Water Scarcity Threatens Life in The Arab World

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It is an initiative launched by the Forum for Development and Human Rights Dialogue (FDHRD) consisting of ٥٠٠ associations and development organizations in ٩ governorates that aims to enhance the human rights situation in Egypt, strengthen partnerships and exchange experiences.

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Introduction

The issue of water scarcity is the biggest concern for many countries in the world in recent times, whether suffering from scarce fresh water resources or even abundant resources. According to the ٢٠١٥ UN report, this issue occupies the ٢٠٢٣ UN SDG٦. It is one of the most important issues for many Arab countries. Water represents one of the important natural resources in human life, and life cannot develop without it, and the balance of water, its quality and use changes within one country, or one region. The Arab world suffers from a worse water crisis compared to the countries of the world. This is related to the geographical and geological reality of the Arab world, as its climate is dry and semi-arid, and characterized by lack of rainfall and high temperatures.

This confirms the emergence of signs of a water crisis as a result of the lack of water balance between the water worm and the increase in demand for it, which means that the Arab world will face a water crisis that will negatively affect the process of economic development and social awareness of the Arab world and threaten its food security, and this issue is exacerbated locally in light of the potential negative effects of climate change, the challenges of population growth, the expansion of economic activities, the growing international disputes over the ongoing and proposed dams, and the increase in pollution rates, which leads to an increase in the volume of demand for water with the possibility of a decrease in available water resources and pollution, and thus the inability to meet the water needs of various sectors and development activities. Together, these factors point to a potential water catastrophe unless a set of measures and actions are taken to reduce the water crisis.

The international community has increasingly recognized that in order to address this crisis, access to drinking water and sanitation must be considered within a human rights-based framework. Although water is not explicitly recognized as a separate human right in international treaties, international human rights law entails specific obligations regarding access to drinking water. The lack of water in particular is in itself a denial of a life priority, which makes it impossible to maintain a normal human life, and the lack of secure sources of water resources prevents the creation of an environment for living and development. We will address this crisis by explaining through several axes, namely defining water scarcity, identifying its causes, clarifying its various harms on humans and their rights, presenting models

for some Middle Eastern countries that suffer from this crisis and its impact on them. We also mention some international and Egyptian efforts to address water shortages, and finally make some recommendations.

Definition of Water Scarcity:

Deficit of sufficient available water resources to meet the demand within the region for all uses, whether for drinking, domestic, industrial or agricultural uses. This deficit is caused by environmental and health problems that lead to several problems, including the weakness of water resources. The definition of water scarcity is associated with the depletion of usable freshwater resources and the increasing use of freshwater itself. In general, the term scarcity or shortage of water can refer to the physical or (absolute) scarcity of water resources, or to the scarcity of access to these resources.

In physical or (absolute) scarcity of water resources, natural water resources are not sufficient to meet demand. This form of scarcity can be either from supply or demand: supply-driven scarcity is due to resource depletion and degradation as is the case in most of the Arab region, while demand-driven scarcity is one of the causes of rapid population growth either as a result of natural demographic increase or migration. The Middle East region is located at the crossroads of migration pathways within and during the region. Countries of origin, transit and destination intersect in the region, which experience mixed population movements resulting from protracted conflict and violence situations and other social, political, economic and environmental factors. It also hosts and sends large numbers of migrants in the world, including refugees, asylum-seekers and other people fleeing armed conflict who are in need of international protection, as well as migrants in transit or stranded in conflict zones and facing significant protection risks.

Lack of access to resources refers to economic scarcity, where water resources are sufficient but not managed efficiently, for example due to a lack of capacity by institutions to ensure a regular water supply, or due to a lack of investment in adequate infrastructure, which leads to poor water quality and the limited participation of civil society in the management process or its reluctance to participate. Mismanagement is often the cause of water scarcity, meaning that countries often lack the means to supply and distribute water in an accessible manner, rather than suffer from shortages of water itself. This form of scarcity is

inaccurately related to what we might define as structural scarcity, an uneven distribution of resources that may have been artificially manufactured by powerful stakeholders to retain water resources for exclusive use. This is usually the case in upstream versus downstream countries, whose scarce shared water resources may lead to either cooperation or conflict.

The importance of the concepts of economic and structural scarcity is that they remind us that the limited availability of resources must be framed within social, economic and governance dynamics. While scarcity is in fact tangible, it is an integral part of complex social organizations and economic processes, and is therefore subject to power relations. Moreover, scarcity is objective, because, unlike enormous numbers, actors with different intentions may experience scarcity differently.

It is important to note that the term "water scarcity" is often used as a synonym for the terms "financial stress" and "water risk", which is incorrect. Water stress is concerned with many physical aspects of water resources: not only scarcity itself, but also water quality, environmental flows, and access to water. Of the ١٧ countries with the highest levels of water stress in the world, ١٢ are in the Arab region. Water risk instead refers to the possibility of an adverse water-related event due to scarcity, pollution, poor water management, inadequate infrastructure, or climate change, as is the case with the concept of structural scarcity.

Causes of the Water Shortage Problem:

- **Scarcity, limited water resources and pollution of water environments:**

Freshwater is a scarce resource; no more than ٢,٥٪ of the planet's water is fresh water suitable for human consumption, most of which is inaccessible, about ٧٠٪ of which is trapped in glaciers, snow and ice. The largest source of freshwater is groundwater, where rivers, streams and lakes contain only ٠,٣٪ of freshwater.

Whatever the causes of water scarcity, it has serious effects on earth and on humans, followed by social, economic and even political problems. Man often remains the main factor in causing this scarcity and in the possibility of avoiding it, through the fact that this scarcity is a natural reality, but perceptions of the quantity and quality of water are always part of the human relationship and attitudes towards his environment. Talking about water security is also linked to the limited water

resources and their exposure to the dangers of pollution, which depends in determining them on various indicators, the most important of which are:

١- Quantitative Index: The concept of limited water resources is based on:

Water-poor countries: It is determined when the annual per capita share of water is less than ٢٢٢٢ cubic meters as the limit of global water poverty, and this criterion was adopted as a result of the classification of analysts, where they divided countries into:

Water-abundant countries: in which each individual receives annually a quantity of water exceeding ٢٢٢٢ cubic meters.

Water- stressed countries: per capita gets annually between ٢٠٢٢-٢٢٢٢ cubic meters.

Water-scarce countries: per capita annually receives less than ٢٢٢٢ cubic meters.

Many water experts refuse to consider the figure of ٢٢٢٢ cubic meters per capita per year as a limit of water poverty, because the value of this indicator is constantly decreasing in almost all countries of the world due to the growing population. Therefore, many researchers agree that the rate of ٢٢٠ cubic meters of water per capita per year is the appropriate limit for arid and semi-arid areas, including the Arab region.

