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Impacts of Turkey's hydropolitic on Iraq and Syria

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Abstract: Climate change in some regions has led to an intense decline in water resources, so water issues in the adoption of government policies and decisions have a special place. Therefore, the use of these resources has led to considerably tensions, especially in low rainfall regions. On the other hand, the common use of these resources can be an opportunity for the realization of the process of regional cooperation and convergence. The Middle East, with 5 percent of the world's population, has less than 1 percent of the world's water resources, and is therefore one of the most critical regions of the globe. In addition, high population growth also adds to the severity of the crisis. In this context, common water resources have great importance and countries compete for their dominance. In this regard, less region in the world than in the Middle East is prone to conflict over water resources. The major cause of these conflicts is related to common water resources. One of the most important of these common water resources is the Tigris and Euphrates rivers that originate from Turkey, which cross Syria, Iran, and ultimately ends in Iraq. The main question of the paper is that what are the impacts of Turkey's hydropolitic on Iraq and Syria?

Key Word: Hydropolitics, Border rivers, Shared Basins, GAP Project, Middle East

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I. INTRODUCTION

In the twentieth century, 153 conflicts have occurred over water resources, while since 2000 the number is 442. This rate of conflict growth shows the importance of these vital fluids in the future of international security. The freshwater resources in the world have various problems, including: unbalanced distribution of freshwater in the world as well as within countries; the common water resources of some of the world`s rivers among different countries; the dependence of the downstream countries on the river source in the upstream country; groundwater reserves of freshwater are rapidly evacuated and contaminated and salty; surface water sources are contaminated by various economic activities[1]. In the last 100 years, due to increase in the population, water consumption has increased tenfold in the world. However, one fifth of the world`s population does not have access to drinking water, and this rate is gradually increasing. The United Nations Organization named March 22 as the World Water Day and called for water shortages to be addressed and solutions to address these issues. Water scarcity in many parts of the world has been an effective means of initiating conflicts between countries. These differences can be seen all over the world, such as the dispute over the use of Jordanian River water between Palestine, Israel and Jordan; difference between Iraq and Turkey over Tigris and Euphrates water; daily conflicts between various groups in East Africa and deep disagreement between Uzbekistan, Turkmenistan, Kazakhstan, Kyrgyzstan and Tajikistan over water Amu Darya and Syr Darya. According to estimates, by 2025, more than 20 percent of the world`s population faces water scarcity, which in the first stage shows the shortage of water availability in its riparian rivers[2]. By 2050, world water consumption is projected to increase between 20% and 30%. The expansion of metropolises and population growth and economic development will increase demand for urban and industrial consumption faster than agriculture, however agriculture will remain the largest water consumption sector. By 2050, the amount of water needed for irrigation of vegetables will increase 40% on average[3]. The type of interaction between nation and local communities in exploiting common water resources encompass a wide range from adaptation and full cooperation to conflict and war. Because of increasing trend of water consumption in the upstream and downstream areas of the water resources, hydropolitical disputes between communities and peoples living near these resources are also increasing. Hence, some theorists call this century the “century of hydropolitics" and believe that most of the local, regional and global conflicts and wars[4]. Therefore, addressing common border water issues has a special sensitivity and importance, and to manage them, more than 38000 declarations and conventions and about 300 international treaties have been drafted and approved[5]. Also in the text of more than 2000 international agreements, there are also articles related to water issue[6]. Now the Middle East endures a

severe weather conditions that will intensify in the future[7]. In the future, the Middle East will experience warmer and damper weather that will affect concerns about water supply and agriculture as well. By 2050, parts of the Middle East will become so warm that it will be uninhabitable, which itself will lead to the migration of a large number of people. The water shortage issue, in the future would be the most important environmental issue in the region. Demand for drinking water will increase as much as 50% in the Middle East, due to population growth, rapid urbanization and climate change.

