

# Dispute over Water Resource Management—Iraq and Turkey

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Received 8 June 2016; accepted 4 July 2016; published 8 July 2016

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## Abstract

As a downstream region, Iraq was ranked among the richest Middle Eastern countries with regards to water resources. The world witnessed the emergence of a magnificent ancient civilization that largely relied on agriculture with extraordinary irrigation systems. However, during the last decade, Iraq began to suffer dramatically from inadequate water shares, desertification, and several other environmental issues due to the absence of proper resource management and, not least, various political conflicts. Numerous global water wars, particularly ones involving developing countries, reflect the importance of water shares and potential demand for water. Iraq, Turkey, and Syria, riparian watercourse countries, have engaged in a long-term water dispute that continues to yield no end through mutual agreement. This present work highlights the major events of this dispute, evaluates the causes and current water challenges, and provides a comprehensive solution through the establishment of the Iraqi Water Security Council.

## Keywords

Water Policy, Water Dispute, Iraq Water Resource Management, Euphrates and Tigris

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## 1. Introduction

By 2025, 1.8 billion people could suffer from water scarcity, and two-thirds of the world population could suffer water insecurity [1]. 60% of international water basins have no formal agreement to ensure equitable shares [2].

Iraq currently faces a significant threat of water shortages due to internal and external challenges that include poor water resource management, internal political conflicts, and unstable relationships with neighboring countries, namely Turkey, Iran and Syria. A water shortage could severely damage the Iraqi economy through various national sectors ranging from agriculture to public health. Moreover, it could pose unforeseen environmental issues. In this context, water becomes a key factor in the creation of either peace or conflict; hence, Iraq must

prioritize the development of robust hydro-policies in order to mitigate risks.

Iraq and Syria are both downstream countries (**Figure 1**). Iraq is largely depending on the Euphrates and Tigris Rivers for their water supplies. 90% of the water flow from the Euphrates and 50% from the Tigris originate in Turkey [3]. Iraq and Turkey have a long history of water disputes that dates back to the 1920s after the collapse of the Ottoman Empire. Iraq, Syria and Turkey emerged as independent states sharing rivers, which created an environment for potential conflict. The three countries signed their first agreement in 1926, but Turkey ignored its obligations under the agreement at the time. Iraq and Turkey inked another treaty when Iraq's King Faisal II and Turkey's president Ismet Inonu signed the treaty of friendship and neighborly relations in 1946. The two countries neglected its implementation. By the 1960s, demand for water resources within Iraq, Syria and Turkey had dramatically increased, since their populations had doubled. These conditions warned of significant water resource shortages and marked the beginning of the arbitration process. **Table 1** lays out the major events in chronological order.

## 2. Statement of the Problem

Based on [4] and [5], Iraq receiving only 40% of its demands from surface water. As a downstream country, more than 90% from the water surface is supplied by neighbor countries (~80% from Turkey), and the average of annual precipitation is ~150 mm with high rates of evaporation as a semi-arid region. More than half of the precipitations provided from outside of the country's border, within the last decade 1/3 from the two major Rivers have been fallen with expectation of further drops in the near future. Many of farmers lose their jobs where 36% of the local economy rely on agriculture. Not least the reduction of the water supply makes the country lose ~20% from the power plant and hydroelectric sector.

Essentially, there are two types of challenges surrounding the water dispute: external and internal. Climate change, international development laws, and the well-known GAP project represent the former, while inadequate water management, political instability, lack of local policies, and an insufficient legal framework represent the latter.

### 2.1. External Challenges

Globally, big concerns exist over climate change and its impact on water resources. Various research efforts have shown that climate change directly influences the hydrological cycle through warming the atmosphere. This warming will significantly alter precipitation patterns in terms of timing, quantity, intensity, and form. This alteration will result in changes to watersheds, water quality, and the allocation of water flow [6].