٢- Qualitative indicator: It means the unsuitability of all or some of the available volume of water resources for agricultural, industrial, and domestic use, i.e., the availability of water in large quantities while it is not fit for drinking or for other purposes due to pollution. The problem of pollution, despite its relative recentness, is one of the obstacles to water security, as river water in most developing countries is witnessing significant decline in dissolved oxygen levels. This is a key indicator of contamination of running water from sewers. It is estimated that about ٩٠٪ of wastewater is discharged to rivers and seas without any treatment, leaving half of the population of developing countries suffering from health problems due to the inability to secure water, in addition to the economic losses they incur.

٣- Economic indicator: means the situation in which there is an abundance of water available in a certain period of time and of good quality, but there are no material and economic capabilities that allow the establishment of the necessary

infrastructure to connect water supplies for drinking, irrigation and drainage. In this case, the absence of water installations necessary to deliver water to users results in the inability to use water, which is the same consequence as the absence of water completely or its presence in small quantities. Different regions of the world vary in the degree of richness or poverty of available water, but all of them are experiencing a decline in the average per capita share of safe water, either because of the high population increase or because of overconsumption, waste, pollution, and sometimes because of all these factors combined.

- **Risks and threats of climate change and the geographical reality of the Arab world:**

An additional threat to water security comes from climate change: the world is experiencing unprecedented warming, and temperatures are now above average. Climate change has affected water resources worldwide It led to an annual average sea level increase during the second half of the ٢٠th century, caused widespread retreat of non-polar glaciers, reduced water flow in the dry season, and increased lake and sea temperatures. Solar energy trapped in the atmosphere by greenhouse gases directs the hydrological cycle, and any increase will lead to a marked intensification of the cycle, changing rainfall patterns and exacerbating extreme events, such as droughts and floods. The effects of climate change on water security can currently be seen.

Globally, land area classified by the Intergovernmental Panel on Climate Change (IPCC) as "very dry" has more than doubled since the seventies. This has been accompanied by greater flooding rates in mid- to upper-latitudes, and longer and more frequent droughts in parts of Asia and Africa, all of which have combined to alter the balance between Water resources and demand. Water security in the Arab world is particularly vulnerable to the effects of climate change, as the scarcity, limited and irregular distribution of water is a natural consequence of the geographical reality of the Arab world, as most of its lands are located in arid and semi-arid areas. He punished drought cycles on most of its lands, preferring that the instability of climatic conditions, rainfall and the loss of a large amount of rainwater due to evaporation contributed to the increase in desertification areas and increased water scarcity and crisis. Because their location means that these countries are feeling the brunt of climate change, their low incomes and weak institutional

capacities limit their ability to adapt to changing water supplies, and they rely heavily on productive water-based activities, such as agriculture. In Africa, rising temperatures, increased evaporation, and reduced rainfall have combined to reduce water flow in the number of major rivers, and in frequent droughts in the Horn of Africa.

It is difficult to predict what the future effects of climate change will be and the biggest problem in assessing the future impacts of climate change on water security is the uncertainty of the validity of the projections. This uncertainty arises from internal variability in the climate system, uncertainty about future emissions and development scenarios, uncertainties about how models translate these emissions into climate change, and questions about the accuracy of hydrological models.

- **Population increase:**

The water crisis is increasing in response to the increasing growth of the population of the Arab world. The increasing population growth and the accompanying economic and social changes lead to an increase in the demand for water and exacerbate the crisis, as the per capita share of water decreases in addition to the increase in demand for water. This results in problems in economic structures and the depletion of fresh water. and the accompanying health and environmental problems.

- **Lack of information on some water resources:**

The information available for water resources in the Arab countries is still inaccurate due to the lack of permanent measurements on seasonal riverbeds and valleys, and their lack of monitoring stations to identify evaporation and leakage. This requires further study and measurements to know the properties of water, its exploitation and overcoming the excessive uses of groundwater and the resulting significant damages such as the interference of water from the sea.

- **Overindulgence and neglect in the economic aspect:**

The increasing waste in the consumption and loss of drinking water in the distribution networks leads to a rise in waste in water due to the poor quality of the pipes used and their lack of maintenance and keeping up with modern technologies by the administrative agencies and institutions concerned in searching for leakage and its continuity in water networks especially in public buildings such as schools,

government departments and sports stadiums. Because of their extreme importance in reducing neglect, as this leads to a large saving of water, and the misuse of water due to the adoption of traditional irrigation systems leads to water waste, in addition to not fully exploiting the water of rivers and making the most of it because a large proportion of it goes to the sea. What increases the neglect in the economic aspect is the farmer's lack of knowledge about the excessive use of water, the frequent leakage in open earthen canals, in addition to the shortcomings in the planning and management of irrigation projects and the application of agricultural rotations, where the focus is on growing crops that consume large amounts of water and achieve a low return from production. In conclusion, agricultural extension must be followed to reduce waste of water in the agricultural sector, use advanced technologies to determine irrigation systems, increase the efficiency of water use in the agricultural sector as the largest consumer of water and develop available alternatives.

- **Occurrence of surface water sources in non-Arab countries:**

This factor was related to the geographical and geological situation of the region, where the headwaters of the Tigris and Euphrates rivers are located in Türkiye and (the Nile, Juba and Shabelle) in Ethiopia, which made a huge amount of surface water subject to the control of Türkiye and Ethiopia and their use of water as a political and economic tool against the interests of Arab countries with shores, making the Arab development plans vulnerable to their threats. Türkiye and Ethiopia took advantage of the political differences between Iraq, Syria, Egypt and Sudan regarding the political events in the Arab region during the past three decades to impose their complete control over the water. The water deficit was a motive for the Zionist entity's insistence on confiscating Arab water. The Zionist doctrine is based on (whoever controls the land controls the water).

Human Rights Effects of Water Shortages:

- **Increased and unsustainable household expenditures:**

At the simplest level, limited access to fresh water resources in the home in terms of the share of household income affects the provision of water, and the costs and time required to collect water, especially for women. The results highlighted that North Africa and West Asia, which includes a large number of Arab countries, accounts

for the second highest rates of population expenditure of household expenditures on water services, sanitation and hygiene. The most vulnerable communities, which are often not connected to water and sanitation systems, incur much higher costs for water services than other communities that are in use. Inadequate water supplies and sanitation systems are taking a significant economic toll on the MENA region's annual GDP, and the highest proportion of conflict-affected countries.

Water service providers are also under increasing pressure to meet the needs of growing cities and informal settlements, including a large number of forcibly displaced persons (refugees and internally displaced persons) in the Arab region. The influx of displaced communities is exacerbating the pressure on water and sanitation services, but IDPs often do not have means by which they can pay for these services to meet their basic water, sanitation and hygiene needs.

