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The Politics of Iraq's Waterscape: 1920-2024

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Abstract
Iraq and the Kurdistan Region of Iraq (KRI), historically a landscape with abundant water resources, has undergone significant geopolitical changes over the last century. Today, the country must find solutions for extreme water shortages. Dukan Dam serves as an example of how hegemonic and hierarchical effects from recent history have influenced water governance. While population growth and climate change along with unilateral water resource activities undertaken by neighboring states are exacerbating water shortages for Iraq and the KRI, it is important to analyze the internal waterscape and how it is managed. In this article, I focus on the period from 1920 to 2024 in Iraq to shed light on problems of governance strains pertaining to water. To achieve Sustainable Development Goal 6: Clean Water and Sanitation, Iraq must reckon with its past to ensure a sustainable future for generations to come.

Policy Recommendations

- Ensure justice for communities in national water policy by addressing the historical inequities in water distribution, recognizing that while the dam provided flood protection and economic benefits for agriculture and oil, many people within Iraq's borders have experienced inadequate water services. Policies should correct these disparities by guaranteeing equitable access to water resources and acknowledging all stakeholders, including ecological thresholds.
- Implement inclusive and transparent water governance practices that create meaningful mechanisms for community participation. These measures are essential to realizing water justice for civilians and ensuring that the gains of water infrastructure are shared rather than concentrated.

KEYWORDS

inclusive society
water
governance
Dukan Dam
sustainable development

WATER VALUES

< Fig. 1 A small inlet of Dukan Lake in summertime (Source: Meg John, 2022).

Introduction

The Tigris and Euphrates Rivers have given life to a multitude of civilizations with a long history of water management. The Land Between Two Rivers – Mesopotamia – and, today, in part, present-day Iraq, is home to ancient cities such as Mosul, Baghdad and Basra; cities shaped in part by the Tigris-Euphrates basin. The Kurdistan region, in the north, is threaded by five large rivers, two of which, the Upper and Lower Zab (also referred to as Lesser Zab), flow into the Tigris River of which the Lower Zab was dramatically transformed when Dukan Dam was built. Iraq, a place with fertile, arable land, cultural diversity, abundant water sources and the globally favored resource, oil, is now facing the hard truth that the Tigris and Euphrates are drying up, making urgent the need to address water scarcity in Iraq (Rodgers 2023).

The significant pressures of population, climate change and regional politics intensify the complexities of Iraq's internal water governance. Water scarcity occurs at a time when the country's population is at an all-time high. In 1920, the population hovered around 3 million. By 1970, it had reached 10 million and, by 2017, 40 million (Statista 2019).

Iraq is also among the countries most heavily impacted by climate change. From 2000 to 2023, the International Energy Agency reported that Iraq experienced a 0.48°C temperature increase per decade, well above the global average of 0.37 °C (IEA 2025).

A third significant pressure involves regional geopolitics. To secure its own national resources, Türkiye has been developing mega-dams along the Tigris and Euphrates, whose headwaters originate within its borders (Domalain 2022). The dams have reduced the amount of water reaching Iraq, which represents a significant problem since the two rivers provide most of Iraq's water. While negotiation has occasionally resulted in seasonal releases of water, Iraq's dependence on Türkiye results in a precarious situation (Marcellin et al. 2024).

These three pressures – population growth, climate change and unilateral upstream water developments – are not the only challenges facing water management in Iraq. As of the writing of this article, the Iraqi government has yet to publish and implement a comprehensive and transparent water strategy that incorporates efforts to mitigate these pressures. An effective strategy would facilitate mobilization and action in water governance and could also open the door for more explorative discussion on how Iraq's water heritage might offer integral pathways for sectoral development. Reconciling how power, positions of authority and financial resources have affected water governance over the last 100 years is essential to understand why such a strategy remains elusive. This brief article begins this exploration.

A Brief History of Water Governance in Iraq

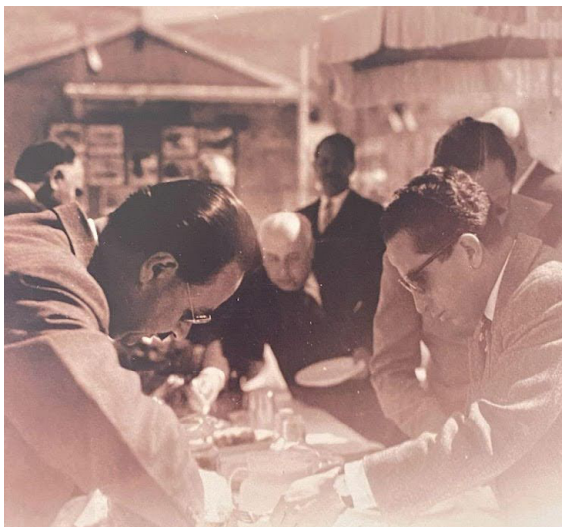
Over the last 100 years, Iraqi leadership contributed to the universal development of centralized hydropower by creating Dukan Dam (and later Mosul Dam). It is not to say that centralizing water engineering was unprecedented in Iraq. On the contrary, engineered water solutions have existed since antiquity, such as advanced canal systems built between the Euphrates and Tigris to irrigate otherwise arid land. These systems were vital to ancient civilizations and made previously inhospitable land fertile (Adamo and Al-Ansari 2020). Yet developments over the past 100 years have reinforced power dynamics that hinder com-

^ Fig. 2 Hazy overview of Dukan Lake from afar, formed by the creation of Dukan Dam (Source: Meg John, 2022).

prehensive water governance. One challenge of centralized water engineering is that discussions about waterscapes often become limited to technical narratives, obscuring the socio-political landscapes, cultural heritage, and power relations at stake.

