

Water Conflict in the Middle East

Dr. Ghazi Ismail Rababa'a

Head

Department of Political Science

International Islamic University of Science

P.O. Box (1101) – Amman 11947

Amman – Jordan

Abstract

This study aims at shedding light on the most important challenges of water in the Middle East, especially 90% percent of water resources in the Arab Area, comes from outside the borders of the Arab Home land. In addition to the population increase and Zionist danger, and the majority of the countries of the Arab Home land locate in the dry tropical area, the matter that indicates to wage water wars. And it is what requires continuing challenges from the Arab Nation, together with the regional equation or expected collision at war for water. Percent of its water springs and passes through other states. The majority of its population is located under the line of water poverty for the portion of individual is lesser than 1000 cubic meters a year, in addition to the Israeli threatening, for the water sources will not be enough for 10% ten percent of their need, that what increases the possibilities of the Zionist expansion on the expense of the rights of the Arab waters. And in this study, there is a show of water crisis causes in the Middle East and the potential threatening of the Arab Water security, and the proposed imaginations for the future of the Arab Water Security, and it also covers plenty of recommendations and proposals.

Introduction

The Middle East Region faces abundant challenges in the shadows of international changes might be the most important of these challenges in "the War of Water", and it was made clear by plenty of studies and analyses warning that the states of the Middle East suffer from scarcity in the quantities of water for various causes, from these states are Egypt, Jordan Iraq, Syria, Israel and the Palestinian territories, and consequently the Middle East is at the margin of abyss, where studies indicate that Turkey started since many years, to build up a series of huge and great dams on the Euphrates, which lately will seize hall of the water flowing into Syria and Iraq, as well as the Nile is shedding shadows, with deep effect on the relations among Egypt Sudan and Ethiopia. This means that war is coming not stirred by oil but by water, especially the population is in continuous increase. And what increases the complication of the matter is that hall of the sweet water is located in progressive states, and the Arab World is located in a dry tropical regional and 90% percent of its water springs and passes through other states. The majority of its population is located under the line of water poverty, for the portion of individual is lesser than 1000 cubic meters a year, in addition to the Israeli threatening, for the water sources will not be enough for the population of Israel in the year 2015 except for (10%) ten percent of their need, that what increases the possibilities of the Zionist expansion on the expense of the rights of the Arab waters. And in this study, there is a show of the water crisis causes in Middle East and the potential threatening of the Arab Water Security and the proposed imaginations for the future of the Arab Water Security, and it also covers plenty of recommendations and proposals.

Sources of Water and its distribution in the world:

Water is considered the basis of the living creatures, and the concealed significance of the earth fertility, its prosperity and freshness authorizing God's saying: "We made from every living thing"i, and among his signs in this: thou serest the earth barren and desolate, but when we send low rain to it, it is stirred, to life and yields increase. Truly, the Who gives life to the dead earth can surely give lied to men who are dead.

For he has power over all things."ii And the ancient civilizations were connected with certain water sites, some of them was known with the water name, and thus the civilization of what is situated between the both Rivers was famed, and so were the Egyptian and Hadramout civilizations and the Father of Prophets, Ibrahim (Peace be upon him) called Allah Al mighty: "Our Land I have made some of my offspring to dwell in a valley without cultivation, by the sacred House, in order of our lard that they may establish regular Prayer: so fill the hearts of some among men with love towards them, and feed them with fruits: so that they may give thanks."iii The Divine response was bursting a water spring, was known later with the name of "Zamzam Waters". And water is one of the graces of God shading human beings and abundant, and because of its high rank and position God, Al-Mighty combined it with sons and wealth in his saying: "saying, 'Ask forgiveness from your Lord; for He is of Forgiving; 'He will send rain to you in a abundance; "Give you increase in wealth and sense; and bestow on you Gardens and bestow on you Rivers (of flowing water).iv

There upon, the Arab peasant confidentially connects with land and water; so the Egyptian relationship with the Nile and the Iraqi with the Euphrates is a strong one even he acquires his identity form it, for wherever rivers are not available the peasant makes singing with the rain an doing singing. And if we take the ancient Egyptians civilization as an example of that, we shall find that the connection of that civilization with the Nile and its dependence concentrates on it, and it is a rare example of the area that civilization in it depend on the water of one river, and without the Nile River Egypt would have been a part of the Great Desert characterized with sharp drought, for the scarcity of rains there, therefore, Egypt knew agriculture since ancient ages, and the Egyptian people was connected with land and pasture an a basic activity disappeared the thing that caused Alan's combination in regional unites, and need was early shown to organize irrigation works at the level of all Egypt, that led to the commencement of the central state at the ending days of the forth millennium before Christ's Birth. God Al-Mighty bestowed this region with water as well as several types of wealth, but water is as well as every other wealth pliable to vanish and rum out, even though its concept was inter mixed in the mind of the populace with the conception of survival,v and this was maintained by statements of some Arab genius and distinguished figures, deduced of which the matter of the availability of water exactly like air, as it is in Taha Hussein's statement: "I want education to be like water and air".

But the slow study shows that the Arab countries are about to meet a wave of water scarcity, threatening the life phenomena and the development track, for the Arab World is located at the dry belt and the semi-dry in the world, where the portion of the Arab individual amounts to more than (744) cubic meters annually, meanwhile the global average amounts to 12900 cubic meters, and the average of rain petting in it is close to 5 millimeters and 450 millimeters annually. Meanwhile this average amounts in Europe to 2000-3000 millimeters annually. And this thing acquires more of indication if we know that about 79 from the planted Arab Lands are irrigated by rains, ant the deserts also occupy an area amounts to 600 million hectares, i.e. (that is) about 43% of the total area, and added to that, the average of population development which reaches 3% annually for the Arab World total population amounted to 205 million persons in 1985, the amounted to 30 millions in 2000, and it is expected that the number of the Arab World population to become 600 millions in the 2035. The expected water shortage in the light of the population increase and scarcity of water –supplies amounts to 176 milliard cubic meters. The planted area of land at present amounts to about 50 million hectares, only 10% of them is watered by irrigation, but the rest is irrigated by rain water, the thing that makes them a source productive changes and a handicap preceding the usage of modern product factors, with the necessary amounts to develop product. And if the coming water crisis is translated into numbers, we shall find that the annual amount of the allowed water supplies amounts to 338 milliard cubic meters, not invested of them at present except for 173 milliard cubic meters. And if the first number is compared to the future needs, we shall find that there is a water shortage estimated to more than a hundred milliard cubic meters annually.vi