- **Increased public health costs:**

The costs incurred by households in accessing fresh water resources are linked to the public health and related economic costs of water scarcity, and the COVID-١٩ pandemic has brought these costs to the fore. Unless fresh water resources are available with sufficient supplies to secure water, sanitation and hygiene services for the population, this will lead to severe health consequences that will extend to the costs of the health care system and loss of productivity due to the poor health conditions of the labor force. In addition, a large number of the population in the Arab region lives without basic sanitation services, and does not have access to basic hand-washing services. As for the death rate due to unsafe water and sanitation services, it is high in the least developed countries in the region, as is the case in Somalia and Comoros, and data from UNESCO indicates that out of two million work-related deaths annually, one in five deaths occurs due to poor water, sanitation and hygiene services. It is important to highlight the disproportionate impact that poor water and sanitation services have on women, especially since poor hygiene in the six weeks postpartum is the leading cause of maternal mortality globally.

- **Labor market productivity and job losses:**

The productivity costs of poor-quality water and sanitation systems, and the associated costs to public health, are well known. In addition, the production costs resulting from water-borne diseases take a large proportion of the gross domestic

product in the countries of the Arab region. Besides the potential costs to labour productivity, many jobs rely on water as a production factor, which means that supply shortages can lead to a decline in the labour market. According to a report issued by the United Nations Environment Program in ٢٠١٦, three out of every four jobs in the global labour market depend, either moderately or significantly, on water. According to estimates based on data from the International Labour Organization (ILO), ٤٠ million jobs in the Arab region are highly dependent on water. This includes jobs in agriculture, fisheries, aquaculture, mining, resource extraction, water supply and sanitation, and most types of power generation. Moreover, ٤٦ million jobs are moderately dependent on water, including construction, recreation, transportation, manufacturing/conversion industries, such as wood, paper, rubber, plastics and metals. These economic sectors are important sources of job growth in the MENA labor market; agriculture, forestry, and fisheries are examples of this, in contrast to global trends in labor market contraction in these areas.

- **Increasing costs of providing water services:**

Water scarcity increases operation and maintenance costs for water service providers. For example, groundwater depletion increases the costs of pumping water vertically and horizontally into the network. An analysis of the water sector in the GCC countries concluded that these countries, while relatively well dealing with water scarcity issues, the costly infrastructure built to meet the challenge is being tested by factors such as population growth, changes in consumption patterns, and deficiencies in water delivery, all exacerbated by the indirect effects of climate change. GCC countries have invested heavily in basic water infrastructure, such as desalination operations. With demand rising and dwindling supplies, GCC countries may have to invest in increasing desalination capacity which can be very expensive in terms of the energy needed to operate desalination plants and the associated costs of oil and gas consumption.

Other countries in the region face similar challenges with regard to scarcity of water supply and increased costs of services arising from the need to invest in costly water supply infrastructure. Egypt recently announced new tenders for the private sector to build ١٧ desalination plants that will double the country's desalination capacity four times in the next five years.

- **Effects on energy sources:**

The use of hydropower has not developed sufficiently in most Arab countries. According to the International Renewable Energy Agency (IRENA), in ٢٠١٥ the share of renewable sources in the total electricity generation capacity in the region did not exceed ٦٪, and ٤,٧٪ of this total came from hydroelectric power. However, the shift in focus towards the development of renewable sources of energy increases the importance of dialogue on the impact of water scarcity on hydropower in the region.

A ٢٠١٧ World Resources Institute report documented the tangible effects of water scarcity on hydroelectric power generation around the world. In ٢٠١٦ in Brazil, drought slowed electricity generation from the Itaipu Dam, forcing the country to revert to costly thermoelectric sources. Also in ٢٠١٦, reduced water supplies caused the electricity-generating capacity of the Hoover Bridge in Nevada to drop by ٣٠٪. Reduced hydropower generation may have multiplier effects on households and sectors that depend on electricity supply, and may require, as in the case of Brazil, replacing hydroelectric power with more expensive and less environmentally sustainable options, causing additional economic costs.

- **Impact on other industrial sectors:**

The threat of water scarcity is no longer confined to the energy and agriculture sectors, but has become an important topic for various industry leaders who consider climate change adaptation in the present and near future. Water is the most important challenge facing the consumer staple food industries. It is estimated that water scarcity may affect the profits of major manufacturers of consumer products. The cost of managing water scarcity to produce consumer staples is not easy. A ٢٠٢٠ McKinsey report said two-thirds of the world's companies were at "significant risk" from water scarcity, which could directly affect operations or value chains. According to a report by the Valuing Water Initiative, Corobi, a Brazilian sugarcane trading company, was downgraded in ٢٠١٩ when drought affected the company's processing of crops.

– **Impacts on ecosystems and congestion of logistics systems:**

When drought hit Germany in ٢٠١٨, water levels in the Rhine dropped so low that navigation was impossible in some areas, disrupting supply chains and in some cases even making shipping impossible. The drought had an economic impact on Germany

as a whole, and some argue that it was one of the reasons for the country's economic recession in ٢٠١٨. Extreme weather events are frequent, in part because of changes in the surrounding ecosystems, which means more disruptions in global supply chains, which increases the cost to producers, limits the availability of products and raises their prices for consumers.

In a related framework, related impacts, such as land degradation and desertification, are an important concern. Land degradation refers to the process where land loses its productive capacity due to environmental damage or overuse, and may also lead to water erosion surface of the topsoil by. A report by the United Nations Convention to Combat Desertification that land degradation is increasing, with severe economic impacts on low-income households in rural areas, and reports that ٨٠٪ of the world's extreme poor people live in rural areas that are likely to be affected by land degradation, affecting key economic sectors in those areas, such as agriculture.

- **Competition for water resources and the potential for escalation of international conflicts and civil wars:**

The scarcity of potable water portends the emergence of a new wave of future global conflicts, through which the countries of the world will seek to occupy the world's available water reservoirs. According to some experts, "blue gold" in the twenty-first century will replace "black gold", i.e., oil, and since the world has witnessed fierce wars on oil, it is now likely to witness another round of wars over water.

Water shortages around the world are also leading to civil wars, with many citing the current civil war in Syria, where between ٢٠٠٧ and ٢٠١٠ Syria was hit by one of the worst droughts in history, severely damaging farming communities and driving hundreds of thousands from farmland to Syrian cities, where they suffered marginalization and exclusion. Water shortages are also being linked to the formation of Boko Haram in Nigeria and al-Shabaab in Somalia. With the lack of natural resources, the degradation of agricultural land, and the scarcity of water, these young people have narrowed their livelihoods, and have become an easy target for extremist groups.

In Syria, for example, a history-changing drought has displaced many to cities, food prices have increased, and tensions have already escalated, leading to the emergence of so-called climate refugees, who move to other countries in search of places where

water is available, and this factor may have led to an escalation of political tension in the country.