II. HYDROPOLITICS

In traditional approaches to security, environmental issues were marginalized. One of these approaches, that had a great influence and reflected the abstract structure of the worldview of realism, was traditional geopolitical theory. The traditional geopolitical approach is inextricably tied to the name of the Halford Mackinder, an approach which he described in "the geopolitical axis of history" published in 1904. The traditional geopolitical approach is emphasized that political supremacy is not merely power in the sense of human and material resources, but also the context of the geography of power is important. Mackinder believed that, although the geographic environment does not define decision makers' choices, but it limits them[8]. However, new generations of geopolitical theories are far from traditional approaches, and so in the new definition of hydropolitics, it has been defined as the study of the role of water in conflicts and human-community relations. In this regard, some writers have also focused on the structural dimensions of environmental and water conflicts[9]. The term "hydropolitics" in the political geography literature focuses on the position of water resources in the political-spatial relationships of power units of the sub-national, national and transnational scales. Generally, various hydropolitical approaches focus on factors such as conflict and cooperation, state actors, and presence in international watersheds. Hydropolitics is a systematic study of relations between governments, non-state actors and other elements, such as subordinate institutions, about the exclusive use of international waters. This definition emphasizes the following: investigating the interactions of state and non-state actors; Emphasis on actors and institutions inside and outside countries; trying to use the exclusive use of water; applying different sovereignty on rivers that are both national and international[10]. The mismatch of political borders with natural boundaries and river basins has caused more than 40% of the world's population today live in areas where their catchment areas are shared by two or more countries[11]. Controversy and cooperation in international watersheds and the multiple uses of border water resources make hydropolitics one of the complicated issues that countries and the international community facing at the present time. Hence, there are various goals for monitoring the water resources of the actors: Where water is low, this competition is to more control of water volume; where water is abundant, monitoring may be for water-saving purposes or flood monitoring; in some places, monitoring may pursue non-water political goals. However, whatever the motivation is, the strongest and weakest coastal states find themselves in three situations: Sharing (cooperation); paying attention to the interests of the stronger coastal state (cooperation is low and there is no competition); contest (controversy is intense) [12]. Based on the traditional hydropolitical approach, it was only the upstream of the river that was important, but in new approaches, understanding and interpreting this position is also important and situations are understood and analyzed in discourse frameworks. Hence, understanding the position can overcome the situation itself and sometimes produce more effect. Barry Buzan in 1983 in the book People, States and Fear, in a vast and valuable theoretical effort, attempted to classify threats into five general groups - military, political, economic, social, and environmental – and he attempted to define the concept of security in a new way. Buzan believed that thinking about security from the perspective of national approach led to the emergence of a vision that considered only military issues with the same security. While in the real world of human life, people are exposed to threats from the political, economic, social and environmental spheres. Thus, Buzan argued that in today's world, must pay attention to national security in the sense of a systemic security that everyone, state, and system play a role in it. Also, economic, social and environmental factors are as important as political and military factors. The remarkable point is that these five sections do not work apart. Each of these sections defines a focal point for emphasis and analysis and a method for classifying priorities, but they are inevitably interdependent and interact in many ways[13]. With the globalization of the economy and the transfer of power from military concepts to economics, access to natural resources can be considered as one of the factors of power. Whereas economic development and development are also dependent on natural resources, ownership or easy access to valuable natural resources is considered as one of the indicators of conservation or expansion of power, and in the future, access to reliable water resources will be one of the main components of power, especially in low water areas. When a country is heavily dependent on supplies of water from the rivers that originate outside of its terrestrial environment, the placement of water in the field of national security matters is closer to reality. Hence, one of the most important indicators of vulnerability to water scarcity in a country is the degree of dependence of the inflow surface flows across the borders.

