Water Shortage in the Arab world: the Repercussions and Causes of the Water Crisis

Edited by Ereny Guirguis

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The availability of water resources is considered to be one of the most important challenges facing most countries of the world at the present time, especially in the Arab region with a dry and semi-arid desert climate. The uneven distribution of water to the various economic sectors and the misuse of water resources are among the main factors that play a devastating role in security of water resources in the country, as well as the poor distribution of water resources geographically and the difficulty of exploiting the available resources efficiently ones in many areas

This is be evident through the recent UN reports, noting that water security in the Arab world has become threatened with the decline in the share of water allocated to the individuals due to geographic and other factors related to climate change and population growth, as well as Poverty line and water deficit

Therefore, the issue of water is one of the most important issues of common concern among the Arab countries, given the magnitude of the risks and threats facing those countries, unless the use of available water quantities is rationalized and optimally employed, especially with the steady increase of the population and the continuation of the conflict over available fresh water sources

2) Person's right to water

2.1) Defining the right to water

Water is a natural resource and a basic right that an individual cannot dispense with in order to have dignity and a decent life. Water is also necessary to prevent death, due to the loss of fluids from the human body, and to reduce the risk of water-borne diseases. It is also necessary for consumption, cooking, and personal and home requirements. Access to water and sanitation is a prerequisite

for life and a human right. Moreover, water is vital to sustainable development—in terms of health, nutrition, gender and the economy

According to the World Health Organization, each person requires a minimum quantity of 50 -100 liters of safe water per day to maintain his life and health and to ensure that his basic needs are met, and to avoid the occurrence of many health vulnerabilities and crises; It also includes the right of the individual to have access to safe drinking water and sanitation services in places of detention; It also includes the right of individuals to participate in decision-making related to water and sanitation at the national level and at the level of local communities. According to the United Nations, an individual requires 1,000 cubic meters per year.

2.2) The right to water in international human rights law and international conferences and agreements

Although the right to water is not explicitly specified as a separate right in international law, it is an essential part of ensuring the realization of the right to an adequate standard of living, and is recognized by a wide range of international human rights instruments. International human rights law has specific obligations regarding access to safe drinking water. These obligations require states to ensure that everyone has access to an adequate quantity of safe drinking water, and to protect the quality of drinking water supplies and resources.

Where the United Nations emphasized during the United Nations Conference on Water in Mar del Plata, Argentina in 1992 the right of all people to have access to drinking water in quantities and quality equal to their basic needs, regardless of the stage of development reached and their social and economic conditions. A number of other plans during the conference subsequently referred to safe drinking water and sanitation as human rights. During the 1994 International

Conference on Population and Development, states affirmed that all persons have the right to an adequate standard of living for themselves and their families, including adequate food, clothing, housing, water and sanitation.

In November 2002, the Committee on Economic, Social and Cultural Rights adopted its General Comment No. 15 on the right to water, recognizing “the right of everyone to adequate, safe, acceptable, physically accessible and financially affordable water for personal and domestic use”

The Subcommittee on the Promotion and Protection of Human Rights then adopted some guiding principles on the right to water in 2006, emphasizing the right of the individual to clean water and “the right of every person to have access to adequate and safe sanitation that protects public health and the environment”

In 2007, the United Nations High Commissioner for Human Rights conducted a study on human rights obligations relating to access to safe drinking water and sanitation. Through this study, the United Nations emphasized that "it is time to consider access to drinking water and sanitation as a human right." Hence, specific commitments regarding access to safe drinking water and sanitation facilities are increasingly recognized in the major human rights treaties.

There are also many international human right treaties that entail obligations related to access to safe drinking water and sanitation, including:

- Article 14(2) of the Convention on the Elimination of All Forms of Discrimination against Women, adopted in 1979

-Article No. 5 of ILO Convention No. 161 relating to occupational health services, adopted in 1985

-Articles 24 and 27 (3) of the Convention on the Rights of the Child, adopted in 1989

-Article 28 of the Convention on the Rights of Persons with Disabilities, adopted in 2006

It is also important to refer to the International Decade for Action on Water for Sustainable Development, which was made to accelerate efforts addressing water-related challenges, the United Nations General Assembly proclaimed the period between 2018 and 2028 as the International Decade for Action, "Water for Sustainable Development." The contract began in conjunction with the World Water Day on March 22, 2018, and will end on the same occasion on March 22, 2028.