The South African newspaper "Mail and Garden" considered that the wars of the ٢١st century will not be military, but will be about water, and stressed that the evidence of this is the differences in the Nile Basin countries over the water shares allocated to each of the basin countries. We are currently seeing the increasing demand for water, whether for agriculture or drinking, which has raised tension The newspaper added: "In Africa, we find differences between the Nile Basin countries Egypt, Sudan, Rwanda, Tanzania, Burundi, Kenya, Uganda, the Democratic Republic of the Congo and Ethiopia, and there is tension between Botswana, Mozambique, Zambia and Zimbabwe over a tributary of the Zambezi River. The newspaper stated that the dispute between Argentina and Uruguay over the River Plate has reached the International Court of Justice in The Hague, while Mexico and the United States are arguing over the Rio Grande and Colorado rivers. According to informed sources, there are more than ٢٥٠ international shared rivers covering nearly half of the land area on Earth, as well as countless shared aquifers. About ٣٠٠ potential conflicts have been identified around the world, and are expected to develop into armed conflict.

Reports published on the occasion of World Water Day have confirmed that many water-related friendly border incidents may turn into open wars due to the growing shortage of this vital natural wealth. These conflicts are fueled by border or transboundary rivers, as well as common underground wells that countries refuse to share. The most recent example of this in history is the Israeli-Lebanese dispute over the Hasbani River, which originates in Lebanon and flows into the Jordan River. The Hebrew state accuses Beirut of diverting its course.

A French ministerial report pointed out that ١٥٪ of countries receive more than ٥٠٪ of their water from other countries, and two out of three out of the major rivers or underground rivers. More than ٣٠٠ in the world are shared among several countries. International consultancy PricewaterhouseCoopers said the conflicts would intensify due to water shortages, which is expected to affect nearly two-thirds of the world's population in ٢٠٥٠. The region most under threat is the Middle East. In this regard, the foundation writes that the water consumed in Israel comes from the occupied

territories and about half of Israeli financial facilities are located in areas that were not within the ١٩٦٧ borders of the Jewish state.

From the perspective of the oldest and largest schools in the analysis of international relations, the classical realists emphasized the existence of a relationship between the scarcity of water resources and the conflict. Many thinkers talked about this, for example: Malin Falkenmark and Wade Strand, consider the water dilemma one of the causes of many wars.

"The issue of water represents a factor in the present and future conflict, and that water can be a factor with a great influence in armed conflicts." Based on this same vision, the interest of political studies in the twentieth century increased in the issue of water, as the issue of water became one of the topics of military operations. It is a means of war and a prominent factor in international politics, and it has an important role in internal and international stability.

Therefore, the realistic perception of the water issue is based on:

- Water scarcity inevitably creates conflict.
- Water scarcity is an issue of military operations.
- Water scarcity is the most important issue affecting national security.
- The equation of water relations is always zero because of the conflicting interests of the parties.

To clarify the ideas of realists more, their authors resort to a similar analogy between water and oil and their relationship to national security. We find that Kayumalek Donald had predicted that the oil crisis of the seventies would move to the water crisis of the eighties and nineties. Biswas also considered that water scarcity will become the most serious problem globally at the end of the nineties, likening it to what happened in the seventies with oil, and these researchers link the second Gulf War to oil, and this is what can be projected on water wars in the future, as indicated by Sandra Boscal by saying, "Water has become a strategic resource, like oil, for which countries seek in various ways to obtain it. Water has become very dangerous for international relations, surpassing even oil, for which alternatives can be found, but without water, life is impossible.

This standard comparison between water and oil can be summed up in the words of Ismail Serag El-din, former vice president of the World Bank: "Many wars in the twentieth century were for oil, but the wars of the next century will be about water."

Although realists have been at least partially correct in analyzing the water issue, especially in considering the latter as a cause and an important factor in many wars, what is wrong with them is that they focused on one variable, which is power, while this factor alone cannot be a tool for analyzing all complex phenomena in international politics, as is the case in the study of environmental problems that have a complex and intertwined nature, and this is what some thinkers of neo-realism tried to pay attention to, led by the thinker Charles Glaser, who emphasizes that there are many issues in relations between states that require cooperation, through which adversaries can achieve their security goals. These include transboundary problems such as pollution and water security.

In the end we come to the need for international cooperation to improve security. And by comparing the classical realistic trend with the modern realistic trend, we come to the possibility of turning water problems into a collaborative rather than a combative issue.

- **Declining agricultural yields and food security problems:**

In the Arab region, the agriculture sector consumes huge amounts of water withdrawal, as there is a close link between water and food security. Agriculture is by far the largest user of water. This makes it one of the economic sectors most affected by water scarcity, which will cause a significant decrease in crop yields. The loss of irrigated agricultural land will also lead to attempts to transfer agricultural activities to other unused lands, which may lead to deforestation and destruction of other natural habitats.

Access to adequate and secure water raises agricultural yields and increases food and incomes in irrigated areas where three quarters of the world's hungry population lives. While water is an essential component of food security, water shortages are a major cause of famine and food shortages, especially in food-insecure rural areas whose populations depend on local agriculture for food and income generation. Drought is the single most common cause of severe food shortages in developing countries. In the last three years, drought has been the cause of many food

emergencies. Even when water is generally sufficient, irregular rainfall or access to water can lead to short-term nutritional shortages and long-term food insecurity as well.

Floods are another major cause of food emergencies. Large disparities in water availability by season can also increase food insecurity. For example, in India, more than ٧٠٪ of annual rainfall falls during the three monsoon months, and most of this water is wasted to the sea, so farmers who lack irrigation facilities have to suffer from water scarcity for most of the year and are threatened with crop failure if seasonal rains fall. Many of the heavily exploited river basins in major food-producing regions are now operating to the limit of their resource base. This is a worrying indicator of what is to come, especially in light of the dependence of the urban population on agricultural production, and the high percentage of the population who depend on agriculture and related activities for their livelihoods. This is more than two-thirds in Sub-Saharan Africa. Globally, agriculture consumes about ٧٠٪ of the water extracted, while in Sub-Saharan Africa it is ٨٧٪. The rapidly expanding demand for water from urban areas increases pressure on the quality and quantity of local water resources. In addition, there is an increasing need for water for environmental purposes, including the refilling of swamps. Water management is essential to maintaining the stability of global food production, because reliable access to water increases agricultural yields, providing a stable supply for many key agricultural products and higher incomes in rural areas that are home to three-quarters of the world's hungry population. Without sustainable water management in river basin areas, lakes and related aquifers, food security at the local, national and global levels will be at risk, and drought is the biggest natural cause of severe food shortages in developing countries. Flooding is another major cause of food emergencies. Therefore, the more climate change increases the variability of precipitation and the frequency of severe weather events, the more it impedes food security.