**Figure 1.** Turkey and downstream countries.

**Table 1.** Chronological major events for water dispute Iraq, Syria and Turkey.

Year	Event	Implications	References
1922	Collapsed Othman empire.	Having independent states (Iraq, Syria and Turkey) sharing rivers to impose a potential conflict.	[8]
1926	First agreement between Iraq-French Syria-Turkey, agreed not to form any change without consulting downstream countries.	Turkey totally ignored and claims that the agreement is irrelevant with current economic and political context.	[8]
1946	Signing the treaty of friendship by King Faisal II and the Turkish president.	Turkey ignored the implementation of this treaty.	[19]
1960s	Iraq, Syria and Turkey duplicate the population.	Water resource demand increased dramatically and starts to emerge as a vital for community development.	[4]
1970	Turkey planning to build dams to control water shares.	Iraq objected to the plans which expect to reduce water flow.	[15]
1975	Turkey start the Southeast Anatolia Project (GAP).	Iraq and Syria criticize the project because it is expected to reduce the water flow 80% and 50% respectively.	[8]
	Syria complete Tabqa dam.	Almost bring Iraq and Syria to a war unless Saudi Arabia and Kuwait helped to pulled them back.	[8]
1980	Iraq and Turkey held a forum to discuss regional water issues.	Establishing the Joint Technical Committee (JTC) as a mechanism to find mutual agreement.	[15]
1983	Syria Join the JTC.	Meetings held by the three countries to discuss further developments.	[15]
1987	Turkey and Syria came to an protocol over water sharing with flow rate 500 cubic m <sup>3</sup> /sec.	Turn to political level since Turkey roll on the table the political collaboration about Kurds. Iraq didn't join them.	[15]
1990	Iraqi-Syrian bilateral agreement.	Still no agreement took place between Iraq-Turkey.	[15]
	Atatürk dam completed, Turkey cut off the Euphrates water to fill the dam. Iraq asked to share 700 cubic m <sup>3</sup> /sec. later on since Atatürk is completed.	Temporary reduced 75% from Euphrates river for both Iraq and Syria, Iraq threat by military attack to demolish the dam, Turkey move their forces to be ready for any conflict and replay by threatening to cut off river flow completely.	[15]
1992	Former Turkish Prime Minister SuleymanDemirel announced: " <i>We do not say we share their oil resources. They cannot say they share our water resources. This is a right of sovereignty. We have the right to do anything we like</i> ".	Turkey received notes of objections from Iraq and Syria with respect to the dam's impacts.	[8]
1996	Iraq and Syria notifies Turkey about construction of the Birecik where Euphrates water level reduced and polluted by Turkish irrigation activities.	Turkey rejects within month the allegation and arguments.	[15]
2009	Turkey moved with GAP project.	Tigris and Euphrates levels fallen by more than two thirds, this led to the infiltration of salt water from the Arabian Gulf into the Shatt Al-Arab River. salt water reached beyond Basrah ruined many Iraqi territories, 30.000 people immigrates northward and UNESCO report estimated 100,000 Iraqis left their communities due to water shortages and warned that these vital lifelines could dry up completely by 2040.	[8]
	World water summit, Iraq reported a potential food security problem and needs at least 500 cubic m <sup>3</sup> /sec.	Turkey promised 400 cubic m <sup>3</sup> /sec. the promise was not fulfilled. Turkey justified a 46% decrease in rainfall over the previous three years.	[8]
2012	Iraq protest lower corps domestic production.	The drying up of Iraq's Southern Marshlands to as a major environmental problem.	[5]
2015	The Ilisu dam expected to be done.	Tigris will decrease about 50% from downstream flows.	[8]
2017	GAP project expected to be done.	70% - 80% from surface water will be reduced.	[4]

**LEGEND:** GAP: Southeast Anatolia Project; JTC: Joint Technical Committee; UNESCO: United Nations Educational, Scientific and Cultural Organization.

Population increases will further confound global worries over water resource scarcity. The international community and the United Nations made huge efforts to draft and pass a law that would address these issues. The UN General Assembly issued a convention in terms of international law of natural resources [7]. The convention has yet to attain binding legal status. Turkey, along with China and Burundi, voted against the resolution. It never attained majority [8]. These incomplete efforts left the door open for individual judgment and interpretations. Turkey took advantage of this gap a couple of years later in 1975 to start a long-term project that entailed building 22 massive dams and 19 hydropower plants across the Tigris-Euphrates River Basin. This project, under the name Güneydogu Anadolu Projesi (GAP), seeks to address burdens resulting from demographic changes. It will ultimately utilize 10% of Turkish lands [9]. Turkey expects to finalize the project by the end of 2017 in hopes of forcing future negotiations to revolve around the actual existence of these dams. The country has succeeded in making quick progress despite criticism for skirting international law and political blowback from Iraq and Syria. On August 17, 2014, the Convention on the Law of the Non-Navigational Uses of International Watercourses entered into force. The General Assembly of the United Nations had adopted it in 1997 [10]. The convention encouraged countries to cooperate and to reach mutual agreements. However, some countries, including Turkey, still have objections to the resolution.

