphere.

Consequently, water competition and conflicts dominate the relations of many neighbours in the Middle East. There exists inadequate management of vital resources. The end of the Cold War and the collapse of the Soviet Union altered the picture and introduced greater stability (superpower relationship) in the Middle East. American influence throughout the region appears to be profitable to peace. The role of economic incentives is also providing peace and stability. The PLO and Israel accord was signed in September 1993 and the peace treaty between Jordan and Israel was signed on October 26, 1994. Syria will sign an agreement with Israel by the US efforts. All of them have provided a step towards the certain solution of the Jordan river. In the Euphrates basin, it seems not to be easy to see an agreement about water allocation unless the lower riparians approach to this concern, namely Syria and Iraq, change. The international watercourse disputes must be settled by the goodwill of interested states. In the same manner, the Nile river solution seems to be hard due to the lack of participation of Ethiopia and Kenya to cooperate with other riparian states. There is no doubt that a failure of the peace negotiations to resolve the water problems, could lead to the collapse of the talks and to armed clashes.

BIBLIOGRAPHY

Alpher, Joseph.1994, "Israel's Security Concerns In The Peace Process", ***International Affairs,*** V 70, N 2, (April), pp.229-241.

Anderson, Dr.Ewan.1990. " The Tigris-Euphrates Basin ", paper presented to the Round-Table Discussions on Transboundary River Systems in the Middle East in Bilkent University, Ankara, 25-27 November.

Armaoglu, Fahir. 1989.**Filistin Meselesi ve Arap-İsrael Savaşları (1948-1988),** (Türkiye İş Bankası Publ. İst.)

Aydın C. and Ertan, N., "Will the Water Issue Be A Long - Term Problem ?", ***Turkish Daily News,*** (Jan.29 1990).

Bagış, Ali İhsan, 1994.***Water As An Element Of Cooperation and Development In The Middle East.*** Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ.

Balcı, N., "Su Kavgasının Öbür Yüzü, " (The Other Side of The Water Conflict), ***Milliyet,*** (June 5, 1990).

Beaumont, Peter. 1978. " the Euphrates River- An International Problem of Water Resources Development", ***Environmental Conservation***, Vol.5, No.1, (Spring).

Bektaş,Arsev."1993."Ortadogu'da Barışın Ayak Sesleri ve Filistin Sorununa Tarihsel Bir Bakış",in ***Su Sorunu, Türkiye ve Ortadoğu,***(ed.) Sabahattin Şen, Baglam Araştırma Dizisi 29, İstanbul,pp.269-311.

Benedick, R.Elliot. 1979."The High Dam and The Transformation of The Nile ", ***Middle East Journal,*** No.33, (Spring).

Bengin, T. and Gözdereliler, T., " GAP'ın Öteki Yüzü ", (The Other Side of GAP Project), *Milliyet*, (Jan. 8 and 9, 1990).

Beshorner, Natasha.1992. ***Water and Instability in the Middle East.*** London : Adelphi Paper 273.

Biger, Gideon. 1989. " The Shatt-Al-Arab River Boundary: A Note", *Middle Eastern Studies*, Vol.25, No.2. (April).

Bilgen, C., "PKK'yı GAP'la Çökertecegiz, "(We Will Break PKK With GAP Project), *Milliyet*, (April 1, 1990).

The Book of Joshue, The old Testament. 1977. (New Amerikan Standard Bible Pub., Nashivelle).

Bulloch, John and Darwish, Adel.1994. ***Su Savaşları,*** çev. Mehmet Harmancı, (Altın Kitaplar Publ.).

Chalabi, Hasan. " Fırat'ın Suları ve Uluslararası Kamu Hukuku", *Ayna*, Vol.2, (Winter- Spring 1994).

Clarke, Robin. 1993. ***Water : The International Crisis,*** The MIT Press, Cambridge, Massachusetts.

Clor, Mahmood. 1988. "A Land of Milk and Honey.. and Salt", *The Geographical Magazine*, (November).

Cooley, John K.1984. " The War Over Water ", *Foreign Policy*, V.54, (Spring).

Cooperation On Water Resources In The Middle East. Paper Submitted to the Conference on Middle East Multinational Negotiations Working Group on Water Resources, (May 13-15 1992, Vienna).

Cran, James.A., " The Medusa Bag and Middle East Water Projects" Mimeo.