This decade focuses on sustainable development and the integrated management of water resources in order to achieve social, economic and environmental goals, and on the implementation and promotion of related programs and projects, as well as on strengthening cooperation and partnership at all levels to help achieve internationally agreed goals and objectives related to water, including the goals set out in the 2030 Agenda for Sustainable Development

The contract also highlights the importance of promoting water efficiency at all levels, taking into account the interdependence of water, food, energy and the environment; It stresses the importance of the full participation of all relevant stakeholders, including women, children, youth, older persons, persons with disabilities, indigenous peoples and local communities.

3) the water situation in the Arab world

3.1) The reality of water scarcity in the Arab world

Water scarcity threatens development in the Arab region; decreasing and fluctuating rainfall rates, high evaporation rates, and frequent droughts lead to a decrease in the ability to depend on and availability of water resources. Although Arab countries occupy 10 percent of the world's area, the average annual rainfall

in it is only 2.1 percent, and the amount of internal renewable water resources in the region exceeds only 6 percent of the global average annual rainfall of 38 percent. Also, 90 percent of the land is in the Arab region are arid or semi-arid lands, due to the scarcity of rain water, which has become more difficult to predict with changes in climate patterns. In addition, 45 percent of all agricultural land is exposed to salinity, soil nutrient depletion, wind erosion, soil erosion and desertification

The population of the Arab world is currently more than 400 million, and the population growth rate in the Arab world is relatively high compared to the population growth rate in the world. The increasing population in the Arab world has led to an increase in the demand for water due to the economic, social and cultural development in the Arab world and the transformation of most of its societies into consumer societies. Hence, the rapid growth of the population has led to pressure on water resources and an imbalance between the available resources and the demand for them

The United Nations Water Development Report 2019 classified most countries in the Arab region in the poverty line and water deficit. The report warned that the share water resources for Arab citizens is declining significantly, while the uneven distribution of water resources in many regions is classified in the "water poverty line", which is equivalent to 1000 cubic meters, and the "extreme water poverty line" if it descends under the ceiling of 500 cubic meters. The case is that all the figures indicate that the share of the Arab citizen is estimated at 660 cubic, which is below the water poverty line adopted by the United Nations at 1,000 cubic meter per year

The quantities of water used in the Arab world do not cover the full needs of its residents, as we find that 30% of the population of the Arab world does not have access to clean and sufficient drinking water, and the water used in agriculture does not allow the achievement of Arab agricultural food security

One in four people facing "very high" water shortages, according to a World Resources Institute (WRI) report published on August 6, 2020. Of the 17 countries with a major water crisis, 12 are in the Middle East and North Africa, with Qatar, Israel and Lebanon at the top of the list, according to the institute's website. Iran, Jordan, Libya, Kuwait, the UAE, Bahrain and Oman are included in the list of countries with very high water crisis. In addition, 27 other countries suffer from severe water shortages, including Yemen, Algeria, Tunisia, Morocco, Iraq, Syria, Turkey, Egypt and others

The Arab region also suffers from the problem of water distribution between countries, which is one of the thorny issues, especially since that around 60% of the running water in the region crosses international borders, such as the Nile River, for example, which is still a source of contention, as the upstream countries (Ethiopia) have been suspended at many times. , Uganda, Kenya, Tanzania, Rwanda, Burundi, the Democratic Republic of the Congo and Eritrea negotiating with the downstream countries (Egypt and Sudan) over their share in the Nile waters

It is expected that by 2025, Iraq, and possibly Sudan, could become the only two countries in which the average water exceeds 1,000 cubic meters annually. By 2030, climate change will lead to a 20% decrease in renewable water resources and an increase in the frequency of droughts due to a decrease in rainfall, a rise in domestic and agricultural demand for water due to rising temperatures, and an increase in the intrusion of saline water into coastal aquifers, with a higher surface of the sea level, and the continued overexploitation

The Arab Mashreq region, which includes Jordan, Syria, Iraq, Palestine and Lebanon, contains about 31.1% of the available water quantities in the Arab world. This region enjoys the highest per capita share of water available in the Arab world, but it also has the highest rate of water consumption in the Arab

world. There is a large disparity among the countries of this region in the amount of water available and the per capita share of it.