## 2.2. Internal Challenges

Iraq still has a long journey ahead of itself before it achieves proper water resource management; many water shares are wasted either directly to the Gulf or through evaporation due to a lack of irrigation planning and water harvesting. Unfortunately, within the last 50 years, Iraq has not given priority to such a vital issue or at least drawn sufficient attention to it. This is partly due to its past and current involvement in several wars and its focus on oil production to generate national income. However, the absence of competent water resource management is not the only reason for Iraq's unfortunate and vulnerable position. Complex political conditions have led to uncertainty surrounding water policies. Article 110, Paragraph 8 of Iraq's constitution and Article 114, Paragraph 7 serve as examples of the detrimental effect of contradictory policies. The former grants the federal government responsibility over handling water resources coming from outside Iraqi borders, while the latter gives local, provincial governments the authority to formulate internal water resource policies and to regulate usage of water resources [11]. This clear contradiction could lead to internal disputes in the near future on the central government in Baghdad, Where the local politicians could potentially misuse water resources as political tools.

Iraq faces major threats. If the country allows the current situation to continue, severe consequences will arise. These range from environmental disaster to various collateral damages that are briefly, but not exhaustively, listed below:

- Water scarcity: The Euphrates will lose 70% of its water at the conclusion of the GAP project [8]. The country could also fall below the water poverty line, which has been defined as less than 1000 m<sup>3</sup> per year per person [12].
- Food insecurity: The agriculture sector will suffer, leading to food security issues, unproductivity, and increased food-related imports that will keep Iraq dependent on foreign goods.
- Health concerns: Pollution and salinity levels will rise. Gulf waters with high salinity levels will occupy and ruin the waters of Basra, causing a gradual increase in the deaths of various species, including fishes whose populations have already declined by 50% since the 1990s [8].
- Environmental costs: Ensuing environmental crises and the resulting need for landscape rehabilitation will cost the government billions of dollars, which will further burden the national economy.

## 3. Objective

This paper evaluates Iraq-Turkey water resource disputes and recommends a roadmap for fresh negotiations. Moreover, it illustrates the fundamental tools that will lead to the security and sustainability of Iraqi water shares.

## 4. Conflict Evaluation

Iraq accuses Turkey of following a hidden hydro-politics agenda. Conversely, Turkey complains that Iraq's claims are legally unfounded, since the Euphrates and Tigris rivers originate from Turkish soil. The two parties

have failed to reach consensus. Turkey continues with its plans, while Iraq loses time and resources. It is assumed that Turkey aims to accomplish two goals at once. The first is to gain control of the watercourses that belong to Iraq and Syria. The second is to restrict the water shares of those two downstream countries to such a high degree that they continue to depend on Turkey politically. This long-term strategy will bring Turkey advantages. It could help Turkey overcome energy shortages and establish the country as a key player in Middle East politics, a role that the Ottoman Empire lost during the last century.

In 2013, the Economic Commission for Europe's (ECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes entered into force [13]. Iraq recently signed on to this convention in June 2015 [14]. This move could strengthen the legality of Iraq's claims.

Despite all the aforementioned issued, the possibility of a win-win position remains. Achieving this would require the establishment of a healthy negotiating environment and a shift of the prevailing discourse from the political level to a more scientific level.

Turkey has justified its actions through the following arguments:

- Downstream countries have poor management of water resources; most of the freshwater is wasted. These countries will also benefit from the GAP project, which can prevent both floods and water waste.
- About 90% of the Euphrates' total annual flow and 50% of the Tigris' originate on Turkish soil, so Turkey has the right to control the rivers' flows.
- The UN convention has not yet attained binding legal status. Moreover, all natural resource should be shared if the convention is to be literally followed.
- Iraq should have a lower share of the water, since irrigable land within the Euphrates River basin does not exceed 1.95 million hectares [15]. Most of the Euphrates River basin land is infertile, so it is useless to expend water for them.
- Turkey has already proposed to allocate water from the Tigris to the Euphrates for the purpose of alleviating the water shortage, but Iraq rejected this proposal.
- Turkey uses dams for community development, power generation, and management of demographic changes. It has no intention to use them for political motives, and its use of them does not pose a potential threat to downstream countries.