Changes in water precipitation, soil evaporation and transpiration (water vapor released by plants) are also expected to reduce runoff by ٢٠٦٠ in some parts of the world such as the Near East, Central America, northern Brazil, the western edge of the Sahara and southern Africa. In contrast, runoff will increase in Northern Europe, Northern China, East Africa and India, which is necessary to refill rivers and lakes with water, so it is essential for irrigation and maintenance of ecosystem services.

The hardest hit sectors will be rain-fed agriculture, which covers most of the cultivated land in Sub-Saharan Africa, South America and Asia, where the risk of crop failure will increase in peripheral semi-arid areas with long dry seasons. Residents of areas where production stability cannot be ensured will therefore be forced to migrate. The amount of land that will be unsuitable for rain-fed agriculture in Sub-Saharan Africa will increase due to severe climate or soil constraints or terrain by ٢٠٨٠. Irrigation in river basins and large delta areas will also be at risk due to reduced salinity-associated runoff (the Indus River), increased flooding and sea level rise (Nile, Ganges-Brahmaputra, Mekong and Yangtze River), and urban and industrial pollution. These pressures on some key productive lands will reduce agricultural yields, biodiversity and the natural ability of ecosystems to recover, potentially adversely affecting millions of farmers and consumers worldwide given the gradual constraints to food supply. However, the effects of climate change will not be equal for countries and regions.

Some countries suffer from a shortage of fresh water:

- **Iran:**

In ٢٠٢١, water-scarce Iran witnessed bloody protests that resulted in the death of ٨ demonstrators due to water shortages in the southwestern province of Khuzestan and other areas, while the country is hit by the worst drought in half a century, amid declining economic indicators due to US sanctions imposed on the regime. In addition to an electricity crisis in the country and a deterioration in the health sector due to the Corona pandemic, the lack of rain has led to problems in agricultural land irrigation water and drinking water. The water crisis has also affected families, destroyed agriculture and livestock and led to power outages that sparked protests in several cities and towns in the oil-rich Khuzestan province. Protesters were shot dead by police and Iranian security personnel who used live ammunition and birdshot in an attempt to quell the protests. The demonstrations, which began in Khuzestan, spread to other provinces, about ١٧ cities in Khuzestan province, including the city of Ahvaz, the center of the region, to protest against the water crisis that the population suffers from. Iranian media published videos of protests in which demonstrators chanted slogans against the government, others torched tires and blocked main roads. Demonstrators vented their anger at Khamenei, chanting: "Death to the dictator" and "Death to Khomeini."

Kaveh Madani, former deputy head of Iran's Environment Agency, doubted that there would be enough water for another two to three months in Khuzestan, and warned that the Karkha Dam reservoir, with a capacity of nearly ٦ billion cubic meters, was alarmingly running out. Madani said in a tweet that the water challenge in Iran is now so serious "that its effects will not go away without fundamental changes in the development model and economy," adding that change requires "political will and economic resources."

The head of the Iranian Meteorological Authority also stated that the period from October ٢٠٢٠ to mid-June ٢٠٢١ was the driest on record in the past ٥٣ years.

Political scientists and hydrologists believe that drought is historically constant, due to longer dry seasons, high temperatures and low levels of rainfall, but political mismanagement and government corruption are the main causes of drought in Iran, noting that the regime attaches importance to dam construction "which is a short-term solution to a long-term problem," because large dams in a hot, dry country are a "waste of time" as a lot of water evaporates from reservoirs. Activists accuse the government of transporting the province's water to other provinces and building dams on rivers, causing a problem in securing water.

- **Iraq and Syria:**

Türkiye has exploited the political differences between Iraq and Syria over political events in the Arab region over the past three decades to impose its full control over water. Türkiye has refused to sign any new agreement regulating the process of benefiting from the waters of the Tigris and Euphrates River by dividing the water fairly in accordance with the provisions of international law to guarantee the rights of all parties. Türkiye was not serious about reaching a just and comprehensive solution in the waters of the Tigris and Euphrates rivers, its lack of commitment to the agreements signed between them, and its implementation of many dams and projects, the most prominent and most dangerous of which, to the water scarcity in Syria and Iraq, is the Cape project, which consists of ٢٢ dams, including ١٧ on the Euphrates River and ٥ projects on the Tigris River. The motives of the water crisis between Türkiye, Iraq and Syria are of political dimensions to strengthen its position in Middle Eastern arrangements, and to use water as a pressure card with the support of the United States and the Zionist entity, technically and financially, in the construction of dams and reservoirs. Türkiye claims that building dams is

economically motivated to provide water and electric power for its development projects, but it is the opposite, as it reduced the annual flow of Euphrates and Tigris water. Iraq and Syria lost a lot of water, in addition to Türkiye's failure to respond to Iraq's request to increase the flow of Euphrates water under the agreement signed in ١٩٨٧. This led to the deterioration of agricultural production due to the reduction of cultivated areas and electric power, and the exposure of the two rivers to pollution and its negative effects on the environment and groundwater.

For its strategic interests, Türkiye has legitimized many concepts for itself to strip Iraq and Syria of their right to water, including considering the Tigris and Euphrates basin as one basin rather than two basins. Its non-recognition of the international character of the two rivers, in addition to the concept of transboundary waters, its right to absolute sovereignty over the waters of the Euphrates and the Tigris, the concept of optimal use of water on the basis that the two rivers spring from its lands, and water is a wealth for Turkey and not a common wealth, and it has the right to dispose of this wealth. A five-stage plan was presented to solve the problem of sharing the waters of the two rivers and put forward the exchange of water for oil and find a price for water in order to strip the Arabs of their sources of strength and to make oil a hostage to water and to impose its presence as a power in the region.

It is both funny and disturbing to recall the former Turkish President Süleyman Demirel's statement a decade ago that "neither Syria nor Iraq has the right to claim a share of Turkish rivers, nor does Türkiye have the right to claim a share of the oil of Syria and Iraq... We have the right to do whatever we want, the sources of water are ours, and the sources of oil are theirs. We don't want to share the oil wealth with them, and they don't have the right to share the water wealth with us." If Demirel is right about oil rights, he is wrong to compare it to water, where waterways are shared by all the inhabitants along their route, not just upstream people. If Demirel's theory were applied, most of the world's population would be thirsty.

- **Lebanon:**

Lebanon, located on the Mediterranean Sea and rich in mountains, forests, lakes and streams, is the latest country to deal with a water crisis, as UNICEF has warned that Lebanon's water supply network is on the verge of total collapse. If Lebanon's public water supply system collapses, UNICEF estimates that water costs could rise by

٢٠٠٪ per month, and families will be forced to turn to alternative sources or private suppliers.

Experts believe that the water crisis in Lebanon is a man-made problem, represented by the country's economic collapse, which is among the worst in the world in the past ١٥٠ years, as it has led a country to bankruptcy to the extent that parts of the country do not have electricity, according to the World Bank. The country's economic crisis has also resulted in high water-related costs for households. UNICEF has warned that the dollar cost of maintaining the water sector and the inadequacy of the electricity network as a result of high fuel supply costs could lead to the collapse of the public water supply network. If this happens, UNICEF estimates that the cost of water from the private sector will be equivalent to ٢٦٣٪ of average monthly income, putting it beyond the reach of most Lebanese households.