III. MIDDLE EAST HYDROPOLITIC

Unfortunately, the limitation of the limits and signs and border agreements that accompany them does not protect any state from border disputes. Weak borders can easily bring about conflicts between states. If the borders be physically and legally safe, allocation of resources or some of the functional aspects of the border may cause disagreements. Generally, there are four types of border disputes that can all be found today in the Middle East and North Africa: disputes where the exact location of the border; disputes over territory occur when two neighboring countries claim to have a common border territory; disagreements intensify when each of the two neighboring countries claims to have ownership of the region that is shared between the two countries; the functional disputes that result from the effects of the border on the movement of people and goods; disputes over resources that extend across the border. Functional disputes and disputes over border resources are rarely resolved through border change[14]. Water shortages are more pronounced in the Middle East and in North Africa than elsewhere in the world. The cause of the water crisis in the Middle East can be found in the climatic conditions of this region. The countries of this region are in the dry and semi-arid belt of the world and the average rainfall in this area is 450 mm annually. This is very important because about 79 percent of the plants and fields in the area are showered with rainwater. Also, 600 million hectares of desert are located in this area, that means about 43% of the total area of the region, plus the average population growth rate in this region is 3%. Surface water is a vital part of the region's water bodies; surface water can be divided into permanent surface water and seasonal surface waters. The seasonal surface waters, which are dry for a long time, occupy a large part of these waters. This range includes the center of Iran, all of Saudi Arabia, the central plateau of Syria, the Sinai Peninsula and all of North Africa, except Nile Delta. Also, permanent surface water can be found in areas that have more rains; in such a way that, it can be said that the limits of these rivers are mainly limited to the highlands of Turkey and Iran. Among these rivers, only three Nile, Tigris, and Euphrates can be called the "Great River" global scale. In the Middle East, the highest rainfall occurs in the winter, but the rainiest season of the rivers is the spring, which is the result of melting of huge snow cover and flow of rivers in the rivers. From mid-June to mid-May, due to the fact that there is no rainfall in the region, the water volume of the rivers, which only rely on groundwater resources, drops sharply[15]. Hence, the most important differences arising from the Middle East border resources in the management of the river basin, and such disagreements, especially occur in areas where there is a disturbingly acute problem of water scarcity. As mentioned above, the weather in the Middle East is mostly dry and semi-arid; only Turkey and Iran have proper water resources. Although Iran is considered as an arid region, the average annual rainfall is less than one-third the average rainfall in the planet, and that rainfall is not evenly distributed across the country. In the Middle East, more than 11% of water resources are allocated to irrigation in the agricultural sector. Most of the Middle East area has plain plains or highlands. The vast desert is spread across the southern slopes of the region, including the Libyan Desert and the Arabian Desert in Egypt, the Rub' al Khali in southern Saudi Arabia, and the desert in Syria at the intersection of Saudi Arabia, Jordan, Syria and Iraq. The northern mountainous areas include the Taurus Mountains in Turkey, the Alborz Mountains and Zagros Mountains in Iran and the northern mountains of Iraq. The hydropolitics of the Middle East is now formed, and in many ways has affected the relations between the countries of the region. All Middle Eastern and North African countries consider water conservation and trying to get more shares of common water resources as a national principle. If the international border rivers are navigable, the deepest middle line of the river, called the Thalweg, is usually the border between the two countries. Obviously, the countries located in the downstream of the international rivers are the most vulnerable to fluctuations and water supply. If such countries facing with additional water demand from beyond the borders of the upstream countries, and also suffer from excessive population growth, In terms of political economy security will be severely vulnerable. There are four river basins in the Middle East have caused many conflicts and tensions between the countries of the region: Nile River, which runs from Ethiopia, Sudan and Egypt; the Tigris and Euphrates rivers that cross the countries of Turkey, Syria and Iraq; the Jordan and Litani rivers, which have been the motive for political conflicts between Lebanon, Syria, Israel and Jordan; water basin of the West Bank and the Gaza Strip in Palestine[16]. In the Middle East, the struggle over these important rivers has a historical background. Generally, there are two main reasons for the water crisis in the Middle East: rapid population growth, rooted in sociological and health issues; and the shortage of water resources in the Middle East, which is rooted in the geopolitics of the region and located in the dry and semiarid belt of the world. Regarding the misuse of water resources in the Middle East and the unnecessary use of some of the countries in the region from existing water resources, in the coming years, water shortage crisis in the Middle East is expected to intensify, and this will intensify the conflicts in the region. Other reasons for the shortage and water crisis in the Middle East include: 1.the overcoming of agricultural sector over other sectors of the economy and the production of products that require a high level of water, such as cotton, rice, sugar cane and other kinds of products. About 70 percent of the Middle East's water resources are consumed in the agricultural sector. 2. Irrigation system's lack of modernization, lack of adequate funds to build the dam and the establishment of new irrigation systems. 3. Incorrect water policies and strategies, absence of planning and having a reasonable policy

