



WATER CRISIS BETWEEN TURKEY, SYRIA AND IRAQ AND ITS IMPLICATIONS

Samreen Bari Aamir

Lecturer

Bahria University

Karachi – Pakistan

[*paesthetics@yahoo.com*](mailto:paesthetics@yahoo.com)

Muhammad Mustafa Raza

Senior Lecturer

DHA Suffa University

Karachi - Pakistan

[*mustafaraza44@gmail.com*](mailto:mustafaraza44@gmail.com)

Shumaila Kamal Khan

Lecturer

Lasbela University of Agriculture, Water and Marine Sciences

Uthal, Baluchistan

[*Shumailakamal88@gmail.com*](mailto:Shumailakamal88@gmail.com)

ABSTRACT

The goal of this study is to look into the hidden dangers of water disputes among Turkey, Syria, and Egypt. Everyone is aware of the fact that natural resources like water is the building block of development of any country. Water is a valuable resource that is becoming increasingly scarce. With the passage of time, a sharp increase in population rise and, rise in food demand will be observed. The Tigris and Euphrates Rivers, together, are vital to Syria's and Iraq's economy and domestic requirements. According to some estimates, the River Euphrates provides around 85% of Syria's total renewable water supply, while River Tigris and River Euphrates together provide about 100% of Iraq's supply. Turkey accounts for 88.7% of the Euphrates basin's total water potential. The researchers have employed qualitative methodology for the research underhand and adopted thematic analysis as research method for this study. Researchers analyzed different research studies related to the issue and considered cases to the research-based statements of the individuals



in power on the issue of water. Researchers looked at a variety of research studies on the topic and compared them to research-based claims made by individuals in positions of power on the topic of water.

KEYWORDS: Water, Euphrates, Tigris, Scarce resources Dams, Mesopotamia.

INTRODUCTION

Water is often considered to be the most important natural resource for human life on Earth. Humans, animals, and other living things on this world all require water to survive. Water, like oxygen, plays an important role in the proper functioning of the human body. It will continue to play an important role in larger areas of social development, improving quality of life. Rivers, lakes, and streams function as borders in many countries, particularly between bilateral countries. In some cases, natural sources have even crossed the borders of trilateral countries, like in the case of rivers between Egypt, Syria, and Turkey. Another major management challenge was the fluctuation of rivers and flows from upper to lower riparian zones among these countries.

It is predicted that future battles will be of different types, that is resource conflicts. Increasing demand for essential materials is clashing with another important part of the global resource equation: the reality that some substances have a finite worldwide supply. While the world is abundant in the most essential resources—water, arable land, minerals, lumber, and fossil fuels—there are practical limits to what can be harvested from the global environment. Since a long time, it is considered that the ‘War on Water’ has garnered worldwide attention as a result of global environmental changes in many countries. Despite the fact that no wars have been fought between countries over this topic, a number of environmentalists have expressed grave worries about this critical global issue.

Water is a valuable resource that is becoming increasingly scarce. A total of 3.6 billion people (47%) live in areas where there is a water scarcity for at least one month each year, accounting for just under half of the world's population. With at least 4.0 billion people, or 52 percent of the world's population, suffering water shortages, the amount is expected to be much higher. Approximately, half of the world's population (57%) will live in water-scarce areas by 2050. This judgement is, once again, most certainly conservative. (Boretti, 2019)



Water is expected to be at the core of emerging disputes. Privatization initiatives were endorsed by the IMF and the World Bank. Defective large dam projects, for example, have heightened tensions, sparked demonstrations, and resulted in bloodshed.

The Jordan, Tigris-Euphrates, and Indus rivers have shaped the Middle East and Southwest Asia's ebb and flow of human civilization. The early growth of irrigated agriculture, as well as the subsequent formation of urban populations and stratified social systems, were aided by all three rivers. These rivers have long been a source of conflict between competing kingdoms and empires, dating back to the first known examples of organized warfare and continuing to the current day. These three systems are expected to continue to fight and struggle throughout the twenty-first century. Years of conflict and poor water management have gone unchecked. Population increase, ill-advised agricultural practises, and government subsidies that encourage consumption have transformed a once-arid region of the world into a voracious water user. These rivers have long been a source of clashes between rival kingdoms and empires, dating back to some of the first known examples of organized warfare and continuing until today.. In the twenty-first century, these three systems are predicted to continue to clash and battle. Years of war, and haphazard water supply management have gone unchecked, Population increase, ill-advised agricultural strategies, and government subsidies that encourage consumption have transformed a formerly dry region of the world into a voracious water consumer. In recent years, the Middle East's water shortage has played a critical role in causing conflict amongst its countries. Although water is a political and geopolitical issue in practically every part of the world, no other region has experienced the paucity of water supplies comparable to these unsatisfied governments, as we have already described.'