Water Supplies in States of the Euphrates and Tigris Basin

State	Population N. (million)1991	Available Amount 1991	Population N. (million)2000	Available Amount 2000	Shortage 2000
Syria	13.8	20.0	18.0	27.0	7
Iraq	17.1	42.7	242	46.7	4
Turkey	58.5	196	69.0	20.3	7
Total	89.4	258.7	114.2	276.7	18
(Percentage of water shortage in the year 2000) $18 \times 100 / 276.7 = 6.505\%$					

Water Supplies in States of the Nile Basin

State	Population N. (million)1991	Available Amount 1991	Population N. (million)2000	Available Amount 2000	Shortage 2000
Egypt	54.2	55.5	69	73.0	17.5
Sudan	25.9	13.936	33.6	19.070	5.074
Ethiopia	53.2	54.400	70.8	57.400	3
Total	133.6	123.836	173.4	276.7	18

(Percentage of water shortage in the year 2000) $25.574 \times 100 / 1.49.41 = 17.12\%$

Water Supplies in States of the Jordan Valley Basin

State	Population N. (million)1991	Available Amount 1991	Population N. (million)2000	Available Amount 2000	Shortage 2000
Israel	4.9	1.755	5.4	2.555	0.8
Jordan	3.4	0.850	4.7	1.350	0.5
Ghaza Strip	0.775	0.130	1.0	0.175	0.045
W.Bank	1.25	0.140	1.5	0.200	0.060
Lebanon	3.4	3.600	4.1	3.800	0.200
Total	13.725	6.475	17.4	8.080	1.605

(Percentage of water shortage in the year 2000) $1.605 \times 100 / 8.08 = 19.86\%$
Source: Ali Hashim: "The Political, legal and Economical Dimensions of Water Crisis", International Politics, No. 104, (1991), p.p. 150-158.

Causes of Water Crisis in the Middle East:

Due to the great increase of population in the Middle East and lack of this region to the satisfactory water sources to fulfill its increasing needs of water. And due to the misuse of the available water sources by the states of the Middle East, and usage of a great amount of water by some of its states, compared to its water needs on the expense of other states, it is expected that the sharpness of water crisis will increase, from which the Middle East region suffers, the matter which will expose this region to more military tensions. And the population of both Tigris River and Euphrates basins reached about (114) million persons in the year 2001, of them (69) million persons the population of Turkey, (18) million persons the population of Syrian and (24) million persons the population of Iraq, corresponding to (85) million persons in the year 1990, that by an increase amounted to about (30) million persons. And the population of the Nile basin amounted to about (173) million persons in the year 2000, of them (69) million persons the population of Egypt, (33) million persons the population of Sudan and (71) million persons the population of Ethiopia, corresponding to (130) million persons in the year 1990, that is by an increase of about (43) million persons the thing that result due to this population increase in the region, in a water shortage in Syria in the year 2000 amounted to about three milliard and in Egypt about 17 milliard cubic meters, and in Israel one milliard cubic meters.

The expected water shortage to be faced by some states of the Middle East in the range of eye sight, and what is faced by the states now from the water crisis, basically refers as we believe to the misuse of the available water supplies in these states and the Middle East in general, and if these states don't initiate to be familiar with the cause of their water crisis, and surpass these causes, no one is proficient to draw the picture which is that the region of the Middle East, exposed to a great water crisis with no available modern technology of and with no materialistic abilities to find water substitutes in addition to unavailability of appropriate political stability in this region, and the causes of the water crisis in the Middle East refer to the following points:

Firstly

Continuation of the over whelming agricultural sector compared with other economic sectors. And the availability of agricultural products requiring great amounts of water, like cotton, rice, citrus fruits and some types of vegetables, for about 70% of the used water in the Middle East is annually wasted in the agricultural sector.

Secondly

The unavailability of satisfactory budgets to build dams and modernizing the water and sewer nets. Water budgets in Israel, amounted to about 85 million dollars in 1976 and decreased to 30 million dollars in 1990 meanwhile the required budget is 670 million dollars annually as happened in the year 2000. and the non-specification of satisfactory financial budgets for water purposes resulted in stopping modernizing of the water and sewer nets, enlarging them and building dams to gather rain water, and establishing more of refining stations for waste water. For from a total of 260 million cubic meters in 1990 the percentage of water drainage used for house purpose amounted to (13%-30%, that is because of the water nets badness. And Egypt for the same reasons, had wasted fifteen milliard cubic meters of water during the seventies, that is more than one and a half milliard cubic meters annually, meanwhile there are more than 400 million cubic meters annually from the water of Al-Lettani River, amounting to 760 million cubic meters annually, are wasted vainly to the sea, and a total of ten milliard cubic meters from the surface water and rain water in Palestine are wasted vainly and by starving about 3 milliard cubic meters annuallyviii.

Thirdly

Unavailability of rational water policies, specializing the amount of necessary water for an individual annually, the thing that led to an increasing rise in the amount of water used annually. The average amount of the Israeli individual consuming of the share of the Palestinian individual did exceed (50) liters daily. Water, amounted to 184 liters daily. In addition to that, the cost of the cubic water of water price in Israel equals about 3. American cents, meanwhile it is sold to the Israeli citizen for 13 cents onlyix.

Fourthly

Continuation of no peace and no war state in the Middle East, and unavailability of good neighborhood relations and the bilateral agreements among the concerned states of the water region, and this, in turn, led to the attempt of every state in the Middle East to dominate more amounts of water in which the share with other states, and at the expense of these states, and this what happens now in water projects upon which Turkey Ethiopia and Israel are doing their best to establishx.

Fifthly

The territory of the River Jordan basin is a region with a semi-dry climate. Therefore, its communities depend on agriculture as a basic resource of its national income resources. And the productive agriculture at the economic level needs to save great amounts of irrigation water, especially the rate of the good area of land ready for agriculture deduced from the total lands of the area, remain limited and little, and if the seamounts ever not available the agricultural sector and it is a productive sector- starts to decay opening the space to increase the percentage of service sector in the national income, and the increase of this dependence, therefore, on non-domestic support sources, especially fulfilling its basic needs of nutrition, for this reason, each of the region communities attempts to save a great amount of water for itself, and since the annual renewation of water is originally scarce in this region, specifically in its southern part (Jordan and Palestine), attaining the necessary amounts of water, therefore, by itself attracts from the communities of this region competitive dimensionsxi.

Sixthly

In spite of the limitedness of the sources and resources of the area of the River Jordan basin, the averages of natural development of the population in it is high compared to other area of the world (Lebanon 2.1%, Jordan 2.5%, the West Bank 3.5%, Syria 3.8% and Gaza Strip 1.3%) moreover what the height of percentage of the swift and continuous development of the population, the increase of pressure resulted from the swig development of population during the two coming decades, and how to distribute it in the regional at averages of consuming renewed water, and which now reached the crucial point represented in the beginning of depending on the unrenowned stored ground water, and that has an urgent necessity to condense the efforts for modernizing new means and technologies to get the most benefit from the amount of renewed water annually, and increase its averages.