Adding to the pressure on Lebanon's water system are a lack of funding to repair Lebanon's crumbling infrastructure and a lack of basic supplies such as chlorine and spare parts.

Electricity plays a major role in delivering water to homes at the national level. In practice, electricity is needed to pump water from its source to the water treatment plants, and then to start the treatment process; and later to pump it into the reservoirs, which is what the residents of Lebanon are aware of; When the power goes out, the pumps stop working, which prevents water from reaching their homes, which makes them partially resort to private generators to pump water into the tanks. There is also a need for electricity to treat wastewater. According to a recent study by the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut, the lack of electricity is the main reason why many sewage treatment plants in Lebanon are not operational. It is customary to dispose of untreated stale wastewater in rivers and groundwater, which causes pollution, and thus raises the cost of using it for household needs.

UNICEF said: “More than four million Lebanese could face severe water shortages or be cut off completely within days, due to the severe fuel crisis.”

Vital facilities such as hospitals and health centres are deprived of safe drinking water due to lack of electricity, putting lives at risk. “If four million people are forced to resort to unsafe and expensive sources of water, it will put health and hygiene at

risk, and Lebanon could see an increase in waterborne diseases, as well as an increase in the number of COVID-١٩ cases."

- **Egypt:**

Since ancient times, Egypt has relied on the Nile for water, transportation and food, but Ethiopia's construction of the Grand Renaissance Dam has angered Egypt, which is pressuring Ethiopia not to take more than its fair share of water. The danger is that the more Ethiopia, Sudan and South Sudan use water, the less water reaches Egyptians who rely heavily on river water for drinking and agriculture, threatening life in Egypt. However, Ethiopia does not care about the serious damage caused to its partners in the Nile waters for its benefit and the infringement of their fair share of the water.

Ethiopia has exploited the political differences between Egypt and Sudan towards political events in the Arab region during the past three years to impose its full control over the water. Ethiopia has refused to sign any new agreement regulating the process of benefiting from the waters of the Nile River by dividing the water fairly in accordance with the provisions of international law to guarantee the rights of all parties. As Ethiopia's water revenues represent (٨٥٪) of the total Nile River, the Blue Nile, Atbara, Sobat, and a source of the Juba and Shabelle rivers in Somalia, it adopted the same water policy adopted by Türkiye by refusing to recognize the agreements signed between it and Egypt and Sudan before its independence, which guarantee the rights of the basin countries according to international laws. These agreements were considered non-binding by them. It also implemented projects on the Blue Nile River, Al-Sobat and Atbara to achieve their economic, increase their control of the water coming to Egypt and Sudan, and their control of water in the region politically with the support of the United States of America and the Zionist entity and the adoption of Ethiopia as a water pressure card towards the countries of the region.

From a legal point of view, Egypt has a right, and the Ethiopian opinion on sovereignty over the waters of the Nile is baseless in accordance with the provisions of the Convention on the Law of Non-Navigational Uses of International

Watercourses,, which was adopted by the United Nations General Assembly in ١٩٩٧ and entered into force in August ٢٠١٤, which recognized the principles of fair and equitable use of water resources between states, and international responsibility arising from the actions of a state that would harm other countries. Most likely because of this, Ethiopia has not acceded to this agreement. Nile Basin countries are holding talks to resolve the water problem peacefully, but if those discussions fail, the possibility of a water-motivated war remains strong.

- **Somalia:**

Somalia is one of the poorest countries, and its economic situation is still fragile and modest compared to its potential to occupy a much better economic position than it is now.

Somalia is rich in enormous wealth, and has an estimated livestock of ٤٠ million camels, cows and sheep, as well as agricultural wealth, with an estimated arable land of ٨ million hectares, making Somalia a food basket for the countries of the region. With ٦٠٪ of Somalia's ١٥ million people living in rural areas and working in livestock and agriculture, the two sectors have been vulnerable to calamities and crises since ٢٠١١ due to recurrent droughts and the war between government forces and al-Shabaab, which has displaced about ٢,٩ million people who used to be pastoralists and farmers, exposing the country to food crises.

According to the latest report of the UN Office for the Coordination of Humanitarian Affairs, ٥ million Somalis (a third of the population) are in need of humanitarian assistance, in addition to the poor management, lack of resources, and the use of traditional methods and old methods of livestock and agriculture, which made it difficult to exploit these two sectors in a way that improves the situation of the population and the country's economy.

On the other hand, Somalia has the second longest coast in Africa and has various types of fish and marine animals. If exploited well, this would contribute to improving the economic situation in the country. However, Somali fishermen lack ships, fishing boats, advanced fishing capabilities and modern tools. They fish with traditional boats, boats, machinery and fishing nets, so their returns hardly cover the local market at best.

- **Yemen:**

Yemen faced a serious crisis as a result of water scarcity, which reflected on the lives of citizens and their health and living conditions, increasing their daily suffering, especially with the high cost of water and its price in some areas, reaching record numbers.

In the city of Aden, citizens complain that water is cut off from their homes, with its prices doubling due to the rise in fuel, a situation shared by Yemen's water-poor cities. More than two-thirds of Yemenis living in extreme poverty are reportedly unable to afford the exorbitant water costs, which is reflected in all aspects of their lives.

The risks of contaminated water are increasing, in light of the spread of epidemics, including cholera, which has spread in most Yemeni cities and caused the death and injury of thousands during the last two years. For example, the health center in the district of "Milhan", Hajjah governorate, recorded ٥٠ suspected cases of cholera in a village. An official in the health office reported that the contamination of drinking water in addition to almost non-existent sanitation, is the top reason behind the tragedy of the spread of the epidemic.

In the city as well as in the countryside, most families suffer in varying proportions from the challenges of providing clean water, especially in light of the crisis that the country has been experiencing for years, and with which millions of Yemenis have lost their sources of income. In most cases, the water for pimary use of homes from the government water and sewage network or commercial trucks is not safe to drink. Some residents are forced to fetch it from public reservoirs that are maintained by some institutions or well-off people. The increasing cost of purchasing water from private suppliers places an even greater burden on women, as they spend hours collecting water each day. Women in rural Yemen spend one to two hours twice a day collecting water. Although water supplies by truck may be available close to home, women are forced to make long journeys to public taps because of the high cost of purchasing from private vendors. Women in the Arab region are often at risk of verbal abuse and sexual assault during water collection trips. Often, pots or containers for fetching water appear unhygienic, but it's the only way families have found themselves forced to provide water.