The Arabian Peninsula region, which includes Saudi Arabia, the Emirates, Bahrain, Kuwait, Qatar and the Sultanate of Oman, in addition to Yemen is characterized by its scarcity of water resources, as it contains only about 7.7% of the water available in the Arab world. The countries of this region are classified as having water poverty. 44.7% of the water resources in this region are located in the Kingdom of Saudi Arabia, 32.0% in Yemen, 11.1% in the Sultanate of Oman, 5.6% in the United Arab Emirates, 4.1% in Kuwait, 1.5% in the Kingdom of Bahrain and 1% in Qatar.

The central region of the Arab world, which includes Sudan, Somalia, Djibouti, and Egypt, is considered the richest region in water resources, where about 42.0% of the quantities of water available for use in the Arab world are concentrated in this region. Egypt accounts for about 60% of the water available in the region, while the shares of Sudan, Somalia and Djibouti are 28.1%, 10.7 and 0.3%, respectively.

The Maghreb region, which includes Tunisia, Algeria, Libya, Morocco and Mauritania, contains about 1.2% of the available water in the Arab world. 41.5% of the available water in this region is in Morocco, 26.4% in Algeria, 15.6% in Mauritania, 8% in Tunisia and 6.7% in Libya

The reality and the water situation that the countries of the Arab world enjoy constitutes a specific regional policy among them in terms of erecting dams on their course, and in terms of the mechanisms available to use this stream, and in terms of especially the water policy adopted by countries towards each other, for example, The Tigris and Euphrates rivers are shared by Syria and Iraq in terms of the source and the stream, which forced them to set a specific policy on how to manage this energy, and there are many other examples and by setting up a

specific political agreement between them, the share of each country is determined. This has led to many disputes and conflicts between Arab countries over water resources.

3.2) Disputes and conflicts between Arab countries over water resources

There are a lot of disputes and conflicts between Arab countries because of water sources. This paper will focus on the disputes between Turkey, Syria and Iraq over the Tigris and Euphrates rivers, and the disputes of Ethiopia, Egypt and Sudan over the waters of the Nile River and the Renaissance Dam.

a) Turkey, Syria and Iraq: a dispute over the Tigris and Euphrates rivers

The Tigris and Euphrates rivers were transformed from two national rivers to two international rivers under the authority of Syria, Turkey and Iraq after the collapse of the Ottoman Empire in the First World War. The authority and tasks of each state were defined and assigned in relation to those two rivers, as Turkey specialized in the source and upper course of the Euphrates and the Tigris, and Syria in the middle course of the Euphrates, and Iraq in the Tigris River and the lower course of the Euphrates. Due to the sharing the waters of the Euphrates is the three countries' disputes over water resources and resources, Turkey (the upstream country) has been able to use this paper as a geopolitical weapon in dealing not only with Syria and Iraq, but with other Arab countries.

Since then, it was necessary to establish a set of rules, provisions and agreements regulating water use between Iraq, Syria and Turkey. In 1923, Article No. 109 of the Treaty of Laurent stipulated the necessity of forming a joint committee that would bring together Syria and Turkey under French authority, and Iraq under British authority, in order to find solutions to potential disputes over water resources. The Treaty of Friendship and Good Neighborliness was conducted in 1946, which is a protocol related to regulating the use of the waters of the

Euphrates and the Tigris, signed between Turkey and Iraq, and then several international and bilateral agreements were concluded, but these agreements did not practically bind Turkey, and it proceeded to ignore all the rules and provisions that regulate the use of shared water.

Since 1936 and for a period of five decades, Turkey had begun to benefit from water resources and to develop plans to build dams, and the plan was presented in a clearer and more organized way in 1980, when it developed a comprehensive general plan linking a number of water projects, called the “Great Southeast

Anatolia Project" Where is the source of the Tigris and Euphrates rivers. And that project is the largest project in the history of the Turkey, and it consists of no less than 22 dams and 19 hydroelectric power stations spread over the Tigris and Euphrates rivers

This in turn raised the concern of Iraq and Syria about the enormity of the project, which will reduce the flow of water to the banks of the rivers by a very large percentage. In 1983, a tripartite committee was formed to solve the problem and meetings were held for nine years, but it was not able to reach any "tripartite" agreement on regulating the use of Euphrates water. The construction of Turkish dams and hydroelectric power generation on the two rivers reduced the flow of water to Iraq by 80 percent and to Syria by 40 percent. Both Syria and Iraq accused Turkey of storing water and threatening its water supplies.