to reduce water consumption, and lack of sufficient planning to create a culture of proper use of drinking water resources. 4. Lack of friendly relations between countries, which itself prevents bilateral agreements between countries in the common water resources basin. This, in turn, leads to more countries compete in the use of common water resources basins. 5. Being in the dry and semi-dry belt of the world, and the dependence of the region's economies on agriculture and water. In this case, Persian Gulf countries such as Kuwait, Qatar, Bahrain, Saudi Arabia and the United Arab Emirates are among the countries that have the lowest per capita water resources in the world. 6. High population growth compared to other countries in the world, for example, in the Jordan River, the population growth in Lebanon is 1.2 percent, Jordan is 2.5 percent, West Bank 3.5 percent, Syria 3.8 percent, and Gaza Strip 3.1 percent. 7. Absence of a water treaty between the countries of the region that prevents excess water consumption, and lack of optimal water allocation for all riparian countries. Turkey and the implementation of the GAP project can be mentioned in this regard. In this project, in this project, Turkey has not even implemented the Additional Protocol to the Treaty of Lausanne[17]. More than 90% of the Euphrates River flow, as well as part of the Tigris river basins, which is the main source of Iraqi water supply, comes from Turkey. The construction of the Ataturk Dam by Turkey and the al-Thawra Dam and other water resource development projects in the region have created problems for downstream river exploiters, and have become part of Iraq's national security. Turkish leaders are looking at these water resources as national sources and turned to long-term hydroelectric projects and dam construction to address their energy challenges.

IV. TIGRIS AND EUPHRATES

The Tigris and Euphrates rivers originate from the 3000 meter high altitudes of the northeast mountains of the Anatolian Plateau of Turkey. The sources of these two rivers are rarely more than 32 kilometer apart. The Tigris River originates from the southern heights, but a large part of the river's water comes from its sub-branches in Iraq. The Tigris, with 1900 km long, is the second largest river in the Middle East. The average annual water volume of the Euphrates and Tigris rivers is 32 and 50 billion cubic meters. The flow of water from the Tigris and Euphrates rivers is important for the needs of all three countries, Turkey, Iraq and Syria[18]. The strategic importance of these rivers, increased demand for water and the flourishing of water resource development projects in the beneficiary countries sometimes create tension in relations between countries. For example, allocating a large portion of the Euphrates River to fill the Ataturk Dam, which is part of the GAP project, has had a bad effect on the relations between the three countries of Iraq, Syria and Turkey. 20% of the river is in Turkey, 78% in Iraq and only 2% in Syria. The Euphrates with 2700 km long is the longest river in Middle East; 40% of its route is in Turkey, 25 in Syria and 35% in Iraq. The annual volume of water from the Euphrates to Syria is 30 billion cubic meters, and due to the inclusion of sub branches in Syria to 32 billion cubic meters reaches when leaving the country, in Iraq, branches also join the river and increase the volume of water. Turkey, Iran, Syria and Iraq are Tigris basins country, the highest Tigris water comes from the Turkish mountains with a share of 78.1%. In the next stage, the Zagros Mountains in Iran are the second water supplier in this river with a share of 13.3 percent, 19% of Tigris area is located in Iran[19]. The Tigris and Euphrates rivers play a vital role for Iraq. These rivers are considered as the largest sources of irrigation in the country. The water of most of the big cities in Iraq, From Baghdad and its suburbs to the city of Al-Kut, is supplied through the Tigris River. These two rivers, especially the Euphrates River, are considered as a source of irrigation and hydropower for Syria, in such a way that almost 81 percent of the country's water is supplied through the river. Iraq is geographically the driest country of the Tigris and Euphrates basins, and therefore has a very strong dependence on the waters of these two rivers, so that more than 85 percent of Iraq's fresh water supplies from the Tigris and Euphrates. The average annual rainfall in Iraq is 800 mm, varying between 150 mm in the southern desert and 1892 mm in the northeastern mountainous regions. Until recently, Iraq's main problem was water quality, up to its quantity. Accordingly, the problem of soil salinity and variable flow of the Tigris and Euphrates, which sometimes cause drought and sometimes lead to floods, were the major problems of Iraq in the water issue. The total Iraqi cultivable land is about 8 million hectares, which was cultivated four to five million hectares a year before the US invasion. One of the largest and most important Iraqi aquatic environments was the Wetland, covering a large part of the southern half of Iraq, from Baghdad to Basra, but after the 1991 uprising in Iraq, Saddam vacated the water by constructing a river from Baghdad to Arvand, and burning their canes. The reason for this was that Shiites who opposed Saddam hid in these wetlands and used them as a base for fighting against him. These wetlands were an important source for the local economy, as many Shiites of the area used fish and other resources for their livelihoods. These wetlands today are the source of dust in Iraq and Iran[20]. The total surface water resources in Syria, except the Euphrates, are 94.9 cubic kilometers per year, while the natural flow of the Euphrates River in the Jarabulus region is 28 cubic kilometers. Until the recent severe droughts, recyclable groundwater resources in Syria were estimated at 5.1 cubic kilometers per year. The country's rainfall varies between 100 mm in desert areas to 1,300 mm in coastal areas. Most of the Syria's water resources are used for agriculture. The development of irrigation and food production within the country has always been a priority, and the Euphrates River Basin is the main area for this development. Syria has built three