Seventhly

In addition to the high and swift increase in the averages of population development in the area of the River Jordan basin, there happens now a great population increase, with dangerous results forces on the area through the Jews emigration from the previous Soviet Union into Israel and the possibility of the arrival of two millions of the Jews to Israel through the coming five years, and so the requirements of these emigrants exceed the inclusive capability of Israel from different sides, and it is what will necessarily lead Israel to devour the surrounding Arab Lands, that is to cover the abundant sides of the inclusive inability of it. And what concerns water issue, the new emigrant wave will, necessarily lead to increase Israel's greed's to capture the water sources of the area, and will lead to deprive Arabs from their rights in them more and more.

Eighthly

The River Jordan basin is the area of the Arab-Israeli conflict and upon the biggest part of Palestine. Israel forced itself in 1948 as a queer entity to the area, and at time of the development of the conflict movements between the two parties.

Israel could reach the springs of Al-Lettani River in Lebanon in the year 1982^{xii}. and before that on the River Jordan and else of the main water sources in the region, and in the shade of the aggressive nature of Israel and in reaching a comprehensive political settlement of the Arab-Israeli conflict the necessary cooperation to reach regional rooting solutions of the problem from which the area in general suffers as caused by scarcity of water resources, will remain null.

Ninthly

Observers notice non-existence of a special Arab policy of the water issue and how to run, exploit and consent resources and protect them from extravagance. ^{xiii}.

The Political, Economical and Legal Dimensions of Water Crisis

Firstly: the political dimensions

From the most distinguished characteristic traits of water crisis in the Middle East is using water as apolitical weapon and a pressure paper to solving other problems, and that concentrate in three cases: ^{xiv}

The first case: the bargaining and threatening case we find that the concerned number of parties with the water conflicts in the Nile basin, as nine states are still unsettled on a new agreement contract, or in recognition of former studies concerning division of the Nile water. In case of the Nile River, thereof, we find it and sine many centuries legends narrated about the ability of some kings and emperors in Ethiopia to divert the water of the Nile River, and the European powers were concerned about this concept and exploited it. There became an intellectual, religious and cultural tradition makes of Ethiopia a source of threatening to Egypt through the water of the Nile River. This thinking was supported by the Egyptian foreign policy in the period of sixties and seventies. Egypt assisted Eritrea and asked the Muslims of Ethiopia to revolting to weaken the power of Ethiopia and prevent it from employing the water of the Nile in what harms Egypt.

And in the seventies, we find that the problem of the Nile water had aroused between Egypt and Ethiopia as a reflection of the international conflicts which prevailed in the African continent and policy had taken the track of solving the problems peacefully following a balanced policy towards all that concerns the international and regional conflicts of Ethiopia.

The second case: case of enforcement and compulsion. ^{xv}

The best to represent this case round the basin of both rivers, the Tigris and Euphrates, consisting of three parties, for the internal condition of the concerned state of water conflicts may be negatively or positively reflected on the relation of the state with its partners in water, for the issue of Al-Akrad for example became an indication to the progress or complicating the water talk through the trilateral committee in the basin of Euphrates: for the more the activity of the opposing Kurds increased in Turkey on the Syrian-Turkey became in the issue of water, and the same stand Turkey takes against Iraq in case the Kurds escalate their activity on the boundaries with Iraq. And in the corresponding case, the coordination among the three parties, in the field of treatment with the Kurds means more of relaxation in the talks of the joint water in the basin of Euphrates. And it deserves indication here, that the basic problem between Syria and Turkey is political and water is nothing but one of the instruments of power used in the mutual pressure between them both.

The regional conflicts also caused relaxation or complication of the stands of the combatant and conflicting parties for water, and this is what we observe to the characterized Iraqi stand with calmness and weakness in his water demands towards Turkey and Syria during the period of the Iranian-Iraqi war, and after the Second-Gulf Crisis (1990-1991) xvi.

The third case: capture case

This case is quite clear in the Israel's capturing of increasing amounts of water from the adjacent Arab rivers in Jordan and Lebanon. And in case of the River Jordan basin, there are five parties in the West Bank and Gaza Strip, Israel, since its occupation of them both in 1964, followed stern procedure relating to the subject of water, for the Jewish colonies in the West Bank are exploited about (50) million cubic meters of water directly from the west Bank. And its occupation of the Golan Heights as well, where there rain pets Dow heavily and abundant, and getting power over them means dominating basic tributaries of the River Jordan. The same thing happens in Israel's capturing South Lebanon; for Israel had announced in 1991 that it will not withdraw from Lebanon without pledges to get its right from the water of Al-Lettani River, and what it also steals from the water of the River Jordan and Yarmouk, and in this case we find that the relative importance of an area other than else by the international parties motivate them to interfere in it. And this is proved by the various foreign projects in the region, either in the period of imperialism, as in James Heis in 1948, or after the independence of the states of the region and the escalation of tension in the period of the bilateral polar power, and wars breaking out, one of its causes is water-conflicts, such as the war of 1967 between Israel and the Arab States xvii.

Secondly: the economic dimensions

From the things, arousing dispute in the field of talking about water crisis in the Middle East, which of them has the priority, the economic factors or the political factors? And which of them is the following variable and the middle variable? At that time we find that what the crisis causes of political problems are nothing, but a consequence of the economic dimensions, which are represented in irrigation projects, agriculture and generation of electric energy. And the economic condition differs in the region of the three basins form the part of economic trends of the concerned states, depending on their water resources, the subject of conflict, either directly or indirectly to develop their economic condition. In case of the Nile River basin we find that Egypt depends economically on the rejected till now to selling or bartering water with Jordan and there are proposed projects by an Israeli – aid, the some of which an establishing a dam on the Blue Nile, A-Bebard Dam on the River Subat, Silfit project of Al'tbarah River and the project of khourel Ghash located on the Sudanese – Ethiupian bord it affects Egypt in an amount of (4.5) four and a half milliard cubic meters, and those projects will affect Ehypt in an amount of (7) seven milliard cubic meters annually, that is the percentage of 20% of the whole revenue of Egypt. And also we find that Tanzania, Rawanda and Bourwandi formed in among them the "Katjira" organization to exploit and employ the water of Katjira River, the thing that affects Egypt's share in about one milliard cubic meters annually. xviii.