In 2006, the foundation stone was laid for the largest project in Turkey, the third largest of its kind in the world, which is The Ilisu Dam the largest ever in the size of its threat to the future of Iraq. On June 1, 2018, Turkey announced the start of the process of filling the dam's reservoir, and since then, fears have begun to turn into reality and a catastrophe has begun to unfold in various parts of Iraq and Syria.

b) Egypt, Sudan and Ethiopia: a dispute over the waters of the Nile

The origins of the Egyptian-Ethiopian dispute over the Nile go back to the Anglo-Egyptian Treaty of 1929, to which the Ethiopians were not a party, but which the United Kingdom claimed to have negotiated with Egypt on behalf of Ethiopia and a number of other Nile Basin countries under the control of The British. In 1959, three years after the independence of Sudan from Anglo-Egyptian rule, Khartoum and Cairo signed their own agreement on the Nile River. The 1959 agreement enshrined the Anglo-Egyptian treaty, and introduced amendments that benefited

both countries, such as increasing Egypt's guaranteed annual share of water to 55.5 billion cubic meters, and Sudan's share to 18.5 billion cubic meters. This time also, Ethiopia and other countries were not consulted in the agreement

For this reason, Addis Ababa considered for many years that the 1929 treaty and the 1959 agreement do not take into account its water needs, bearing in mind that the Blue Nile, which originates from its highlands, as well as the Atbara River to a lesser extent supplies the main river with 80 percent of its water that flows into the Sudan and Egypt

When Ethiopia launched the Renaissance Dam project in April 2011, it did not consult either Egypt or Sudan, as it considered the issue to be simple and related to Ethiopian sovereignty. For their part, the Egyptian authorities know very well that the Blue Nile, on which the dam was built, is the main source that feeds the Nile River and supplies the country with the largest amount of water on which it relies heavily. Therefore, these Addis Ababa steps were considered as a wake-up call for Cairo. Ethiopia has stalled in allowing an environmental and social impact assessment of the dam, a requirement under international law when implementing such projects. In this context, the Ethiopians have repeatedly stressed that the issue is related to the sovereignty of their country

In 2012, Egypt showed some flexibility. In the same year, Egypt, Ethiopia, and Sudan agreed to assign a team of international experts to study the potential impacts of the dam. In March 2015, the three parties signed the Declaration of Principles in Khartoum. Under its provisions, Ethiopia had to implement the recommendations of the International Committee of Experts, which included conducting an environmental and social impact assessment, which many observers considered a step that paves the way for the conclusion of another agreement that deals with more details between the three countries, and sets rules and conditions regarding the mechanism for filling the dam’s reservoir. and how

to operate it. But Ethiopia later returned to its original position and refused to allow an impact assessment to take place

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In February 2020, it seemed that Egypt, Ethiopia, and Sudan were on the verge of resolving their differences. Washington, DC, hosted the latest of the ten rounds of negotiations that spanned over five years under the auspices of the administration of former US President Donald Trump and the World Bank. Out of these long negotiations was born the proposal of an agreement, but Ethiopia backed down and refused to sign it due to fears that its provisions would constitute a violation of its sovereignty. A few months later, the Ethiopian government renewed its intention to start filling the dam's reservoir in July. Egypt, which considered such a unilateral step in violation of the Declaration of Principles, demanded that the UN Security Council condemn it immediately.

After a short period, the African Union intervened and was able to persuade the two parties to resume negotiations under its auspices, but this time the Egyptian-Ethiopian relations had weakened, which prompted the two parties to adopt a somewhat improvised formula that required tripartite negotiations between Egypt, Ethiopia and Sudan in the presence of officials from the African Union.

Sometimes. However, these negotiations did not achieve tangible results. Rather, they caused a dispute between Sudan on the one hand and Egypt and Ethiopia on the other hand over the scope of the African Union's intervention. In the meantime, the danger is that Egypt is beginning to feel that it is running out of time

3.3) The concept of water crisis

The water crisis can be defined as "an imbalance between the renewable and available water resources and the increasing demand for them, which is represented by the emergence of a deficit in the water balance that is constantly increasing and leads to hampering development, and this deficit is the situation in which the volume of water needs exceeds the amount of renewable and available water resources. It is also called the This deficit (the water gap). When the water deficit reaches a degree that leads to economic and social damages that threaten the structure of the state, it has reached the so-called water crisis.