- **Jordan, Syria, Lebanon and Palestine suffer due to the Zionist entity's seizure of water:**

The Jordan River and its tributaries in the region are very small compared to the Nile, Tigris and Euphrates, but they have been the cause of wars and armed conflicts. The Jordan River and its tributaries, in Palestine, Jordan, Syria and Lebanon, remain under the ambitions of Israeli expansion and the needs of upstream countries. Despite the water scarcity in Jordan, four times the amount of water received by the Jordanian per capita from the Jordan River goes to the Israeli per capita. The situation is even worse in the Occupied Palestinian Territory, where Israeli settlers receive seven times as much water as Palestinians. Months before the ١٩٦٤ Arab summit, Israel built a large pumping station on the shores of the Lake Tiberias, and began withdrawing water at a rate of ٤٤٠ million cubic meters per year, depriving Jordan of a large resource and cutting off supplies from the Dead Sea, about a third of which had dried up thirty years after pumping began, turning into two shallow lakes. Recently, an Israeli-Jordanian project was proposed to draw the waters of the Red Sea into the Dead Sea, to compensate for what was lost on the one hand, and to use the water for desalination on the other hand, and to exploit the difference in altitude for energy generation. But the project was withdrawn from circulation due to political and environmental objections.

The Israeli military intervention in the mid-sixties led to the cessation of the diversion of the tributaries of the Jordan River in Syria, Jordan and Lebanon, which had begun with the aim of exploiting these countries' right to their waters, based on the decisions of the Arab Summit. Ariel Sharon later stated that "the war of June ٥, ١٩٦٧ actually began two and a half years ago, when Israel decided to prevent the diversion of the tributaries of the Jordan River." Israel threatened war last year when Lebanon exploited part of its rights in the waters of the Wazzani River. Experts believe that controlling water sources is the main problem in Israel's withdrawal from the occupied Syrian Golan Heights. According to reports by the Israeli Ministry of Agriculture, "there is no political solution if it does not guarantee Israel full and continuous control over water systems." With the exception of Türkiye, Iraq and Sudan, the countries of the region will suffer serious water scarcity within a quarter of a century. Beyond the expansionist ambitions and arrogance of occupation, integrated water resources management remains the inevitable solution. This means developing water resources in order to provide usable quantity, in addition to rationalizing the use of water to reduce waste in storage, transportation, irrigation, domestic and industrial uses.

The water deficit was a motive for the Zionist entity's adherence to the confiscation of Arab water, as the Zionist doctrine is based on "whoever controls the land controls the water." Before and after the occupation of Palestine in ١٩٤٨, its projects were represented in investing in water in Palestine and Arab areas by implementing many irrigation and electric power projects. In ١٩٦٧, the Zionist entity occupied the remainder of Palestine to control the underground water basins in the West Bank and Gaza sectors, the Yarmouk River Basin and the Golan Heights. The percentage of controlled water constitutes ٦٧٪ of the consumption of the Zionist entity. In the years (١٩٧٨-١٩٨٢), it occupied southern Lebanon to control the Litani River, Al-Wazzan and Hasbani, where the Lebanese water constituted (٢٥٪) of the total water of occupied territory in ١٩٦٧ (٤٠٪) of groundwater in the West Bank and Gaza. The Zionist entity has exercised its arbitrary authority as an occupying power in determining the withdrawal of groundwater and preventing the Arabs from drilling any well without a license from it, and that the depth of the well does not exceed (١٤٠ m) and the amount allowed to be used from each well is ٦٠-١٠٠ m per year, while the wells drilled by the Zionist entity at a depth of (٨٠٠ m) and the water of the Jordan River constitutes (٤٠٪) of its needs.

International and Egyptian efforts to address water shortages:

United Nations:

- One of the most important milestones recently was the recognition by the UN GA of the human right to obtain adequate water for personal and domestic use (between ٥٠ and ١٠٠ liters per person per day), provided that such water is safe and affordable (the cost of water should not exceed ٣٪ of the total household income), and that it is available in a place (not more than ١,٠٠٠ meters from the house) and time (not more than ٣٠ minutes to obtain).
- SDG٦ is intended to "ensure access to water and sanitation for all". The targets of this goal encompass all aspects of health water recycling systems. Achieving these targets will contribute to progress on a range of other SDGs, including those related to health, education, economy and environment.
- The UN has long been addressing the global crisis caused by the growing demand for water resources in the world to meet humanitarian, commercial and agricultural needs, as well as the need for basic sanitation services.

- The UN Water Conference (١٩٧٧), the International Drinking Water Decade (١٩٨١-١٩٩٠), the International Conference on Water and the Environment (١٩٩٢) and the Earth Summit (١٩٩٢) focused on this vital resource.
- The International Decade for Action, Water for Life, ٢٠٠٥-٢٠١٥ has helped about ١,٣ billion people in developing countries have access to safe drinking water and advanced sanitation in efforts to achieve the Millennium Development Goals.
- Recent milestones include the ٢٠٣٠ Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction ٢٠١٥-٢٠٣٠, the Addis Ababa Action Agenda of the Third International Conference on Financing for Development, and the Paris Agreement of the United Nations Framework Convention on Climate Change.

- **Water, Sanitation and Hygiene:**

Contaminated water and lack of basic sanitation are undermining efforts to end extreme poverty and disease in the world's poorest countries.

There are currently ٢,٣ billion people in the world who do not have sanitation facilities such as toilets. According to the WHO/UNICEF Joint Monitoring Program for Water and Sanitation, it is estimated that at least ١,٨ billion people drink water that is not protected from feces. More are drinking water that reaches them through systems that lack adequate protection against health risks.

- **Unclean water and child mortality:**

Unclean water and poor sanitation are the leading cause of child mortality. Children's diarrhea is closely associated with inadequate water supplies, inadequate sanitation facilities, water contaminated with infectious diseases, and poor hygiene practices. Diarrhea is estimated to cause the death of ١,٥ million children each year, mostly children under the age of five living in developing countries.

- **Improved sanitation and economic benefits**

The links between lack of access to water and sanitation and development goals are clear, and solutions to the problem are known and cost-effective. A ٢٠١٢ WHO study showed that every U.S. dollar invested in improving sanitation translates into

an average global economic return of US$٥,٥. These benefits are experienced specifically by poor children and in the underserved communities who need them most.

Celebrating Water Resources:

Every year, two international UN events related to water and sanitation are celebrated: World Water Day (March ٢٢) and World Toilet Day (November ١٩). Each day has an awareness campaign to raise global awareness of related issues and draw attention to the theme of the occasion to inspire action.

The International Decade for Action, "Water for Sustainable Development", began on World Water Day, ٢٢ March ٢٠١٨, and will end on World Water Day, ٢٢ March ٢٠٢٨. The International Decade is intended to stimulate accelerated efforts to address water-related challenges, including limited access to safe water and sanitation, increased pressure on water resources and ecosystems, and increased risk of drought and flooding.