Turkey's primary water sources are the Tigris and Euphrates rivers, which flow down from the southeast highlands and irrigate the Fertile Crescent. As each attempts to defend its own interests, the ownership of the Tigris and Euphrates river basins has strained ties between Turkey, Syria, and Iraq.

In reality, every country in the Middle East is a downstream riparian country with restricted water resources. As a result, there is a natural convergence since these states want to wield as much power and authority as possible over available natural water supplies. In areas where water is limited, authorities frequently see battle over important supply sources as a legitimate function of national security. Governments often avoid using force to resolve international conflicts unless essential security interests are at issue. Conflict is rare when water is abundant, such as in Europe and North America's temperate zones. However, in locations where water is scarce, its supply is seen as an



issue of national existence. Disputes over shared water resources in the Tigris-Euphrates basins are likely to result in high levels of tension and violent conflict on a regular basis. Several governments and ethnic groups share the Tigris-Euphrates system, which are distrustful of one another and rarely agree on water-related matters. Furthermore, efforts to construct a basin-wide management plan have thus far failed. Although some water agreements have been established between particular nations, there are currently no plans in place for the overall distribution of system waters, allowing for further disagreements over the use of limited resources. Furthermore, expanding population is a crucial issue that has a considerable impact on the water-use equation (Michael, 2003).

The Tigris and Euphrates enter Mesopotamia's wide alluvial plain—literally, "the region between the rivers"—after descending from Turkey and Iraq's hills. This massive valley (about 500 miles long by 150 miles broad) is bordered on the south and west by the Euphrates, and on the north and east by the Tigris. It was here, some 7,500 years ago, that humans first developed irrigated agriculture, and where the first human cities and kingdoms developed. The two rivers flow through vast wetlands inhabited by the Madan, or "Marsh Arabs," on the southeastern fringe of the Mesopotamian plain. These hardy people have developed a distinct culture focused on fishing and animal husbandry through the years. Iraq has worked to drain the wetlands since the Gulf War of 1990-91. After passing through this region, the Tigris and Euphrates join to form the Shatt al-Arab near Al Qurnah; the united stream then runs south for a hundred miles until emptying into the Gulf (Hillel, 1994).

The Tigris and Euphrates Rivers, together, are vital to Syria's and Iraq's economy and domestic requirements. According to some estimates, the Euphrates provides around 85% of Syria's total renewable water supply, while the two rivers together provide about 100% of Iraq's supply. Turkey is far less reliant on the Tigris-Euphrates system for its fundamental water needs: it now gets around 30% of its supplies from these rivers. The Turks, on the other hand, have detailed plans to irrigate additional croplands in southeastern Anatolia, and so seek to enhance their use of the Tigris and Euphrates rivers. (Beschoner, 1992)

WATER FACTS

The Tigris River has a length of 1,850 kilometers (1150 miles), whereas the Euphrates River has a length of 2,800 kilometers (1,740 miles). The Tigris-Euphrates river basin covers 35,600 square kilometers (13,700 square miles), including Turkey, Syria, Iraq, and Iran as riparian countries. (The Euphrates and Tigris River Basins, n.d.)



The flow of the two rivers is decreasing over time. Climate change, as well as the construction of dams and drainage systems in the upper basins, are to blame. This has an effect on the two rivers' water quality. Iraq, being the lowest riparian area, is disproportionately affected.