But on the Egyptian-Sudanese side, the most important of the proposed projects, the project of Gongly Canal. And it is canal of (360) kilometers long at the eastern edge of the swamp area in the zone of the civil war in south Sudan, and it was expected that the amount of water to be divided into two shares between Egypt and Sudan, and these projects are crossed by man handicaps the evidence of that is the cessation of working Gongly Canal project and it is lesser of complication than other project. xix.

But in the case of the River Jordan basin we find that Israel did more than one action; starting with the project of Tabariyya Al-Naqab for diverting the water of the River Jordan, and also the course of Al-Lettani River in south Lebanon. And the economy importance of both two projects is show at the water security of Israel through a report prepared to mean that Israel is running out its water from the reserve at a percentage of 15% as fast as possible of this precaution to restore it annually.xx.

Thirdly: Lawful dimensions

The purpose implied by the lawful dimensions here is the availability of rules, organized legal actions and division of water among the conflicting states, and in accordance with Helsinki Agreements in 1966, the rights of water have been divided due to the population, taking in consideration the historical portion but the international law also acknowledges the absolute sovereignty of the states in what concerns the sources of water dominated by them, and each territory has its specially.

And in case of the Nile basin, there are agreements organizing the rights of exploiting the water of the Nile, but the problem is hidden in the non-acknowledging the concluded agreements by the concerned states at the basin, in the period of imperialism.

But in case of the basin of both rivers, the Tigris and Euphrates, Turkey-in accordance with the law- is obliged to negotiate and get agreed before starting to execute its projects on the river, considering that it is a must that exploiting the portion at its ownership for the domestic river do not lead to harm other states that share it in that river.

But in case of the basin of the River Jordan, we find ourselves before a case of illegal capturing, and a comprehensive agreement to divide the mutual sources of water never exists, and what is prevailing here of is depending (Johnston) division, the most acceptable to all parties of projects to be considered basis to divide the water of the River Jordan. And this is not obligatory and not the soul of commitment to all parties.xxi.

The Geographic Geologic Dimension

This dimension was represented in the following:

- a. The Arab states water: resources are controlled by non-Arab states; they are Ethiopia, Turkey, Uganda and Ghana, in addition to Israel.
- b. The dry desert climate from which the Arab region suffers, the thing that is reflected on its natural water resources.
- c. The participation of the Arab states in the underground water with the adjacent states within water basinsxxii. But the last dimension is that the Arab states are classified within the most increasing world states in population (4%, 5%), that is considered from the basic factors in the deficiency of water equation. And some studies indicated that the population of the Arab World will duplicate at the advent of the year 2015, the thing that will increase the sharpness of the problem.

Future of Water crisis in the Middle East

Shimon Peres: "If we agreed on land and disagreed on water, we would find that we don't have a real agreement. xxiii And no doubt that the real agreement requires acknowledging the rights of others in water, and not foreign precedent conditions, but the Israeli concept of the agreement with the Arabs requires to get and gain what should be acquired by treaties, what should have been got by force and occupation, then its explanting of the Arab water becomes legal.

The Israeli expert Heilak shoufal admits in the affair of the future of cooperation about water that peace offers Israel the possibility of getting the Arab water, such as Lebanese water, and that Israel will get water through peace.

It is clear from what has been said earlier that the fuller solution is to attain the rest of the Arab waters outside the border of Israel, because of its constant need for water. And it will not give up what it owns of water sources, because this threatens the Israeli security which became the core of the peace process, and in fact the future solution of water issue will be fulfilling the Israeli plans, but some others see that peace will place skeletons restrictions to distribute water in the region and give each party its right in water even if it was theoretically.

The overlooking of the future is an organized scientific independent reasoning denoting to formulate a group of condition prophecies, which cover the primary features of any community, or a collection of communities and through a coming period extending a little for twenty years and starts from special assumptions about past and present, and to explore the influence of the advent of future elements on the community, there are abundant views and studies indicate that if the types of present consumption continue, in addition to decrease in water amounts, and the of its quality to the worst, this will lead to the combat of competition about water and then to conflict. And the present and future water erases refer to three reasons:

Fist: increase of water consumption as a result of the population growth, agriculture land industrial expansion, and urbanism.

Second: negligence of the maintenance of water establishments.

Third: weakness of coordination among the states participating in certain water resources.

And there are political and economic effects for the crisis. The political effects which results from the water crisis in the Middle East by their three basins are represented in the following:

1. The fight for water is the future fight, for which of regional and international parties should be ready, and what reaches, in one of its stages to war.
2. In the range of seeking to attain the economic power as characteristic trait, characterizing the present in international system, the element of water will be one of the elements of any coming international strategy.
3. The element of water will play a great role in re-dividing the map of the political powers in the region, in order that the states with available water sources become the new regional powers.

But the economic effects are represented in the following:

1. Water is expected to become a good, bought and sold like oil especially this expected had a previous case, supporting him through Israel's buying water from Turkey, for Israel buys what equals 15% of its water need that amounts to (250) million dollars annually.
2. The modern technology will seek the technological and technical sides in the field of seeking the sea water to make it less costing.xxiv
3. Increase of the sharpness of the food crisis.

The experts unanimously consent that the water crisis now mainly refers to the pressures of population growth that the exhausted the whole resources, and averages of population growth amounting to 3% in the Middle East have never been stopped; and the population abundance will terminate all the planned gains and profits in water development, and also water decrease is grow too bad, because of the climate changes, and the regional are political conditions are also sharing in the water problem aggravation; for the states that participate in the nets of many rivers in the region are unable to elevate over the historic fighting's for cooperation in developing and distributing water resources. And there is a consensus that conflicts on water lead to regional tensions feeding starting from three factors: xxv

1. Fifteen states are now competing on the decreasing resources of the River; the Nile, Euphrates and the Jordan of each now Arab state; as such Ethiopia, Turkey, and Israel consecutively control and dominate.
2. And because of the existing political tensions at present, no basin of the three basins subdues to a comprehensive agreement for dividing water.
3. Also the international law did save a conspicuous basis to agreements as such, and starting from the interference of the political and economic effects of the water crisis in the Middle East, and in the shadow of the non-existence of a clear legal frame allowing the conflicting parties to gain the opportunity of seeking judgment at the principles of the international law, the danger of this crisis increased. Therefore, dealing with how to confront this crisis, should mention two basic factors:

First factor: the strategy of confrontation depends on the nature of the possible scenario of this crisis, which can be confined in two alternatives: the first, with a struggling nature, and the other with a cooperative nature, meaning to perform participant projects to confront the coming danger, which concerns all states at different degrees.