dams on the Euphrates, which include: the Tabqa Dam with a storage capacity of 14.2 cubic kilometers of water and 860 watts of potential hydroelectric power capacity, which was launched in 1973 with Soviet assistance; Al-Ba'ath flow regulator dam, and the hydroelectric Tishrin Dam with a storage capacity of 9.1 cubic kilometers per year and 630 megawatts of hydraulic power potential. According to a bilateral agreement with Turkey in 1987, the Syrian government has a water share of 15.75 cubic kilometers per year equivalent to 500 cubic meters per second from the Euphrates River[21]. But from among the three countries above, Turkey has the most power in exclusive use of the Tigris and Euphrates, because the main sources of these two rivers are in the country and about 78% of the water is provided by the two rivers through Turkey. Due to the shortage of rainfall in eastern Turkey compared to other parts of Turkey, the Tigris and Euphrates water management and extraction for irrigation, water supply and hydroelectric power are of great importance. 20% of the 5.8 million hectares of irrigated lands in Turkey are located in the southern Euphrates and Tigris basins, and this in turn reflects the importance of the irrigation and agricultural sector in the area. In short, these two rivers are important for the countries because of offset water scarcity, energy supply and environmental impacts from the quality of these waters. Given the importance these rivers have for these three countries, they have always been the cause of controversy between these countries.