" Ortadogu'da Su Savaşı mı ?," ***Cumhuriyet,*** (14 April, 1990).

"Su Aritmetigi Masada ", ***Cumhuriyet,***(23 Haziran 1990).

Çiller, Tansu,1994."The Role of Turkey in The New World", ***Strategic Review,*** (Winter), pp.7-11.

Çomak, Hasret.1990. " International Law Issues : Euphrates / Tigris Water-Course System ", ***Foreign Policy,*** N.3-4.

Daneshkhu, Scheherazade and Gowers, Andrew, " Shrinking Euphrates Raises Turkish-Syrian Tension, " ***Times,*** (October 23, 1989).

Dees, L.Joseph, " Jordan's East Ghor Canal Project", ***The Middle East Journal,*** Vol.13, Nr.4,(Autumn 1959), pp.357-371

Dellapenna, JosephW.1992 ***Building International Water Management Institutions : The Role of Treaties and Other Legal Arrangements.*** Paper presented to the Conference on Water in The Middle East. London SOAS, 19-20 November.

Dış Basında Fırat Suyunun Paylaşımı, T.C. Başbakanlık Basın - Yayın ve Enformasyon Genel Müdürlügü, (13 May- 22 July 1990).

Doherty, Kathyrn.1965."Jordan Waters Conflict", ***International Conciliation,*** (May).

Dogan, Yalçın.1994 "Barış ve Terör ", ***Milliyet,*** , p.14.

Do ruel, Fatma.1990. " Büyük Ölçekli Sulama Projelerinin Potansiyelleri ve Soruları : GAP Örnegi ", ***İktisat Dergisi,*** No. 301-302, (November-January).

Draft Report of The International Law Commision on the Work of Its Forty-Third Session, 29 April-19 July 1991, Doc.A/CN, 4/L.463/Add.4, United Nations, New York 1991.

DSI (State Hydraulic Works), ***South-Eastern Anatolian Project,*** Ankara, 1989.

" Alive and Kicking ", ***The Economist,*** (September 1980), p.31

" Can It Really Be Peace ?", ***The Economist,*** (September 18, 1993), pp.23-25.

" Send For The Dowsers", ***The Economist,*** (December 16, 1989), p.70

" Troubled Waters," ***The Economist,*** (April 23-29, 1993),p.107.

"Where Dams Can Cause Wars ", ***The Economist,*** (July 18, 1987), pp.57-58

El Mor, Dr.Awad, Mohammed.1992. ***Water Resources In the Middle East.,*** Submitted to The International Conference On Water Resources In The Middle East, London, (November 19-20).

Ergil, Dogu," Ortadogu'da Su Kavgası ", ***Milliyet,*** (Feb.2-4, 1990)

....., "2000'li Yılların Kabusu : Su Savaşları, "***Günaydın,*** (May 30-June 5, 1990).

....., " Ortadogu'da Su Savaşları mı?,"***Ankara Üniversitesi Siyasal Bilgiler Dergisi,*** Cilt XLV, (January-November 1990).

Falkenmark, Mallin. 1990. " Global Water Issues Confronting Humanity ", ***Journal of Peace Research,*** vol.27, No.2.

"Middle East Fears War of Parched Throats", ***Financial Times,*** (February 21, 1989).

Frey, Frederick W. and Naff, Thomas. 1985. " Water : An Emerging Issue In the Middle East", ***The Annals of The American Academy,*** AAPSS 482, (November).

Frey, Frederick, W. " The Political Context of Conflict and Cooperation Over International River Basins,"*Water International* Vol.18, (March 1993).

Ghali, B.Butros. 1993." Nil Vadisi'nde Su Yönetimi ", *Ayna*, Sayı.1.

.....1992." Water Management in the Nile Valley", *Water Technology International*, Century Press.

Giray,Safa.1994 "Su Sorununda Türkiye'nin Siyasal Boyutları",in ***Water As An Element Of Cooperation and Development In The Middle East.(ed.)***Ali İhsan Bagış Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ,pp.239-259.

Gleick, H.Peter, 1993." Water and Conflict", *International Security*, V 18, N 1, (Summer), pp.79-112.

Gowers, Andrew and Walker, Tony, 1989. " Water War In The Middle East", *World Press Review*, (May), pp.57-58.