Turkey's arguments appear valid under the assumption that it does not operate with political motives. Turkey has shown legal concerns over water resource management, and Iraq has not adequately managed its water resources. However, many indicators support the hypothesis that Turkey acts with hydro-political motives. An excellent example comes from a 1992 statement by the former Turkish Prime Minister Suleyman Demirel: "We do not say we share their oil resources. They cannot say they share our water resources. This is a right of sovereignty. We have the right to do anything we like" [16]. As another example, in 2010, Syrian president Bashar Al-Assad announced the Tigris River irrigation project, which is based on a 2002 agreement between Iraq and Syria. The current Iraqi government expressed skepticism about the legitimacy of the agreement. It launched official objections against it in order to prevent itself from inheriting the previous government's commitments. The project aims to pump 1.25 billion m<sup>3</sup> of Tigris water just before it flows into Iraqi borders and to channel this water back into Syrian territories for the irrigation of around 200,000 hectares of Hassakah [17]. The project is in cooperation with Turkey and is funded by the Kuwait Fund for Arab Economic Development. Iraq's government voiced serious concerns over the project and issued official objections against Syria and Turkey. It cited detrimental impacts to the environment and reduced water shares as reasons for its objections [4]. Hydro-politics clearly play a fundamental role in determining water use and strategic planning.

## 5. Methodology

This paper proposes the establishment of a national council, under the name Iraqi Water Security Council (IWSC). The function of the IWSC will cover both the external and internal water resource challenges to midget the risk of losing the water shares and implement an adequate water management, moreover, achieving a healthy negotiations environment between Iraq and Turkey. The ultimate goal is to solute the water dispute and pullback the issue from political to scientific level. IWSC should be formed directly under the office of the prime minister and should possess broad authorities in order to avoid bureaucratic obstacles. The majority of its members should have an extensive academic background. In addition, the IWSC should consist of two teams (**Figure 2**).

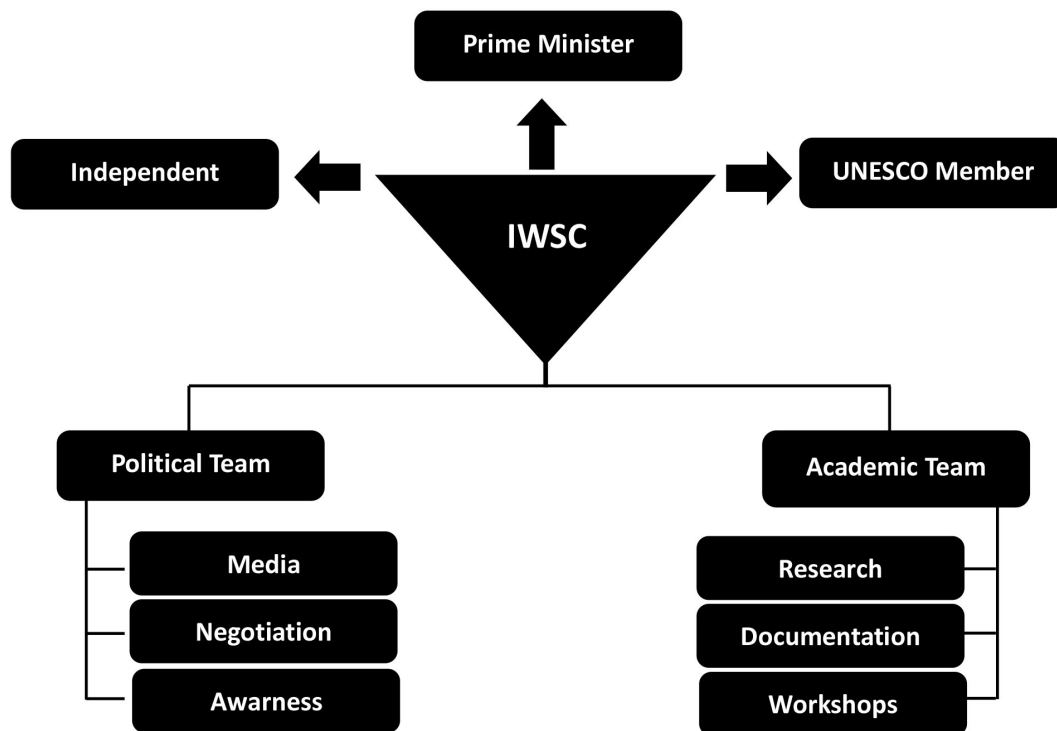


Figure 2. Structure and workforce of IWSC.