Second factor: this strategy has elements and basic supports either on the popular, or institutional level, or the level of dealing. xxvi

The Possible Scenarios

Firstly: the scenario of war ^{xxvii}

In spite of the increase in the war tone from all partition of the crisis and at different, periods, the exposed area town in the basing of the River Jordan and its tributaries that means a direct confrontation between the Arab parties in the basin and Israel. And the possibility of war occurrence on both from of the Nile and Euphrates can be moved away and improbable as for the Euphrates, the preoccupation of Turkey in its international affairs, and the suffering of Iraq resulting in the effects of both Gulf wars, and Syria's concern concentrated on the Israeli front this all hinder the transformation of confliction to an armed lighting. But as for the basin of the Nile, Ethiopia an else of all states of the basin have no ability to developing an armed conflict in confronting Egypt, or a Sudanese- Egyptian front, except if were supported by great powers or by Israel.

Secondly: the Scenario of Cooperation

This as previously indicated decides that there should be mutual vision of the risks caused by the water crisis in the region, and then it is confronted by a collective effort, the most prominent traits of which are the joint-projects. But as for the basin of the Nile, there are discarding of joint- projects an Egypt, Sudan and Ethiopia, where Sudan represents an important side in these projects, because the possibility to attain performing projects to develop the wader of the Blue Nile and A'tbara River are strong capabilities beside availability of immense lands pliable to plantation on the Sudanese- Ethiopian borders. If a reservoir was built in Ethiopia in this area, and there is a possibility to generate electricity to both states, because the possibility of war has moved away, between them now, or in the near future but as for the water of the basin of Euphrates, there is a scenario for a Turkish project meeting acceptance at the effective parties in the regional and international environment, and that has been guided to by the former American President, Clinton emphasizing a Turkish role, as the says: "we have to encourage Turkey to exploit its civilized and historical characterizations in order to play a greater political and economical role in the Middle East. If the question of the Arab- Israeli light could have been solved, the problem of water would be the most important one in the regionxxviii. And due to that Turkey has rich sources with water; it can share in solving the problem on water, by providing Israel, Syria and the other needing station with water, through great pipes assisted by the United State of America in this affair. And the comprehensive Turkish project covers two projects:

First: Great Anadol South-East Project (GAP), and Turkey had started in executing it.

Second: Project of Turkish Peace Pipes. The different parties may accept it, if it was done by a western supporting manner its water goes into Syria, Jordan and Israel and become to both of Jordan and Syria a characteristics trait corresponding to Israel and be at the beginning of the tube, with the formation of a mutual committee, Arab, Israeli and Turkish to manage the line, on candidate that to be preceded by clearance of the Iraqi- Syrian- Turkish problems as for the basin of Jordan, there is one of the possible projects from the technological side for the regional cooperation; that is opening a canal connecting the Yarmouk River which constitutes the limited between Syrian and Jordan, and Jordan and Israel by Tabourie Lake in Israel and during the months of winter, this canal carries water which will be wasted into the lake, and during the summer season it enable romping water through Yarmouk River into the Ghor Canal that irrigates the Jordanian side of the River Jordan. This is what has been indicated to in the Jordanian- Israeli Peace Treaty.

Thirdly: Level of dealing

This lies within main frames as such

- well- guiding of consuming the available water resources by elevating the capability, maintenance, developing the nets of transportation, distribution of water, changing the crop structure and development of irrigation system.
- Development of available water resources by reservoirs and dams projects and belittling the lost caused by vapor coming from the roves of reservoirs and water courses.
- adding new water resources, either they were traditional (surface water or underground water), or not traditional like resume the water of healthy drainage and water of sweetening. xxix

Sources of Water in the Arab World and Causes of Water Crisis in the Region

Water sources in the Arab world divide into traditional and non- traditional sourcesxxx.

Firstly: the traditional sources:

They are represented in the rain and surface and underground water for the amount of rain which pelt down, over the Arab World is considered great if compared to the population number; for the portion the individual amount to more than 1500 cubic meters, but this num is considered misguiding if we participated other factors, like the thickness of rain- pelting, its distribution and repetition.

But the available surface water at present time, amounts to (127.5) milliard cubic-meters; three Arab countries of them comprise 71% an they are Egypt (34%), Sudan (11%), and Iraq (26%). And this quantity counted to (256) milliard cubic-meters in the year 2000, by an increase of (100%) through dams, and opening up canals in the swamps area, identical with Gongley Canal in Sudan.

But the underground water is divided into annual renewed water and unrenowned water, and the renewed water is of little importance, because of the fewness of rain- water and the height of the average of vapor.

But the non-renewed are those waters which were gathered before seventy centuries during the raining ages which are characterized with the height of temperature and inclusion of melted gases, inappropriate for plantation and the amount of which is about 111 cubic kilo-meter but some experts expect the available amount for invest rent from the underground water, reaches to (25) milliard cubic-meters annually. xxxi

Some researches tend to divide the possible and available water resources in the Arab world in the future on a geographic basis as follows:

- The surface water resources in the basin of the Nile and North Africa (Somalia, Sudan, Egypt, Tunisia, Algeria and Morocco) amount to (107) milliard cubic-meters a year, eighty eight milliard cubic meters only are exploited a year in the present, and the abundance is about nineteen milliard cubic meters, but the future available extreme limit amounts to (155), milliard cubic-meters, and the available after the projects amounts to (69) milliard cubic-meters.
- The surface water resources in the countries of the Arab Orient (Iraq, Syria, Lebanon, Jordan and Yemen) amount about fifty seven milliard cubic-meters a year; fifty-one milliard cubic-meters of them are exploited at present, and the abundance is about six milliard cubic meters a year. And the available surface resources, after the projects, amount to thirty-three milliard cubic-meters a year, but the rest of Arab countries buffer from shortage in their water –balance.xxxii

Secondly: the non-traditional sources xxxiii

These sources are confined to sweeten water at the most of the where the states of the Arab Gulf basically depend on the sweetening stations. The production of the kingdom of Saudi Arabia amounts on milliard cubic-meters a year alone, what approximates the percentage of 45% of this production at the level of the Arab world, follow by other countries, as such the state of the United Arab Emirates, the state of Kuwait, the state of Qatar, Kingdom of Bahrain, Sultanate of Oman and Iraq, in addition to the states of North Africa, Libya, Egypt and Algeria. One of the most prominent negatives of these sources is the high cost of producing the cubic-meter water.

And the causes of water crisis in the Arab region refer to various factors, the most important of which are.xxxiv

- The demographic growth and the consecutive increase in population.
- Improvement of living level of the citizens and increase of water consumption.
- Industrial and tourist progress in the countries of the region.
- Agricultural progress and increase of the cultivated lands area.
- Natural catastrophes.
- Period's drought and the succession of the years of shortage in amount of rains.
- Emergent events like the collapse of roads or dams.
- Miss ruling the productive establishments and Mets of distribution. nxxxv
- Extravagance of water by consumer, either to cultivation, or to house consumption.
- Pollution of water sources and increases the percentage of saltiness in the underground wells.