3.4) Causes of the water crisis in the Arab world

The Arab region suffers from a shortage of water resources, which leads to conflicts between countries. There are many reasons for the water crisis in the Arab world, including: 1) the increase in the number of populations in the region, which leads to an increase in the demand for water, 2) the increase in the number of immigrants at a rate that does not correspond to water resources, 3) the pollution that leads to global warming, and therefore a large part of the water evaporates. 4) There is another reason related to the geographic dimension, as the Arab neighboring countries control about 85% of the Arab water resources. There are some political reasons associated with the water crisis: 1) The absence of international treaties and agreements on how to use the water in a legal way that

preserves the right of all countries to water resources, and because of the weakness of mechanisms and the compulsion of international law. 2) Due to the nature of the colonial relations between the geographic neighboring countries and the Arab countries, for example Israel and its desire to exploit the water factor as an element of political pressure and deprivation for the Arab countries. 3) The Regional Alliance (Turkey - Israel and Ethiopia), where Israel and Turkey are trying to play important and regional roles in the region and to consolidate their influence by exploiting the Arab need for water, for political and economic purposes

3.5) The efforts of the Arab countries and the projects that have been put forward to address the water crisis in the Arab world

Arab countries have exerted many efforts to solve the water crisis, and several projects have been planned to solve the crisis. The report will focus on a project to withdraw ice blocks from the pole for the Gulf countries and Arab strategy for water security 2009-2025.

a) A project on dragging ice blocks from the pole for the Gulf countries

It is an Emirati project that pins great hopes on an iceberg to address the problem of water shortage. The United Arab Emirates, and indeed the Gulf countries in general, are among the countries that rely the most on desalination plants to meet their fresh water needs. However, this method is very expensive and harmful to the environment. Millions of gallons of salt water are dumped into the Arabian Gulf, which leads to a high salinity of its waters every year, and from this point of view, this option will not last in the long term.

An amount of $100 million had been allocated for the project at that time, but technical issues hampered its implementation, including the weakness of ships and shoals in the Bab al-Mandab Strait.

According to Abdullah, “As for the United Arab Emirates, these two problems have been resolved, because we currently have a large number of powerful ships and barges, which can help us carry out the operation safely. We will also anchor the iceberg on the eastern coast of the country. The United Arab Emirates, so we don't need to cross the Strait of Hormuz."

b) Arab strategy for water security 2009-2025

In 2009, the Arab Ministerial Council for Water approved a unified strategy that extends to 2025 that seeks to achieve Arab water security, especially since most Arab water sources are from non-Arab countries, and forcefully opened the file of Arab water diverted to Israel

This comprehensive Arab strategy is based on several axes, the most important of which is the establishment of an information base for Arab water resources, the protection of Arab water rights, and the confrontation of climate changes in the Arab region.

Most of the council members approved a draft executive plan with a total cost of $10 million, which includes five projects, and aims to rationalize water use and expand the use of conventional and non-conventional waters, in cooperation with the Arab Center for Studies of Arid and Arid Zones. Within the framework of evaluating the implementation of the Millennium Goals, the Arab Ministers of Water called for attention to the field of sanitation through the expansion of these networks and the establishment of an in-depth study on this subject.

Conclusion and recommendations

Water shortage is considered one of the strongest challenges facing most Arab countries, as the report explained in advance for several reasons, including the increase in the number of populations in the region, which leads to an increase in water demand. The rising temperature of the earth, and consequently the evaporation of a large part of the water, 4) There is another reason related to the geographic dimension, where the Arab neighboring countries control about 85% of the Arab water resources. There are some political reasons associated with the water crisis. There are some political reasons, which led to many conflicts between the countries of the Arab world over water resources. This will conclude this report with some recommendations to solve the water crisis

- All Arab countries shall conduct a water survey of water resources following the conduct of the general population census and determining the rate of population growth and the growth in water resources that must be followed, this will increase is to determine the annual per capita share of current and future water resources

- Working on directing Arab capital to invest in the development of water resources projects in the Arab countries, such as building dams, digging wells, and constructing hydroelectric stations.

- Arab countries cooperates and have links with regional and international organizations and bodies concerned with water affairs

- Assessing the trends of the foreign policies of the geographical neighboring countries and the potential impact of these policies on their behavior in the water issue and setting the necessary models and perceptions for Arab foreign policy makers, as well as evaluating and analyzing the impact of existing or potential Arab conflicts on the water system and setting appropriate mechanisms to reduce these conflicts in general, or at least limit their impact on the water system.