Gölhan, Mehmet,1994 "Welcome Adresses",in ***Water As An Element Of Cooperation and Development In The Middle East.(ed.)***Ali İhsan Bagış Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ.,pp.7-14.

Gruen, George.1992. ***The Water Crisis : The Next Middle East Conflict ?.*** (revised edition). Los Angeles:The Simon Wiesenthal Center

....., "Recent Negotiations Over The Waters of The Euphrates and Tigris," ***Proceedings of the International Symposium on Water Resources in the Middle Easr Policy and Institutional Aspects,*** Urbana, Illinois USA, (October 24-27, 1993), pp.100-107

----------,1994."International Regional Cooperation Preconditions and Limits",in ***Water As An Element Of Cooperation and Development In The Middle East.(ed.)*** Ali İhsan Bagış Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ., pp.263-289.

Hafner, Gerhard.1991. ***The Application of The Optimum Utilization Principle To The Euphrates and Tigris DrainageBasin,*** Paper Presented to The Bilkent University, Ankara,(September).

Halliday, Fred. 1990. " Iraq and Its Neighbours : The Cycles of Insecurity", ***The World Today,*** (June).

Hazleton, Jared.E. 1979. " Land Reform in Jordan : The East Ghor Canal Project", ***Middle East Study,*** (May 15), pp.258-269

Hudson, James. 1971. " The Litani River of Lebanon : An Example of Middle Eastern Water Development ", ***Middle East Journal,*** (Winter), pp.1-11

"Su Zirvesinden Sonuç Çıkmadı, " (No Result at Water Summit), ***Hürriyet,*** (June 28, 1990).

İdiz, Semih.1991. " Ankara Su Atagına Soyunuyor", ***Cumhuriyet,*** (Şubat 23).

İnan, Yüksel,.1994 "Legal Dimensions of International Watercources, (Euphrates and Tigris)", in ***Water As An Element Of Cooperation and Development In The Middle East.(ed.)*** Ali İhsan Bagış Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ.,pp.223-239.

Isaac, Jad and Hosh, Leonarda. 1992. **Roots of the Water Conflict in the Middle East.** Submitted to the International Conference on the Middle East Water Crisis : Creative Perspectives and Solutions University of Waterloo, Canada, (May 7-9)

....., 1992. **Nature's Apportionment and the Open Market A Promising Solution Convergence to the Arab - Israeli Water Conflict.** Paper Submitted Conference On the Middle East Water Crisis : Creative Perspectives and Solutions University of Waterloo, Canada, (May 7-9).Ionides, M.G. 1953.

" The Disputed Waters of Jordan", ***Middle East Journal,*** V.7, (Spring), pp.153-165

Jansen, Godfrey. 1990. " Euphrates Tussle", ***Middle East International,*** (February 16).

Karahan, Prof.Dr.Abdulkadir. 1988. ***Gap Sempozyumu,*** (Nurettin Uycan ve Basım Sanayi A.P., İst.).

Karaosmanoglu, Ali. 1990. **A Report of Roundable Discussion on Transboundary Watercourses,** Bilkent University, Ankara. (November 25-27).

Kliot, N., " Application of Customary International Law to International Rivers in The Middle East," ***Proceedings of the International Symposium on Water Resources in the Middle East Policy and Institutional Aspects,*** Urbana, Illinois USA, (October 24-27, 1993).

.....1994.***Water resources and Conflict in The Middle East,*** Routledge.

Kolars, John F. and William A.Mitchell.1991. ***The Euphrates River and The Southeast Anatolia Development Project.*** Carbondale : Southern Illinois University Press.

....., 1986." The Hydro-Imperative of Turkey's Search For Energy ", ***The Middle East Journal,*** Vol.40, No.1, (Winter), pp.53-67

Krishna, Raj.1992." International Watercourses : World Bank Experience and policy ", paper presented to the conference on the Water in the Middle East. London, SOAS, (November 19-20).

Kut, Gün. 1991. " Ortadogu'da Su Sorunu ve Türkiye ", Haluk Ülman ed. ***Ortadoğu Sorunları ve Türkiye,*** (Tüses Publ.).

....., 1993. "Burning Waters : The Hydropolitics of the Euphrates and Tigris ",***New Perspectives On Turkey,*** No.9, (Fall).

Labib, Fakhry,.1994 "The River Nile Waters From Source To Mouth : Between Conflict and Cooperation in Past and Future",in ***Water As An Element Of Cooperation and Development In The Middle East.(ed.)*** Ali İhsan Bagış Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ.,pp.371-389.