Many conferences and debates were held to discuss the water problem in the Middle East; there of the treaty of 1926 was held. It is a treaty of good neighborhood between Britain and France for the interest of Syria, Lebanon and Palestine; it worded "all rights and customs dedicated by texts and local customs in employing inverse water canals and lakes for general usage and irrigation remain prevailing into force within the acting conditions" and a treaty between Jordan and Syria was held for the purpose of mutual benefiting from the Yarmouk River in 1953. Then a series of conferences and debates were, held, the most important of which is Nairobi conference in 1978, then the Amman Debates (round- table) in 1984 entitled "Israel and Water", then Bangkok Meeting in 1986 and afterwards series of round- tables and social studies. xxxvi

Then, came the conference of the University of Jordan in 198 entitled "Water Resources of Arab States and Their Strategic Importance", and the meetings succeeded until Geneva International conference on water, which was held within the frame of Peace Negotiations on May 12th, 1992 with the participation of representatives from thirty states and the conference emphasized that without solving the problem of water, there will be no permanence peace in the Middle East, and it is being decided to conclude new conferences on the policies and technologies of world water; that is for discussing solutions of the world water crisis and to avoid fighting, known in history, on water and its sources. xxxvii

Future of Arab Water Security

The Arab water security became under the mercy of external powers that, to a great extent, control our affairs. The water source and their spring are located outside the Arab countries, and what increases the danger of this problem is the absence of an Arab security strategy to protect this national wealth. The Nile River is controlled by seven other states, they are Tanzania, Burundi, Rwanda, Zaire, Kenya, Uganda and Ethiopia, and any modification in the portions of these states, take place on the water earnings will directly affect Egypt and Sudan. And Ethiopia is considered the most threatening to water security in both Egypt and Sudan, because of the news that talk about mutual projects, Ethiopian- Israeli to build up dams on the Nile amounted to (22) dams. And in the Arab orient we find that springs of Euphrates, and it is a source of living of a big division of the Syrians and the Iraqis, are dominated by Turkey which can contract the level of water in dams, for it can possess the key of the Arab food security of about thirty million Arabs. And Israel remains the most threatening source; for it is a water state, as worded in their distorted Old Testament (Torah). "From the Nile was to the Euphrates waterxxxviii. And in the nineties Israel started to practice pressure on Egypt for attaining water from the portion of Ethiopian in the Nile water through the so-called "Peace artificial waterway" below the Suez Canal that connecting to Sinai. xxxix

On the contrary of relations among the states of the basin of the Nile, in which stability at short range, prevail. There of the states participating in the basin of the Euphrates, abundantly the relations among which are exposed to tension those estates to the extent of bursting crises and adulating with employing the water arm.

The Turkish politics sets forth from a respect that both rivers, the Tigris and Euphrates are not international rivers crowing the borders, and as they both spring from Turkey so they are property of Turkey and it has, as it claims the right of absolute command on them both until the end of its borders. And in May 3rd. 1930 Aleppo Treaty was organized to guarantee the rights Syrian in the Euphrates River. And the Turkish, Iraqi and Syrian bilateral relations in passed numerous stages and Turkey had threatened to cut water flowing into Syria, if it did not keep commitment to security agreements wording the prevention of the Kurdish activity. At the inauguration of Ataturk Dam in 1992 Suleiman Demerit declared that springs of water are a property of Turkey likewise oil is a property of the Arabs. And as we do not say to the Arabs, we have half of your oil and it is impermissible for thereof to require what is ours. Forms Turkey Prime Minister Torqout Ouzal had declared that water is an instrument of political kneeling.

Syria had previously built the Euphrates Dam (Al-Tabaqah and Revolt) in the year 1974, which led to decrease the flow of water into about a percentage of 25% of the normal flow into Iraq, that by which the Iraqi threatening escalated and reached to threatening of destroying the dam and mass Iraqi troops on the Syrian Iraqi borders, but the intervention of the Kingdom of Saudi Arabia hindered that, on condition that Syria increases the average of water flowing from the dam into Iraq.

And Iraq perceives that is the most harmed state from the shortage of water, either ordained by its geographic location as mouth of river-state, or as an effect of the climate changes or water dams and projects in both Syria and Turkey. Iraq also perceive that it had been harmed from the Protocol signed between Syria and Turkey in 1987, where its portion did not exceed mine milliard cubic-meters annually, and this resembles half of the lowest limit of the Iraqi needs, and at the same time there is no agreement between Syria and Iraq on relative distribution of what remain of the Euphrates water. And the percentage of saltiness in water increased, because of the shortage of water provision and because of the usages of water in a state of upper course. And in the light of the crisis which took place in the year 1975 between Syria and Iraq, both countries agreed in the year 1990 that Syria takes from water coming from the Euphrates a sum of 42% and Iraq a sum of 58% and Iraq agrees with Syria, that both rivers; the Tigris and Euphrates are international riversxl.

The Ethiopian- Israeli Threatening of the Arab Water Security:

In time of billow of the Arab great support to the revolt of the Eritrean people against the Ethiopian occupation, Israel had done its best to intimate its relations with Ethiopia to break down the Arab collar in the Red sea, and take a way the motional characteristic from this sea, therefore Ethiopia made the Eritrean shores and islands under the American- Israeli domination, and also Ethiopia, by instigation from Israel, opposed executing the project of the High- Dam.And in the year 1974, in the reign of the Ethiopian President, Manjesto Heyla Mariam, Israel intervened to support the separate lieutenant colonel John Garange to separate South Sudan that allows its domination on the Blue Nile. And this resembles a dangerous threat to Egypt's resources from the Nile water.

And the Israeli companies, since the eighties do their best to execute water projects, their number amounts to forty water projects on the Blue Nile River, and due to the high cost of these projects, Israel had intervened to the International Bank to finance these projects. And it is quite certain that Israel aims, through cooperation with Ethiopia at using it a pressure paper on Egypt to agree upon executing the project suggested by Anwar Al-Sadat, consummating of opening the "artifice water way of peace" from the Nile into the Naqab Desert to get by that 1% of the portion of Egypt in the Nile River water. xli.