### 5.1. Academic Team (Alpha 1)

It will include technocrats that approve of proper water management policies. It will pull back the conflict to a scientific level, which will pose many challenges. The team must convince Turkey that keeping the quantity of water shares on its soil that the GAP project requires would further increase the risk of earthquakes in the already geologically unstable region. This reality poses a big challenge for Turkey's national security. The ultimate objectives for this team will be to:

- Implement an action plan to provide comprehensive technical solutions for realizing both adequate water management and the water shares that Iraq needs.
- Register the IWSC under the UN to gain legal status and to provide periodic reports.
- Organize scientific events, conferences and campaigns that focus on the issue of water scarcity in Iraq in order to attract international support.
- Document the environmental damage related to water resources and estimate the economic value of these damages.

### 5.2. Political Team (Alpha 2)

It will focus on finding common ground with Turkey to create peace and stability in the region. This is crucial for Turkey. Its annual return to investments in Iraq exceeds 12 billion USD, and it has huge, potential investments on the horizon [18]. Moreover, the team will work to convince the international community represented by the UN to enforce relevant international laws and to accept Iraq's rights to water shares based on ancestral irrigation patterns. It will aim to bring Turkey back to the negotiating table and to secure a beneficial result for both sides through the following stages:

- Stage 1: Formation of a joint technical committee with an outside, independent party to act as a fact-finding body that collects hydrological data for Iraq and Turkey, and potentially for Syria in the future. This paper highly recommends UNESCO as a potential independent party.
- Stage 2: Data integration and evaluation to understand the demand potential of the Euphrates and Tigris Rivers and the demands of Iraq and Turkey. Data should be exchanged with the independent, third party and updated regularly.

- Stage 3: Implementation of a sharing formula that allocates 1/3 of the water resources to Iraq, Syria and Turkey. In the case that a country's water usage exceeds its share, then this excess will be deducted from its future share.

Unlike the Alpha 2 team, the Alpha 1 team should source from a dynamic workforce that takes a multi-task perspective in order to achieve efficient results. However, an overlap in responsibilities and tasks between both teams is expected, and the inclusion of independent expatriates as consultants could add value towards more academically inclined outcomes.

## 6. Conclusions

At this point, the issue of water resources is no longer limited to public concern or politics. It has now turned into a major threat for Iraqi national security. ISIS's threats to demolish the Mosul and Haditha Dams in order to compromise Baghdad and current technical concerns surrounding Mosul Dam that could lead to natural disaster serve as examples of this. Unfortunately, Iraq is slowly working to find an outlet as time passes and Turkey's GAP project approaches its completion deadline of two years from now. Negotiations will become much more difficult once this project reaches completion. Therefore, the initiation of a comprehensive task force plan meets a national demand to protect Iraqi water shares from any threats and to restore them to a level that meets Iraq's needs.

To summarize, Turkey's push to build dams and hydropower plants through the GAP project represents a good initiative assuming an actual aim of water management. This water issue need not end badly. Rather, it can serve as a springboard for long-term cooperation between Iraq and Turkey. Realistically, Iraq possesses less political influence over efforts to find a sustainable solution. The establishment of a National Water Security Council with the objective of bringing negotiations back to a scientific level as the climate change debate drives countries to manage their resources responsibly can address this imbalance of political power.

## Acknowledgements

To the young leaders program that been hosted by American University of Sharjah—UAE sponsored by Crescent Petroleum company, special thanks goes to Prof. Dr. Yass Alkafaji and Dr. Luay Al-Khatteeb for opportunity and motivation, Mr. Jafar D. Jafar for generous sponsoring this innovative program, the young leaders colleagues for inspiration, breeding hope and the fruitful discussion.

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