The International Committee:

Water is at the heart of the International Committee's concerns. The needs are enormous and the stakes are palpable: demand for water is expected to increase by ٣٠ percent by ٢٠٥٠.

In ٢٠٢١, the International Committee addressed the urgent water needs of more than ٣٧ million people by supporting water and sanitation institutions in areas affected by protracted armed conflict and the effects of climate change.

UNICEF:

UNICEF works in more than ١٠٠ countries to help provide access to clean water and reliable sanitation, and to promote basic hygiene practices in rural and urban areas, including in emergency settings. UNICEF is working to provide clean water, basic hygiene and sanitation facilities to homes, schools and health centres so that children can grow and learn in safe environments. For example, in ٢٠١٨, they contributed to the provision of safe drinking water to more than ٤٣ million people living in humanitarian crises in ٦٤ countries. They achieve better water, sanitation and hygiene outcomes for children by:

١. **-Empowering local communities**

UNICEF promotes the practice of hand-washing in communities through various media and campaigns such as World Handwashing Day, which reaches hundreds of millions of people annually. They have adopted a people-centered approach, enabling them to help entire communities eliminate the practice of open defecation that causes health risks, and in ٢٠١٩ many communities achieved open defecation-free society status.

٢. **-Supporting schools**

They work directly with schools and healthcare facilities to improve access to basic water, sanitation and handwashing facilities, and to establish specific measures to prevent and control the spread of disease. They support menstrual health and hygiene in schools by establishing safe and private sanitation and washing facilities, as well as facilities for the disposal of menstrual materials. They also provide education and support services that help more girls manage their menstrual cycles.

٣. **-Humanitarian action**

Much of their work takes place in fragile and emergency situations, to help prepare for and respond to humanitarian emergencies. This includes transporting water, ensuring its purification, and establishing latrines in refugee camps and temporary shelters. They are working to establish water and sanitation facilities that remain in place after the end of the emergency, while providing clear leadership and accountability during humanitarian responses.

International Human Rights Law:

Although water is not explicitly recognized as an independent human right in international treaties, international human rights law entails 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 for personal and domestic uses, which is intended for the use of water for drinking and personal health, laundry, food preparation and personal and household hygiene. These obligations also require states to gradually ensure access to adequate sanitation, which is essential to human dignity and privacy, while also protecting the quality of drinking water supplies and resources.

The concept of basic water needs to meet basic human needs was first introduced at the United Nations Water Conference in Mar del Plata, Argentina. The Plan of

Action of the Conference affirmed that all peoples have the right to drinking water quantities and quality equal to their basic needs, regardless of their stage of development and their social and economic conditions. This was confirmed by Agenda ٢١, adopted at the UN Conference on Environment and Development in ١٩٩٢. A number of other action plans subsequently referred to safe drinking water and sanitation as human rights. In the Program of Action of the ١٩٩٤ 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. The Habitat Agenda adopted by the United Nations Conference on Human Settlements (Habitat II) in ١٩٩٦, also recognized water and sanitation as part of the right to an adequate standard of living.

Regional declarations also recognize the right to water. The Council of Europe has affirmed that everyone has the right to adequate water to meet their basic needs. In ٢٠٠٧, Asia-Pacific leaders agreed to recognize the right of people to clean drinking water and basic sanitation as a fundamental human right and a fundamental aspect of human security. In the Abuja Declaration, adopted at the first African-South American Summit in ٢٠٠٦, the Heads of State and Government declared that they would promote the right of their citizens to enjoy access to clean and safe water and sanitation within their respective mandates. Although not legally binding, these declarations reflect a consensus and political statement of intent on the importance of recognizing and fulfilling the right to water.

In ٢٠٠٢, the Committee on Economic, Social and Cultural Rights adopted its general comment No. ١٥ on the right to water, defined as the right of everyone to have access to an adequate, safe, acceptable, physically accessible and financially affordable amount of water for personal and domestic purposes. Although the International Covenant on Economic, Social and Cultural Rights does not explicitly refer to the right to water, the Committee has affirmed that the right to water is part of the right to an adequate standard of living, as are the rights to food, housing and adequate clothing.

Article ١١, paragraph ١, of the Covenant sets out a number of rights arising from the realization of the right to an adequate standard of living, which are indispensable for the realization of this right, “including adequate food, clothing and housing." The

use of the phrase". The word "including" indicates that this list of rights is not intended to be exhaustive. Of course, the right to water falls within the category of basic guarantees for an adequate standard of living, given that it is one of the most basic conditions for survival.

Recommendations:

- Transition to modern irrigation systems to save water wasted in traditional irrigation systems. This requires a plan to commit farmers to modern irrigation systems, while providing the necessary financing for the establishment of such networks.
- Coordination of water policies with population and environmental policies in every Arab country, developing structures related to benefiting from rainwater to limit water and benefit from it without wasting it or leaking into the sea, while taking into account the environmental aspect in achieving this.
- Desalination of seawater, raising its efficiency, reducing its costs, and paying attention to scientific research to develop water desalination as one of the ways to face water scarcity.
- Take care of the technology needed for the desalination process by localizing, developing and producing this technology locally and adapting it to be economical when implemented.
- Development of legislation and regulations, forming control bodies over the use of groundwater, monitoring the drilling of wells and the quantities of water pumped from them and that some Arab countries are not over-withdrawing it, to fill the deficit in surface water, protect it from pollution and preserve the reserves of it without running out.
- Development of a water strategy by the competent institutions in the Arab countries to determine the policies and procedures to achieve water development, adopting it among the priorities and programs to confront the negative effects resulting from the limited water.
- The need to increase investments in the water sector to renew and expand distribution and transportation networks, preserve water from wastage, waste and pollution, and raise awareness about water use through the media.
- The importance of improving the management of water institutions through the development of human resources, of education structures and training

systems, and the improvement of management methods, institutional structure, and legislative systems.

- The restriction of water management to a central authority to avoid the occurrence of subsequent problems that happens whin distributing it to multiple parties, making it difficult to coordinate, especially with regard to planning and an integrated view. Water, environment and sanitation are indivisible if we take into consideration ensuring the sustainability of water resources.

Conclusion

The world's freshwater resources are threatened by high demand from multiple sides and a growing population needs water for drinking water, hygiene, sanitation, food production and industry. At present, climate change is now expected to contribute to increased droughts. It is essential that decision-makers find a way to save water, without degrading the natural ecosystems that provide it. Simple technical methods can also be used to help prevent water scarcity, and there are many ways to increase supplies, such as improved water desalination. Governments must immediately initiate policies and secure investments in infrastructure in order to conserve fresh water, thus preserving human life and ensuring the provision of the basics of life for citizens, protecting their right to clean water and thus obtaining the rest of their other rights mainly related to water, such as access to food and work. The peoples of the world will also be able to live in safety and peace away from conflicts and armed conflicts caused by the scarcity of fresh water.