The Conclusion

After revealing the labyrinth of water in the Middle East with all its dimensions and dangers, it become pretty conspicuous that water revealed to be the main incentive to conflicts and fights in the region, due to the climate changes witnessed presently by the world, which tends towards drought and desertification, especially in the Middle East area, and specifically that the amount of water available on earth is limited, it is lesser than one million cubic meters, for the population of the world had become six milliard people at the time the world lives in a shortage and scarcity of water. And this amount should feed and irrigate three new milliard people. And so it is quite possible for the future wars to be waged upon water, and especially most of sweet water resources available in the world exist at the developed countries which represent more than one fifth of the earth population, then to most of the population increase is taking place in the developing states, specifically the states of the Middle East which a expected to witness conflicts and fights on water in their regions:

1. The valley of the River Jordan region (region of the critical problem it warns of a near-coming war and fights for water. And it is the most sensitive region and comprises Israel (the usurped land), Jordan, Syria and Lebanon.
2. The basin of the Tigris and Euphrates region (jeopardized and momentous region, especially Syria, Iraq and Turkey and also countries of the Arab Island).
3. The Nile basin region (water tension region) and it is a tensioned region, because water is pliable to be at the level of danger in a period of ten or twenty years at a further extreme, and it covers Egypt Sudan, Uganda and Ethiopia.

And it can be said that the abyss of the Arab- Israeli fights is the labyrinth of water and the increasing need for it and it is one of the important sides in the Arab-Israeli fight since the organized processes of the Israeli settlement in Palestine.

And in spite of that the basin of Euphrates constitutes one of the most important living sources of both the Iraqi and the Syrian peoples the Euphrates River lies under the dominations of Turkey which can practice pressure through it on both countries, but also can decrease water amount in dams, as it did earlier with Syria, and it owns the key of food security of about thirty million Arabs.

We deduce from this all to word that the duty of attaining water security is a collective duty the attainment of which is beard by the whole Arab community, and all of its states are invited to confront this coming problem, which threatens millions of human kind, and threatens their destiny and existence. And the required Arab water policy connected with the Arab awareness, able to create incorporate economic consistent and studied, proficient to draw effectively the Arab power and presence. Therefore, it can be said that any future Arab political should include the following:

1. Holding the legal and historic Arab rights in the water resource and never to neglect it, and defend it as any part of the Arab land.
2. Encouraging the governments of the Middle East region to product new forms more efficient to manage the water resources and strategies of storing water.
3. The states benefiting from the water of the River Jordan, the Nile and Euphrates have to reach agreements among them to dividing water, and before that clear international agreements organizing benefiting from the sweet water every where, should have been decided, and the United Nations should intervene to find obligatory solutions and guaranteeing the conflicts.
4. The non-dependence of Arab states on the Turkish- Israeli Peace-pipe with non-allowing to pass across Arab lands, and the water paper should be employed against the Zionist entity as a factor of pressure to forcing the Israeli with drawl from the usurped land.

5. Facing the intention of the Turkish domination by making the Arab Oil a main source to provide Turkey with energy and by developing great mutual economic interests with Ankara, the thing that forces it not to use water as a political arm.
6. Exploiting the Arab states their oil power and their present financial power in making depending on sweetening the sea water a possible affair, from the technological and economic side, and exploiting the solar energy.
7. Using the salty sea water in agriculture like wheat, and the by depending on the sea water directly.
8. Using water of the health drainage in agriculture and using modern irrigation means.
9. Highest degree of benefiting from rain-water and storing in it in pools and dams.
10. Exploiting underground water in the Arab deserts as occurred in the artificial river in Libya.
11. Integration and modernization of the studies of the under ground and surface water resources, and developing the most of climate observation and surface and underground water.
12. Establishing the basic information basis to serve planning the water resources and managing them.
13. Rejecting any water- cooperation with Israel.
14. Disfranchising succession after water- selling projects which flow into the region.
15. Declaring the consumption of available water resources by elevating the efficiency of transporting nets and distributing water and preserving and developing it, changing the productive structure and developing systems of irrigation.
16. Development of water- resources by projects of dams and store-houses and decreasing the lost water caused by vaporizing from the roves of store-houses and waster courses.

And the element of water will be an important element in any coming international strategy, and water element will also play a great role in re-distributing the map of the political power in the region, where the states with available water resources will be the new regional powers.

And from the economic side, it is expected that water will be a good bought and sold like oil, and an increase in the sharpness of food-crisis is also expected.

Footnotes and References

a. Footnotes:

i Anbiya' or the Prophets Sura, Verse(30).

ii Fussilat [Ha Min] Sura, Verses (39).

iii Ibrahim Sura, Verse (37).

iv Nu'h Sura, Verses (9-12).

v Majdi Shindi, "Water: the Coming Fighting in the Middle Ease (Cairo: Darel Magreb, 1992),p.5.

vi Ibrahim Sura, Verse (37).

vii Nu'h Sura, Verses (9-12).

viii Majdi Shindi, "Water: the Coming Fighting in the Middle Ease (Cairo: Darel Magreb, 1992),p.5.

ix Halim Barakat, *The Contemporaneous Arab Community* (Beirut Arab Unity Studies Center, 1st. ed. April 1984), p. 85.

x Ismael Sabri Abdullah, *Political Writings 1965 – 1970* (Cairo: Dael Sha'b 1970), P. 176.

xi Omar Abu Sbeih, "Water and Struggle in the Middle East", (Beirut: Samed Al-Iqtisadi, 1995), p. 24.

See: Abdullah Al-Aqali, *Arab Water Between the Danger of Shortage and Risks of Subordination* (Cairo: Arab Civilization Centrer, 1997) and Hassan Bakr: "Water Perspective in the Arab- Israeli Conflict", *the International Politics*, No. 104 (Cairo: 1991), p. 132.

xii Ali Al-Jerjawi, "Waters of the State of Palestine from Stealing to Restoration", *Palestinian Studies Journal*, No. 40 (Beirut: 1990), p. 85.

xiii Hassan Bakr "Water Wars in the Middle East from Euphrates to th Nile", *The International Politics*, No. 111 (Cairo: 1992), P. 75.

xiv Rida Salman, "Israel's Water Crisis and Lebanon's Water", *Palestinian Studies Journal*, No. 3 (Beirut: 1990), P. 231.