The Euphrates River flows through Syria and Iraq and originates in Turkey. In Iraq, it merges with the Tigris to form the Shatt-al-Arab waterway, which flows into the Persian Gulf. Two major tributaries of the Euphrates, the Karasu and the Murat, both originate in Eastern Anatolia and have several smaller tributaries. The Euphrates River marks Al Jazira's western boundary in northern Iraq. The ancient Babylonian civilizations flourished in the marshy plains between the Tigris and the Euphrates to the south east. The Euphrates is significant solely as a source of water.

The Euphrates River flows through Turkey, Syria, and Iraq, and its headwaters are two major tributaries that spring in the Armenian Mountains in eastern Turkey, an area with a rugged Mediterranean climate that influences the river's flow regime. Turkey accounts for 88.7% of the Euphrates basin's total water potential, with Syria accounting for the remaining 11.3 percent. Iraq has made no contribution to the runoff. The river runs via a pass in the Anti-Taurus Mountains to the Jezirah Plains in Syria, where it is joined by three further tributaries: the Sajur, the Balikh, and the Khabur. There are no more water additions to the river from here to the Persian Gulf. The river has a length of 2,330 kilometres and a flow of 31.8 billion m³/yr.

It has been observed that the salinity of the Euphrates water is increasing with time, and it is now at an unsustainable level on the Syrian-Iraqi border, well over what is advised for irrigation. At one point, all three states began to establish extensive development plans to use river water. The goal of each of these republics' development programmes was to achieve food self-sufficiency in order to keep up with the rapid rate of population expansion and lessen political and economic reliance on food imports.

Turkey owns roughly 33% of the Euphrates Basin, whereas Syria owns 19%, Iraq owns 46%, Saudi Arabia owns 1.5 percent, and Jordan owns about 0.03 percent. Turkey owns 12% of the Tigris Basin, whereas Syria has 0.2 percent, Iraq owns 54%, and Iran owns 34%. (Dohrmann, 2014)

The Tigris River, which originates in Hazar Lake, runs for 40 kilometers between Turkey and Syria. It flows into the Persian Gulf after traversing Iraqi land and joining the Euphrates to form the Shatt-al-Arab canal. The Botan, Batmansu, Karpansu, and Greater Zap rivers are its primary tributaries in Turkey. Turkey accounts for roughly 51.8 percent



of the Tigris' flow, with Iraq accounting for 49.2 percent and Syria providing no water. The Tigris is a very unstable and unpredictable river in terms of annual flow and flood because of the uneven water flow from the tributaries. The ongoing trans-boundary water conflict in the Euphrates-Tigris river basin began in the early 1960s with the advent of large-scale water supply schemes undertaken in competition by the main riparian, including Turkey, Syria, and Iraq (Bari, 2016).

These dams were built to control and harness the waters of the two rivers, especially during floods and droughts. By the mid-1960s, Iraq had considerably outpaced Syria and Turkey in terms of irrigated agriculture growth. Iraq irrigated approximately during this period, the river basin included five times as much area as Syria and nearly ten times as much land as Turkey. (Dohrmann, 2014)

The issue escalated when in 1975, Syria began using the Euphrates' waters for large-scale irrigation and hydroelectric power generation projects. Construction on the Syrian dam at Tabqa on the Euphrates River (later called the ath-Thawrah, or Revolution Dam) was built with Soviet help and was designed to hold 12 billion cubic metres of water and irrigate 640,000 hectares (259,000 acres) of agriculture. These mega projects certainly damages the traditional water supply. The Syrians denied that the river's flow had dropped much, but relations between the two nations had become more hostile. We might conclude that dams are viewed as threats rather than as a means of storing water (Drysdale, 1992).

Iraq has also built huge dams on the Euphrates and Tigris Rivers, notably the Mosul and Haditha Dams, which were completed in 1985, for water storage, flood control, and hydropower generating.

The Tishreen Dam, Syria's third on the Euphrates River, was built and placed into operation in 1999 with the primary goal of generating electricity. Because the Tigris River forms the boundary with Turkey, Syria could not build reservoirs to store or redirect its water without the help of its neighbour on the opposite side. The Keban Dam, Turkey's first dam on the Euphrates River, was built in the mid-1960s and completed in 1974. The Karakaya Dam, the river's second dam, was completed in 1988. The first dam built as part of the Southeastern Anatolia Project's implementation was this one (GAP). The third dam on the Euphrates River was the Ataturk Dam, which was completed in 1992 and is the most important in the GAP Project.