V. GAP PROJECT

The GAP project, as the largest water resources development project in Turkey in line with its major developmental policies, over the past decades, started with an initial capital of $ 32 billion. Turkey is a rich country in terms of water resources and hydrological facilities. The average annual rainfall in the country is 642 millimeters and in this country there are 26 major river basins. The Tigris and Euphrates constitute only one-third of the country's water resources. The main water consumption in Turkey is in the agricultural sector, but its urban consumption has also increased sharply in recent years. On the other hand, the water of the major cities of Turkey is also made up of rivers that are relatively far from these cities, for example, the water of Ankara is provided by the Kizilirmak River and Sakarya River, located 90 km from the city[22]. Turkey views its rivers as a source of irrigation and hydroelectric power generation. This country is a self-sufficient food producer and exporter of all kinds of fruits and vegetables to Middle East and Europe. Turkish water projects are mostly designed to provide cheaper energy and domestic production. Since 1977, Turkey has been making extensive dams on the Tigris and Euphrates in the framework of the GAP project. Based on this plan, Turkey by creating a deviation in the direction of the Tigris and Euphrates rivers, it began manufacturing 22 dams; whereby 1.7 million hectares of downstream farming could be exploited. Although in 1980, Turkey accepted a treaty to provide at least 500 cubic meters per second of the Euphrates water for its two neighbors, but in practice it did not happened. In the framework of this project, in 1992, Turkey inaugurated the Ataturk dam with a volume of 7.78 cubic meters. It is the largest dam in the Middle East and the ninth largest dam in the world, which can store all of the Euphrates in its reservoirs. In the first stage of filling the dam, for a month, the flow of the Euphrates River was completely cut off, causing anger in Iraq and Syria. The Ilisu Dam is one of the dams of this project, which its construction began in 2006 and is on its final stages. In case of exploitation of this dam, the water entering Iraq, which is 93.20 billion cubic meters per year, will decrease to 7.9 billion cubic meters. Another point about the GAP project is that the project is very catastrophic from the view of environmental activists, also, in Turkey, environmental activists have protested. It is anticipated if the GAP project is fully exploited, this project could alone provide 25% of its electricity needs. In terms of Turkey, the GAP is an inbuilt plan for the development of the relatively poor South Anatolian region, that goal is to develop agricultural products and products for export and to raise the living standards of the people of this region. Upon completion of the GAP project in the southeastern part of Anatolia, Turkey intends to develop the relatively deprived area rapidly. The project, which includes 22 dams and reservoirs and 19 hydroelectric centers, is under construction in the Tigris and Euphrates basins and 9 regions of southeastern Turkey with an area of 75,358 square kilometers. Irrigation of more than 1.7 million hectares of agricultural land, producing more than 22% of the annual energy required by Turkey, especially through the Ilisu dam and creating employment for nearly 4 million people are the main objectives of the project. The general objectives of the project, which are being implemented in the southeastern region of Turkey, include: Increasing general welfare, increasing development and economic growth of the region, eliminating poverty and socio-economic inequalities, and bringing the living standards of the people of Turkey to the level of living standards in the world. The region where the GAP project runs is about 10% of Turkey's territory. Due to low rainfall in this area, this area is one of the arid areas of Turkey. This area includes large plains like Suruc, Cylanpinar and Mardin, as well as axial rivers such as Euphrates and Tigris[23]. Turkey, by implementing the GAP project, pursues two major goals: Controlling the entire flow of Tigris and Euphrates, which naturally, part of these waters belong to Iraq and Syria; limiting the share of water in the lower countries, which will in future lead to a greater political dependence on these countries to Turkey. Turkey justifies its actions in the GAP project in the following arguments:

- The downstream countries of the Tigris and Euphrates basins (Iraq and Syria) are weak in terms of water resources management and most of the freshwater flows into these countries are wasted. But by implementing the GAP, the same countries themselves will benefit from this great project. So it will prevent the devastating floods from entering the downstream countries and it will prevent the loss of freshwater.
- Considering that about 90% of the annual flow of the Euphrates River and about 50% of the annual flow of the Tigris River originates from Turkey, so the country has the legal right to control the flow of these rivers.
- The treaty adopted by the United Nations on transboundary waters has not yet come to a logical and desirable position to provide all the rights of the countries involved.
- Iraq should have a smaller share of the Euphrates water than it currently is, because most of the Euphrates River basins are uncultivable and non-fertile; so water consumption in these lands is considered as a loss of fresh water.
- The goal of Turkey from build dams is social development, power generation and demographic change management, and the country has no political motives in this regard, and this is not a threat to the downstream countries.