Lowi, R.Miriam.1993. ***Water and Power. The Politics of a Scarse Resource in The Jordan River Basin,*** Cambridge Middle East Library :31. Cambridge University Press.

Lusk, Gill.1988. " Sudan : and Now The Floods", ***Middle East International,*** (August 26).

Mccaffrey, C.Stephan.1991. ***The Evaluation of The Law of Transboundary Rivers,*** Paper presented in the Conference on Transboundary Waters in the Middle East : Prospects for Regional Cooperation, Bilkent University, Ankara, (September 2-3).

2nd Mediterranean Conference On Water, ***Mediterranean Charter For Water.*** Roma, (October 28-30, 1992).

2nd Mediterranean Conference On Water, **Mediterranean Network For Water.** Roma, (October 28-30, 1992).

" Downstream Politics," ***The Middle East,*** (March 1990).

" The Politics of Thirst", ***The Middle East,*** (August 1991).p.29

" Irrigation Project to Boost Crop Yields in Nile River Valley",***Middle East Water & Sewage,*** (Oct-Nov 1981), pp.265-267.

Middle East Multinational Negotiations Working Group On Water Resources, "***Cooperation On Water Resources in The Middle East ",***Vienna, (May 13-15), 1992.

Middle East Multinational Negotiations Working Group On Water Resources, "***The Jordanian Perspective-Water",*** Vienna, (May 13-15), 1992.

" Ekonomik Evlilik", ***Milliyet,*** (31 October 1994), p.17.

" Savaşma, Barış ", ***Milliyet,*** (27 October 1994), p.24

Naff, Thomas and Ruth Matson. 1984. ***Water in the Middle East ; Conflict and Cooperation ?***.Boulder and London : Westiew Press.

Nasrallah, Fida. 1990." Middle Eastern Waters : The Hydraulic Imperative", ***Middle East International,*** (April 27), pp.16-17

" Virtual Peace", ***New Republic,*** (August 15, 1994), V211, pp.18-21.

" Water Wars ", ***New Statesman and Society,*** (May 3, 1991).

" Ortadogu ve Türkiye'yi Kuşatan Su Sorunu, Su Savaşının Eşiginde, " ***Ekonomi Politika,*** 32 Sayfalık Özel Ek, (15-22 A ustos 1993).

Orta-Dogu'da Su Sorunu,1994, Dışişleri Bakanlıgı Bölgesel ve Sınıraşan Sular Dairesi.(Ekim).

Peretz, Don.1955. " Development of the Jordan Valley Waters ", ***The Middle East Journal,*** V.9, N.3, (Summer), pp.397-413

Picard, Elizabeth, 1994" Aspects Of International Law of The Water Conflict in the Middle East", in ***Water As An Element Of Cooperation and Development In The Middle East.(ed.)*** Ali İhsan Bagış Hacettepe University, Friedrich Naumann Foundation in Turkey, Ayna Publ.pp.213-223.

Pope, H., " Turkey is Playing Mideast Water Card," ***The Wall Street Journal, Europe,*** (March 20, 1990).

Postel, Sandra,1989. " Trouble on Tap",***World Watch,*** (September-October), pp.12-20.

Reguer, Sara.1993." Controversial Waters : Explotation of The Jordan River, 1950-80", ***Middle Eastern Studies,*** V.29, N.1 (January), pp.53-90

Rubin, C.Jeffrey. 1990." The Politics of Water", ***Time,*** (February), pp.32-33

" Suriye Barışta Ciddi ", ***Sabah,*** (28 October 1994), p.20.

" Oldu Ama Zor Oldu ",***Sabah,*** (5 May 1994), p.14

" Ortadogu'nun Yeni Umudu Su Boru Hattı", (4 November 1994), pp.24.

Salha, Samir,1993." Gap Projesinin Türkiye'nin Dış Politikasına Etkileri", ***Dış Politika,*** Cilt IV, S 2, (July), pp.81-97.

Satloff, B.Robert,1995. "The Jordan-Israel Peace Treaty" ***Middle East Quaterly,*** (March), pp.47-51.

Shuval, I.Hillel, " Approaches to Resolving the Water Conflicts Between Israel and her Neighbours- A Regional Water-For-Peace Plan", ***Water International,*** Vol.17, No.3, (September 1992).