Dams in the Euphrates river basin in Syria

Dam / project name	Storage capacity	Reservoir area
Tabqa (800 MW)	11,600 Mm ³	625 km ²
Tishreen (1.6 MW)	1,300 Mm ³	70 km ²
Ba'ath (64 MW)	90 Mm ³	2.7 km ²
Western Hasakah (12 MW)	73 Mm ³	1,020 ha.
Eastern Hasakah	200 Mm ³	3,100 ha.
Khabur (8 MW)	540 Mm ³	9,580 ha.

Source: River, A. S. The Euphrates.

Dams in the Euphrates river basins in Iraq

Name	River/Tributary	Purpose		Completion Date
Ramadi	Euphrates	-	I	1955
Faluja	Euphrates	-	I	1985
Hindiya	Euphrates	-	I/P	1913/1989**
Haditha	Euphrates		I/P/F	1985

Source : Adamo, N., Al-Ansari, N., & Sissakian, V. (2020). How dams can affect freshwater issues in the Euphrates-Tigris basins. *Journal of Earth Sciences and Geotechnical Engineering*, 10(1), 15-48.



Dams in the Euphrates River Basins in Turkey

No	Name	Dam River/Tributary	Purpose Completion	Date
1	Atatürk (Karababa	Euphrates	P	1992
2.	Beyhan I	Euphrates/ Murat	P	2015
3.	Beyhan II	Euphrates/ Murat	P	Planned
4.	Birecik	Euphrates	I/P	2001
5.	Burç Bendi	Euphrates/ Goksu	P	2010
6.	Dumluka	Euphrates/ Burgur	I	1991
7.	Erkenek	Euphrates/ Adiyaman	P	operational
8.	Göksu	Euphrates/ Goksi	I	1991
9.	Hecihider	Euphrates/Sehir	I	1989
10.	Hancagiz	Euphrates	I	1988
11	Upperkalekoy	Euphrates/ Murat	P	2017
12.	Lowerkalekoy	Euphrates /Murat	P	Planned
13.	Karakaya	Euphrates	P	1987
14.	Karkamis	Euphrates	P	2000
15.	Kayacik	Euphrates/ Sajur	I/P	2005
16.	Keban	Euphrates	P	1974
17.	Kirazlik	Euphrates/ Botan	I/P	2011

Source:https://waterinventory.org/sites/waterinventory.org/files/chapters/Chapter-03-Tigris_River-Basin-web_0.pdf



Dams in the Tigris River basins in Iraq

1	Kut	I	1939
2	Tharthar (Samarra Barrage)		1954
3	Mosul (Chambarakat, formerly Saddam Dam)	HP, FC, I	1985
4	Dukan (Lesser Zab)	I, HP	1961
5	Dibis (Lesser Zab)	I	1965
6	Derbendikhan (Diyala)	I, HP, FC	1962
7	Hemrin (Diyala)	I, HP	1981
8	Diyala (Diyala)	I, FC, HP	1969
9	Adhaim (Adhaim)	FC, I, HP	1999
10	Badush (Tigris)	HP	Partially constructed
11	Bekhme Dam (Greater Zab)	HP	Partially constructed
12	Mandawa (Greater Zab)	HP, I	Under construction
13	Taq Taq (Lesser Zab)	HP, I	Under construction

Dams in the Tigris River basins in Turkey

1	Goksu	I	1991
2	Kralkizi	HP	1997
3	Tigris (Dicle)	HP, I, WS	1997
4	Batman	I, HP, FC	1999
5	Garzan	HP, I	
6	Ilisu	HP	Under construction
7	Cizre	HP	Under construction
8	Silvan	HP	Under construction
9	Kayseri	HP	Planned

Source: https://waterinventory.org/sites/waterinventory.org/files/chapters/Chapter-03-Tigris_River-Basin-web_0.pdf