- xv I'ssam Khalifah "Water Crisis and the Issue of Peace in the Middle East, Israel Connects Peace with its Attaining a Portion from Water", serial pamphlet, No. 220 (Amman: the Royal Committee for Jerusalem Affairs, 1992).
- xvi Samer Mukheimer and Khaled Hijazi, The Crisis of Water in the Arab Region, the Possible Facts and Alternatives, world of knowledge, No. 209 (Kuwait: the National Council for Culture and Arts).
- xvii Hassan Hamdan Al-A'lkeem: "Water Crisis in the Arab World and the Probable War", Social Science Journal, No. 3 (Kuwait: Autumn 1995).
- xviii Abbas Qasim, "Greeds in the Arab Waters and their Geopolitic Dimensions", The Arab Future, No. 174 (Beirut: The Arab Unity Studies Center, 1993), pp. 25-39.
- xix Nabil Faris, Water War in the Arab- Israeli Conflict (Cair Darel Itisam for Printing, Publication and Distribution) pp. 60.
- xx Nabil Faris, CF. Ibid, pp. 60-61.
- xxi Abbas Qasim, CF. Ibid, pp. 25-39
- xxii Nabil Faris, CF. Ibid, p. 24.
- xxiii A'dnan Hussein, "Jordanian- israelian Institutions in their implications and Dimensions", Journal of the Middle East Affair No. 48 (Beirut: 1996).
- xxiv Yaser Ali Hashem, "The Political, Legal and Economic Dimness of Water Crisis", the International Politics, No. 104 (Cairo: Al-Aram Association, 1991), pp. 150-158.
- xxv Hassan Abdel Qader Saleh, "The Geographic Basis of the Arab- Israeli Conflict", Journal of the Faculty of Arts, No. 1 (Amman: University of Jordan, 1972), p. 54.
- xxvi Subhi Taha, Al-Dustor Newspaper. "Dimensions of the War Crisis in the Arab World", a political file, (October 27th., 1994)
- xxvii Ahmad Said Nawfal, "Water War in the Middle East", Arabic Studies, No. 7-8 May 1994, p. 70.
- xxviii Yaser Ali Hashem, CF, Ibid, pp. 150-158.
- xxix The Hashemite Kingdom of Jordan, Ministry of Planning, the Development, Economic and Social Scheme 1986- 1990 (Amman: 1988).
- xxx Hassan Abdel Qader Saleh, Demographic and Geographic Inhabitants of Palestine, (Amman, Darel Shorouq, 1985).
- xxxi Samer Mukheimer and Khaled Hijazi, CF. Ibid, p. 179.
- xxxii Nabil Faris, CF. Ibid, pp. 76-77.
- xxxiii Yaser Ali Hashem, CF. Ibid, pp. 155-158.
- xxxiv Al- Mukhtar Mutees, "Connection of Water Security with the Food Security", AL-Wahdah (Unity) Journal, No. 76 (Rabat: the National Council for the Arab Culture, 1991), P. 4.
- xxxv CF. Ibid, P. 14.
- xxxvi Hassan Al-Shubaki: "The Arab Water Security", Al-Whada Journal, No. 76 (Rabat: 1991), p. 26.
- xxxvii Jan Alkan, "The Water Wealth", AL-Wahdah Journal, No. 76 (Rabat: 1991), pp. 116-117.
- xxxviii Abdullah Al-A'qqali, CF. Ibid.
- xxxix UNISCO organization Report, January 1992.
- xl Jan Nakd, "Water Wars", the Arab week (Bairut: Nov. 4the 199).
- xli Mustafa Abdel Hamid, "Water Crisis in the Arab World", Al-Yaqtul Arabiyyah, No. 26 (Cairo: Rosel Yousef Printing Press, Ju 1989).
- X1i Jamal A'lloush, "The Coming War in the Middle East", Journal of Dire'l Watan, No. 352 (Abu Zabi: Nov., 2000) pp. 54-55.
- X1ii Sarmuel Labib Sbeiha, "The Historical Dimensions Water Problem between Arabs and Israel 1948-1998", The Third Annual Conference "The Arab Water and Challenges of the Twenty- First Century, (Asiut: Asiut University, Century for Future Studies, 1998), pp. 12-15.
- X1iii Hassan Bakr, Water Wars in the Middle East from the Nile to the Euphrates, CF. Ibid, pp. 75-83.
- X1iv Abbas Qasim, CF. Ibid, pp. 25-39.

b. References

1. Holy Qur'an.
2. Abdullah Al-Aqali,(1997), "Arab Water Between the Danger of Shortage and Risks of Subordination (Cairo: Arab Civilization Center).
3. Ali Al-Jerjawi,(1990), "Waters of the State of Palestine from Stealing to Restoration", *Palestinian Studies Journal*, No. 40 (Beirut).
4. A'dnan Hussein(1996),"Jordanian- Israeli Institutions in their implications and Dimensions", *Journal of the Middle East Affair* No. 48 (Beirut).
5. Abbas Qasim,(1993), "Greeds in the Arab Waters and their Geopolitics Dimensions", *The Arab Future*, No. 174 (Beirut: The Arab Unity Studies Center).
6. Ahmad Said Nawfal,(1994), "Water War in the Middle East", *Arabic Studies*, No. 7-8 May.
7. Halim Barakat,(1984), "The Contemporaneous Arab Community (Beirut Arab Unity Studies Center, 1st. ed.).
8. Hassan Bakr,(1992), "Water Wars in the Middle East from Euphrates to th Nile", *The International Politics*, No. 111 (Cairo).
9. Hassan Hamdan Al-A'lkeem,(1995), "Water Crisis in the Arab World and the Probable War", *Social Science Journal*, No. 3 (Kuwait: Autumn).
10. Hassan Bakr,(1991), "Water Perspective in the Arab- Israeli Conflict", *the International Politics*, No. 104 (Cairo).
11. Hassan Abdel Qader Saleh,(1972), "The Geographic Basis of the Arab- Israeli Conflict", *Journal of the Faculty of Arts*, No. 1 (Amman: University of Jordan).
12. Hassan Abdel Qader Saleh,(1985), *Demographic and Geographic Inhabitants of Palestine*, (Amman, Darel Shorouq).
13. Jamal A'lloush,(2000), "The Coming War in the Middle East", *Journal of Dire'l Watan*, No. 352 (Abu Dhabi).
14. Majdi Shindi,(1992), "Water: the Coming Fighting in the Middle East (Cairo: Darel Magreb).
15. Mustafa Abdel Hamid,(1989), "Water Crisis in the Arab World", *Al-Yaqtul Arabiyyah*, No. 26 (Cairo: Rosel Yousef Printing Press).
16. Omar Abu Sbeih,(1995), "Water and Struggle in the Middle East", (Beirut: Samed Al-Iqtisadi).
17. Rida Salman,(1990), "Israel's Water Crisis and Lebanon's Water", *Palestinian Studies Journal*, No. 3 (Beirut).
18. Subhi Taha,(1994), "Dimensions of the War Crisis in the Arab World", a political file, (*Al-Dustor Newspaper*, October).
19. Sarmuel Labib Sbeiha,(1998), "The Historical Dimensions Water Problem between Arabs and Israel 1948-1998", *The Third Annual Conference "The Arab Water and Challenges of the Twenty- First Century*, (Asiut: Asiut University, Century for Future Studies).
20. Yaser Ali Hashem(1991), "The Political, Legal and Economic Dimness of Water Crisis", *the International Politics*, No. 104 (Cairo: Al-Aram Association).