Sınıraşan Sular ve Ortadoğu'da Su Sorunu. 1994. Harp Akademileri Komutanlı ı Yayınlarından, (April).

Solones, Miguel1992." Legal and Institutional Aspect of River Basin Development",***Water International,***V 17, pp.116-123.

Springbog, Robert. " Baathism in Practise : Agriculture, Politics,and Political Culture in Syria and Iraq", ***Middle Eastern Studies,*** V.17, (April 1981), pp.191-209

Su Sorunu, Türkiye ve Ortadoğu, 1993. (ed.) Sabahattin Şen, Ba lam Araştırma Dizisi 29, İstanbul.

Starr, Joyce.R. 1991, "Nature's Own Agenda ; A War For Water in The Mideast", ***Guardian Weekly,*** (March 24).

.....1991." Water Wars ", ***Foreign Policy,*** (Spring), pp.17-35

Starr, Joyce and Alley, Stephan, " Troubled Waters Ahead For Iraqi Irrigation," ***Financial Times,*** (October 21, 1988).

Starr, Joyce and Stoll, C. Daniel, ***US Foreign Policy on Resources in The Middle East,*** The Center for Strategic & International Studies.

Steinbach, Udo, " Gazze-Eriha Anlaşması", ***Avrasya Dosyası,*** Uluslararası İlişkiler ve Stratejik Araştırmalar Dergisi, Vol.3, Cilt.1.

Tal, Lawrence,1993. " Is Jordan Doomed ?, The Israeli-PLO Accord ", ***Foreign Affairs,*** (September/October), V 72, N 5, pp. 47-57

Taşhan, Seyfi, " Ortadogu, Su ve Türkiye," ***İşletme ve Finans*** Vol.55, (Ekim 1990).

Tayyar, S., " Su'ya Geçici Formul, " (Temporary Solution to Water Crisis), ***Milliyet,*** (May 8, 1990).

Tekeli, Sahim.1990. "Turkey Seeks Reconciliation For the Water issue Induced by the Southeastern Anatolia Project (GAP)", ***Water International,*** Vol.15, No.4, (December)

Tepler-Drezon, Marcia, " Contested Waters and the Prospects for Arab-Israeli Peace", ***Middle Eastern Studies,*** Vol 30, N.2 (January-April 1994)

" Seeds of Conflict Are Water -Borne in Parched Middle East" , ***Times,*** (27 March 1990).

" The Word's Water", *Time,* (November 5, 1990).

Treaty of Peace Between The State of Israel and The Hashemite Kingdom of Jordan, 26th October 1994.

Turan, İlter, " Politics of Water and The Role of Regional Organizations : The Middle East, " ***Proceedings of the International Symposium on Water Resources in the Middle East Policy and Institutional Aspects,*** Urbana, Illinois USA, (October 24-27, 1993).

" Turkish -Syrian Border Must Be A Line of Friendship and Tranquillity ", ***Turkish Digest,*** (24 July, 1987).

"A New Beginning, Israel and The PLO",***U.S. News & World Report,*** (September 13, 1993), pp.24-32.

Vesilind, Pritt. 1993." Middle East Water Critical Resource", ***National Geographic,*** Vol.183, No.5. (May).

Waterburry, John, ***Dynamics of Basin-Wide Coopertion in The Utilization of the Euphrates.*** Paper Prepared for the Conference : The Economic Development of Syria ; Problems, Progress and Prospects, Damascus, (January 6-7, 1990).

Wilkinson, R., "When Rivers Run Dry," ***Newsweek,*** (Feb.12, 1990), pp. 24-25 .

Wolf, Aaron, " The Jordan Watershed: Past Attempts at Cooperation and Lessons for the Future", ***Water International,*** Vol.18, No.1, 1993.

" Israil-Ürdün Anlaşması",1995. ***Yeni Yüzyıl,*** (3 February), p.14

Yetkin, Murat.1992. ***Ateş Hattında Aktif Politika,*** (Alan Publ., Ca alo lu, İst. February).

....., "Syria :Diplomacy Over Troubled Waters ", ***Turkish Probe,*** (Jan. 19, 1993).

Zak, Moshe,1995." The Jordan-Israel Peace Treaty", ***Middle East Quaterly,*** V.2,N 1, (March), pp.53-59.