As the Tigris River enters Iraq, its water quality deteriorates to the point that it is unfit for irrigation in Baghdad. To address these issues, riparian countries must work together to improve the quality of the two rivers' water. Iraq's primary water supplies are the Tigris and Euphrates rivers. Throughout history, this nation was thought to be abundant in freshwater. Freshwater shortage is a recent problem in Syria and Iraq as a result of significant water withdrawals in Turkey as a result of an ambitious dam-building programme aiming at redirecting irrigation resources to the vast South East Anatolia: The GAP programme, as well as improvements in the hydrological regime as a result of Climate Change Effects. (Adamo, 2020)

TURKEY'S STANCE

Turkey's geopolitical, socio-economic and, historical status cannot be forgiven in any way. One of the world's oldest cultures flourished there. It is one of the most important places in the world as it connects the east with the west and the west with the east. It shares borders with about seven countries. Today's Turkey is not only a strong industrial country as Its economy is considered to be the twelfth strongest in the world however it is in continuous struggle to boost its production capabilities.it is necessary to keep in mind that for the industrial growth and development not only machineries, technical knowhow and skilled labor is important, it essentially depends on the raw material and the enough water supply as well. Turkey, contrary to popular belief, does not have an abundance of fresh water resources and does not have excess water capacity, although it does have more water resources than its neighbors.

As per the data provided by the State Hydraulic Works of Turkey for 2005, Turkey's total operating surface and groundwater resources are 112 billion m³, including 98 billion m³ of surface waters and 14 billion m³ of groundwater. (Düzen, 2013, November). Throughout the year, freshwater is accessible. The yearly inflow is projected to be over 44 billion m³, with 74 percent going to agricultural, 15 percent to residential usage, and 11 percent to commercial models. Water, in addition to its importance to economic development, has a variety of other uses (Croitoru, 2016).

Population development and environmental factors such as climate change, according to DS (2015), are projected to decrease water supply from 1519 m³ per capita today to 1120 m³ by 2050. . In addition, water pollution (e.g. by untreated industrial wastewater discharge in rivers) could induce a significant reduction in water quality. Lakes, wetlands, coastal areas, and other associated habitats offer a diverse range of services. Water supplies are unevenly dispersed in time and space. Turkey's water supplies are spread unevenly throughout the country due to high differences in topography and



climate. The heavily urbanised and populated western portion of Turkey has little water supply. Furthermore, recent studies show that Turkey will become hotter in the near future.

The GAP is a huge, well-planned development project in Turkey's Euphrates and Tigris river basins, which account for over 30% of total surface runoff in Turkey, making it the country's most ambitious development project to date. The "South-eastern Anatolia" region is made up of six provinces that encompass 9.5 percent of Turkey's total geographical area and is bordered to the south by Syria and to the east by Iraq. The project includes territory near the Syrian border as well as the lowlands between the Euphrates and Tigris rivers. As a result, the GAP may be able to irrigate 1,641,000 hectares (about 30 percent of all irrigated land, as well as 43 percent of all anticipated power from all such projects) (Kolars & Mitchell, 1991, 2,* GAP 1990, Vol. 2, 2.2).

Dams, hydroelectric power plants, irrigation projects, and infrastructure will all be part of the GAP, which will support not only agriculture but also other economic and social quality-of-life improvements like urban development, transportation, nonfarm employment opportunities, and improved education and health services. Because the GAP will result in economic, social, and geographical changes once energy and irrigation projects are operational, the Turkish government views it as a complete "irrigated region development project" (Inan, March 1990, 4 ; Kolars & Mitchell, 1991, 19) The GAP's performance will decide the economic future of south-eastern Turkey, as well as the country's future energy supply and economic security. As the GAP development project grows over the next decade, energy and agricultural output will surge if all goes according to plan.

IRAQ'S STANCE

Water is more valuable to Iraq than oil. The Iraqi government is doing everything possible to deal with this dire situation and provide water to its citizens, but, like in other administrative regions, they have failed to demonstrate their competence, and the matter remains unsolved as of now.

Three decades of war, civil strife, sanctions, and infrastructure negligence – along with scarce environmental resources – have wreaked havoc.– have jeopardized Iraq's water supply system . With Iraq's current population rise and, resulting rise in food demand, the government devised agricultural policies aimed at achieving self-sufficiency. As a result, the agriculture sector grew to become the strongest.



Iraq is entirely reliant on the rivers Tigris and Euphrates. These rivers are the country's largest water supplies, with basins covering a total area of 705,500 square kilometers. They are generated from the Eastern Turkey's highlands.