VI. THE IMPACTS OF THE GAP PROJECT ON IRAQ AND SYRIA

The implementation of Turkey's policies has created many worries about the fate of the downstream countries of Tigris and Euphrates, Syria and Iraq. In this region, Ataturk dam alone has 48.7 billion cubic meters of capacity, which is more than the total capacity of the entire Iran`s dams. After the first stage of filling the dam in 1992, which resulted in a one-month cut off of the flow of Euphrates River in Iraq and Syria, and leading to a military warning from the governments of these countries, especially Iraq, Turkey has not yet experienced serious tensions over the GAP project. Over the years, the GAP project has gradually reduced water entry to the downstream counties. Meanwhile, the spreading of terrorism and the war in Syria and Iraq has made the treaties about water between Syria and Turkey as well as between Syria and Iraq meaningless; because the sovereignty of Syria at the points of entry and exit of the rivers has almost disappeared, and after this, it is also unlikely that the Kurds of the region who have the regional sovereignty can take action against Turkey. On the other hand, with the destruction of farms and the migration of people from the rural areas of the Euphrates and the Tigris in Syria and Iraq, to a large extent, the dependence of the people of these lands on the water of these two rivers has reduced. In such a way, less farms and gardens are still being exploited in these areas. The issue of reducing water dependency reduces river flow in the society, and as a result of the decrease in the sensitivity of people, the poor and busy governments of these countries are also not concerned about pressure on Turkey. The issue of reducing water dependency reduces the sensitivity of the community to reducing river discharge, and as a result of the decrease in the sensitivity of the community, the poor and busy governments of these countries are also not concerned about pressure on Turkey. In Iraq, in addition to the war, the issue of excessive imports of food has also led to the lack of agricultural benefits for the people, and therefore substantially, its dependence on the water has decreased. Since Iraq is largely dependent on the surface waters flowing from abroad of the country, droughts in the region have little effect on the volume of water in the country, but drought has a direct effect on reducing soil moisture and increasing dust. The main problem of Iraq in the field of water is access to safe water and sanitation, so refining and desalting technologies are growing in this country. The construction of a large number of dams in the countries of the upstream Iraq, namely Turkey and Syria, has led to severe drought in the country. In addition to the dams in the country during 2008 and 2009, Iraq was forced to drill 2,200 new wells to compensate for the shortage of drinking water and agriculture. The amount of digging wells is almost twice what was in Iraq until then. According to studies, the causes of the decline in Iraq's fresh water resources are as follows: 60% due to the digging of thousands of deep wells in the Tigris and Euphrates, 20 reduction of rainfall, especially snow, and 20% loss of water in lakes and reservoirs of two rivers. Also, the consequences of over-digging of deep wells in this country include: increasing drought and decreasing soil moisture in most areas, drought in wetlands, in particular a significant area of Hawizeh Marshes, and consequently the emergence of a hazes crisis in the region. The dams that created over the past four decades on the Tigris and Euphrates have led to a reduction of three-quarters of the water entering Iraq and slowly expose the Middle East to environmental damage and tension. Part of the decline in Tigris and Euphrates is due to inhuman factors such as climate change and widespread droughts over the years. The total amount of fresh water from the Tigris and Euphrates rivers declined more than 114 cubic kilometers between 2003 and 2010, which is the second declining trend after the Indian rivers in the world[24]. The Ilisu Dam is one of the GAP project’s dams, which began its construction in 2006, and completed in 2019, and Turkey opened it. Due to its high reservoir capacity of the dam, it is expected that climate change will occur at a widespread level in the area. The ecosystem of the southeastern region of Turkey will face more water and, on the other hand, the ecosystem of Iraq will face a decline in inlet water, which will lead to massive changes. It is said that there are 123 species of birds in this