Iraq's current water availability is estimated to be 2,400 m³ per person per year. Iraqis have better access to water than their neighbors, with the exception of Turkey. Due to the destruction of essential infrastructure as a result of conflicts and a lack of capital expenditures, many Iraqis have been deprived of access to clean water and basic sanitary services.

SYRIA'S STANCE

There are 14 governorates in Syria. Syria already has a water deficit in its national water balance. The entire water use of 17,669 Mm³ exceeds the renewable water resources of 15,208 Mm³. In 2004, there was a water deficit of 2,461 Mm³, or 14% of total water use. In 2001, river basins with a water shortage were home to 59 percent of the population and 61 percent of the irrigated land.

The entire yearly regulated water resources of Syria are estimated to be at 14218 million cubic meters (MCM), while total annual usage is around 17566 MCM, resulting in a 3348 MCM water shortfall. Syria's population was about 19.9 million people at the end of 2008, and actual domestic water output was 1183 MCM. 17 As a result, per capita annual water usage is 59.45 m³.

RESOLUTION OF CONFLICT

The river has been a source of political conflict as Turkey, Syria, and Iraq battle over the river's resources for agricultural and hydroelectric power development. The river's water input has been substantially decreased due to the installation of dams. The Southeast Anatolia project in Turkey will see 22 dams and 19 power units built. The volume of water flowing into Syria and Iraq would be considerably reduced as a result of these megaprojects. Dams in Turkey block the optimal utilization of water quality, while Syria consumes much too much water from the river. Turkey has been threatened with military action by Syria and Iraq if it raises its water withdrawals from the river.

Turkey and Syria share a 900-kilometer (560-mile) border. These two neighboring countries are tied in traditional, cultural and religious ties with each other but they have strained diplomatic relationship due to intense water disputes, the turkey's annexation of the Hatay Province, and also because Syria has a history of allowing anti-Turkish



activities from Syrian-controlled territory in Lebanon's Bekaa Valley (including by Armenian, Marxist, and Kurdish political groups).

Due to strong political, economic, commercial, social, and cultural connections, Turkish-Iraqi relations have been largely positive. The two nations have a shared history and numerous ties. However, there are issues in the bilateral relationship. Apart from water disputes, tensions between the two nations have arisen over the PKK problem. The presence of PKK fighters in various sections of Iraqi territory is Turkey's major worry in its ties with Iraq. Turkey wants to put an end to PKK assaults in Iraq. The Iraqi government, on the other hand, is concerned about Turkish military actions within its borders. The Turkish ambassador to Baghdad has been called many times by the central Iraqi administration.

The Iraqi-Syrian border is a 599-kilometer long border. Long-standing cultural and political ties, as well as a history of regional competition, characterize their relationship. Their political ties have been tumultuous at times. Iraqi politicians have aspired to unite the two nations since King Faisal ascended to the throne in the early 1920s. Even during the improvement in Iraqi-Syrian ties during Saddam Hussein's final years in power, the two nations' relations were strained. The establishment of new diplomatic relations between Iraq and Syria in November 2006 was welcomed as the start of a new era of close collaboration between the two countries.

It is inevitable for Turkey, Syria and Iraq to start a new beginning by resolving their territorial and political disputes as it is a common saying that we can change our friends but we cannot change our neighbors. Religious, cultural and territorial bonding among these nations demand the smooth resolution of conflicts.

These states signed number of agreements to resolve the water disputes.