basin, likely to migrate due to climate change. The dam will also destroy the natural beach of the Tigris River, which is home of insects and amphibians. The dam will also lead to the destruction of the riverbed and the reduction of water quality and the cost of refining for the countries of the region. Generally, the effects of the Ilisu dam can be considered as follows: by filling the Ilisu dam, the Tigris River in Iraq and the Hawizeh Marshes in Iran may face water shortages or drought; destruction of agricultural land at the downstream of the Ilisu dam in Iraq; producing more hazes in Iraq and transferring them to the border provinces of Iran; by water drop in Tigris, valuable ecosystems near the river, the habitat of a large number of endangered species, will be eliminated. Both Iraq and Syria are at the downstream of the Ilisu dam and the GAP project. Iraq is considerably dependent on the Euphrates and the Tigris to provide needed water, however, 90% of the Euphrates water and 50% of Tigris water comes from Turkey. More than 85% of Iraq's fresh water comes from two rivers of the Tigris and Euphrates, and their sub branches. In the south-east of Turkey, which originates from the Tigris, unemployment is high. Due to internal and external challenges, Iraq has faced with considerable water shortages and is one of the poorest countries in the Middle East. These challenges include poor water resources management, internal political conflicts, ISIS and unbalanced relations with neighboring countries, including Turkey, Iran and Syria. Water scarcity can severely hit various sectors of the Iraqi economy, such as agriculture, and endangers the health of the community. Iraq receives 40% of its needs from surface waters. More than 90 percent of Iraq's surface water is supplied from neighboring countries, with Turkey alone providing 80 percent of this amount. Iraq with only 216 mm of annual rainfall and with the high evaporation rate is known as a semi-arid country. In summary, the GAP project will bring the following problems to Iraq:

- Water shortage: With the full implementation of the GAP project, the Euphrates River will lose 70 percent of its water[25]. By reducing the water entering Iraq, the country will drop below the water poverty line (The water poverty line or water crisis is defined as 1000 cubic meters of water per year per person)[26].
- Lack of food security: By reducing the water entering Iraq, the agricultural sector of the country will suffer serious damage and imports of various types of food will increase and Iraq will increasingly depend on foreign countries.
- Health Concerns: By reducing the arrival of freshwaters, and lack of nutrition of aquifers, the salinity and contamination of the underground water layers will increase. Due to the reduction of Arvand Rud volume, the Persian Gulf seawaters will penetrate Basra and reduce the quality of the waters in the area. As a result, mortality of all kinds of animals, such as fish, will increase; As far as Since the 1990s, the fish population in the area has fallen by half[27].
- Environmental costs: By implementing the GAP project, environmental crises such as the creation of dusty centers will occur in the central Mesopotamian wetlands. As a result, the state needs to spend billions of dollars to rehabilitate these lands and save lives, which will bring additional charges to the national economy of Iraq.

VII. CONCLUSION

Both major and main rivers, namely the Tigris and Euphrates, as well as some of the smaller branches of these basins originate from Turkey. By constructing 22 dams in the region, Turkey has tried to make significant development in this region, and has tried to make the Kurdish people coordinate with the Ankara regime. The project has gradually reduced the flow of water to downstream countries, and has led to a considerably increase in concerns about the future of the Tigris and Euphrates. Almost half of Syria and more than two thirds of Iraq are dependent on the water of these rivers. Tangible reductions in the Tigris and Euphrates basins may lead to increased pressure from various Iraqi groups, especially Shiites, to supply water, as well as flood of migrations to Iran's borders. By adopting an economic approach to water, Turkey seeks to earn money and increase its prestige. An interesting point about Turkey is that, Turkey seeks to promote its water discourse and encourages other upstream countries in the region, such as Afghanistan and Ethiopia, to adopt similar approaches. The economic perception of water and its recognition as a commodity such as oil and the efforts of some countries to exploit this vital element have caused so much concern. As expected, the continuation of this trend will be the most important factor in increasing water tensions in all parts of the world, such as Middle East. While there are more balanced approaches that make greater sustainability of natural resources as well as ecosystems of the planet, and can also ensure better human security and national security. Undoubtedly, the attainment of water security is a common task that requires the cooperation of the entire region. But the rule of economic approach to security and to water has led to tensions, and if the downstream countries do not have enough power and wealth to provide their own water, we should probably wait for the deterioration of cities and villages and the emergence of a new wave of environmental migrations. In this context, the importance of water diplomacy at various levels is clearly evident. Countries can effectively manage transboundary waters through diplomacy.

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