Year:	Treaty Name:	Parties:	Provisions Regarding Tigris and Euphrates Use:
1920	Convention of 23 December 1920	Britain (Iraq), France (Syria)	"Any plans for irrigation in Syria that might diminish 'in any considerable degree' the flow of the Tigris or Euphrates were to be examined by a commission nominated by the two governments." ¹¹⁸
1921	Agreement of 20 October 1921	Turkey, France (Syria)	"The city of Aleppo may organize, at its own expense, a water-supply from the Euphrates in Turkish territory in order to meet the requirements of the district." ¹¹⁹
1923	Treaty of Lausanne	Turkey, Britain (Iraq)	"Turkey should confer with Iraq before beginning any activities that may alter the flow of the Euphrates' (Bakour and Kolars 1994: 139)." ¹²⁰
1926	Friendship and Neighborly Relations Convention	Turkey, France (Syria)	Required Turkey to increase the flow of the Koveik river or authorize off-take of Euphrates flow to satisfy the needs of irrigated areas around Aleppo within Syria. ¹²¹ Also mandates that "water disputes would be resolved 'on the basis of complete equality.'" ¹²²
1930	French-Turkish Protocol	Turkey, France (Syria)	Established the Commission on the Demarcation of the Turco-Syrian Frontier. ¹²³ Affirmed previous agreements and committed the two states to coordinate any planned utilization of Euphrates water. ¹²⁴
1946	Treaty of Friendship and Good Neighborly Relations	Turkey, Iraq	Delineates rights and responsibilities of both states regarding Tigris and Euphrates water. Turkey would begin monitoring the rivers and share data. Turkey would report to Iraq on any plans to develop Euphrates and Tigris waters, allowed for separate negotiations. Iraq could construct dams within Turkish territory for flood prevention (construction cost born by Iraq, maintenance costs shared). Established that most suitable dam sites for flood prevention were in Turkey. ¹²⁵

Table 1: Water-related Treaties of 1918-1960

Source: Wasinger, C. E. (2015). *Peace Be Dammed? Water Power and Water Politics in the Tigris-Euphrates Basin.*



After 1947 there are very minimal forms of collaboration and agreements in place when it comes to regional water cooperation. There are no comprehensive trans boundary agreements or treaties that might assist manage potentially incompatible riparian rights. Political instability and incompetence have plagued the Euphrates–Tigris region for decades.

The ties between the co-riparian nations significantly improved in the late 1990s and early 2000s. Water policy evolved from antagonistic to cooperative thanks to politicians at the highest levels of decision-making. Syria announced its desire to restart Joint Technical Committee meetings in 1998, after a failed effort in 1983(<https://climate-diplomacy.org/case-studies/turkey-syria-and-iraq-conflict-over-euphrates-tigris>).

It is important for the three nations to follow the protocols, suggestions and to honor their commitments.

River basin groups or technical water committees that might be used as venues for resolving water disputes should be promoted to resolve the conflicts in this region.



REFERENCES

- Adamo, N. A.-A. (2020). How dams can affect freshwater issues in the Euphrates-Tigris basins. . *Journal of Earth Sciences and Geotechnical Engineering* ,V , 10(1), 15-48.
- Bari, S. (2016, 07 17). The water crises in Turkey, Syria and Iraq. *Pakistan Today*.
- Beschorner, N. (1992). *Water and instability in the Middle East: an analysis of environmental, economic and political factors influencing water management and water disputes in the Jordan and Nile basins*. International Institute for Strategic Studies.
- Boretti, A. &. (2019). *Reassessing the projections of the world water development report*. NPJ Clean Water.
- Croitoru, L. X. (2016). *Naturacapital accounting: valuing water resources in Turkey-a methodological overview and case study*. Washington DC: World Bank.
- Dohrmann, M. &. (2014). The impact of hydro-politics on the relations of Turkey, Iraq, and Syria. . *The Middle East Journal*, 68(4), 567-583.
- Drysdale, A. (1992). (Book Review). (1992). Ba'th v. Ba'th: The Conflict between Syria and Iraq, 1968-1989 by Eberhard Kienle . *Middle East Journal*, 46(4), , 690.
- Düzen, H. &.-7. (2013, November). Sustainable development of water resources in Turkey. *Seventeenth International Water Technology Conference IWTC17, Istanbul, Turkey* . Istanbul: IWTC17.
- Hillel, D. (. (1994). *Rivers of Eden: The struggle for water and the quest for peace in the Middle East*. . Oxford University Press.
- Klare, M. T. (2003). *Resource wars: the new landscape of global conflicts*. New York: Henry Holt and company.
- Michael, G. (2003). *Resource Wars: the new landscape of global conflict*. Holt Paperbacks; First edition .
- The Euphrates and Tigris River Basins*. (n.d.). Retrieved from <https://ohiostate.pressbooks.pub/etwr/front-matter/introduction/>