After World War I and with the fall of the Ottoman Empire which had loosely administered the region since the early sixteenth century, the British played a major role in developing Iraq's civilian administration, formally established in 1920 but sustained by British martial law. Iraqi elites, including Iraq's first king, were propped up with British support. These internationally and locally supported figures did not necessarily consolidate power through unified or structured processes; instead, a set of independent power networks gradually formed a "fractured elite" with diverse actors operating under an ambiguous Iraqi national label. This produced an elite capable of facilitating international cooperation but challenged in its ability to secure local cooperation for nation-building.

The historical pattern of shifting power, authority and resource control that has characterized the history of the region has greatly impeded the development of effective water management. What distinguishes power shifts in Iraq is that the idea of a unified Iraq has become synonymous with an exclusive Iraq – producing extreme winners and extreme losers in the struggle for power. Regulation and policy have rarely been neutral tools for national development; instead, political acts often served individuals seeking to maintain their position and access to resources. Trust, cooperation and long-term planning often clashed with short-term ambitions.



^ Fig. 3 King Faisal II visits Dukan Dam site in 1957 (Source: Unknown; reproduced by Meg John, courtesy of Dukan Dam Office and Director Kochar Jamal).

The Case of Dukan Dam

Dukan Dam was the first large hydropower dam in Iraq. Initiated in 1952 and becoming operational by 1979, the project was instigated by both British and Iraqi leadership. As interviewee 9 explained:

> The kingdom, […] had a UK consultancy. [The British] asked Iraq to build dams across the big rivers in Kurdistan. […] Iraq signed the agreement and with their teams went to take a look at the rivers. After that, Iraq asked them to find the best companies to hire for the design and construction of the dam. Only the money was provided by Iraq, everything else was done by the UK representatives in Iraq.

Iraqi leadership of the time hired the British engineering company Binnie & Partners, led by renowned engineer Geoffrey Binney, to design it. The British encouraged King Faisal to build a dam to irrigate Kirkuk, which Interviewee 9 noted had 1,000,500 dunams[1] of arable land at the time, with the dual ambition of also alleviating flood impacts.

Being able to finance such a project also signaled a new form of centralized governance and control over resources (Klaas 2022). However, Iraq's monarchy soon fell as a result of several coups, further indicating persistent power struggles. Nevertheless, the dam project was completed in 1979. Coincidentally, Saddam Hussein became president that same year, when the Dukan Dam began producing hydroelectricity. The top-down approach to water governance soon became systematically entrenched.

This centralized approach to water resources notably makes absent from this history the ways in which local communities were consulted or affected. As Iraq grapples with current water challenges, it is paramount to examine the changes that have occurred in Iraq's waterscape in order to imagine future pathways. Interviewee 9 described the pre-dam waterscape:

> Every village […] had their own resources of water. Water was everywhere. Every village of Kurdistan, even Sulaymaniyah, didn't require water from Dukan. The water quality in the villages was much better than the water in the rivers because the water was obtained from underground, and it was very clean. Women would carry water in cans to their homes and use the water in a very efficient way because they knew that if the water was gone, they had to go back to the well to bring more water. But when we are talk-

1. A dunam (or *dönüm*, *dunum*) is a unit of land equivalent to 1,000 m². See "Dunam," https://www.convertunits.com/info/dunam.

> ing about the rivers – they [villagers] weren't close to the rivers because they were afraid that the rivers would flood. When they built dams in Iraq, the problem was not storing water, it was the floods. Dukan Dam was for Kirkuk.

Interviewee 9's account suggests that water management before the dam was intimate, small scale and based on groundwater use, with women playing a central role. Large scale infrastructure altered these relationships, yet such social transformations are often understudied. Understanding these histories can guide more socially nuanced and inclusive water strategies today.

Dukan was built in a specific and suitable geologic location. The location best suited for Dukan Dam happened to be in an area predominantly inhabited by Kurdish communities. As Kurdish communities and the broader concept of nation state Iraq had not solidified a sense of unity or shared identity, a dam that was

^ Fig. 4 Stages of dam construction and its joint blocks (top left); gated spillway construction (top right); irrigation tunnels and valves (bottom left); dam area before preparation (bottom right) (Source: Unknown; reproduced by Meg John, courtesy of Dukan Dam Office and Director Kochar Jamal).

^ Fig. 5 A 1958 photograph in the Dukan Dam office, showing builders of the dam, which looms in the background. British, Arab Iraqi and Kurdish men are all present. (Source: Unknown, reproduced by Meg John; courtesy of Dukan Dam Office and Director Kochar Jamal).

built amidst Kurdish communities servicing the greater Iraq, put into question what water resource collaboration means in the region. Thirteen years after Dukan Dam became operational, the Kurdistan region of Iraq formed and legitimized the Kurdistan Regional Government which meant the government was semi-autonomous.

Today, Dukan Dam is governed by Baghdad but managed daily by the Kurdistan Regional Government. While not a source of overt political conflict, decisions on water allocation and strategy are often driven by short-term needs rather than long-term planning and vision. This will become increasingly critical as droughts intensify in both Kurdistan and Iraq. As water resources grow scarcer, pressure on decision-makers regarding how water is released from the reservoir will likely increase.

Maintaining minimum flows, which are essential for ecological health and for the dam's functionality, is not clearly mandated or enforced. Furthermore, when communities are excluded from the decision-making process, the implications of water-release decisions become far less clear. At the same time, those who are not dam experts may not fully understand the consequences of releasing too much water, even when political pressure demands it. These dynamics create difficult circumstances for effective planning and management.

Conclusion

Centralizing and scaling water resources has been a common pathway for nation building. The hierarchical and hegemonic structures that made Dukan Dam possible illuminate one way in which power was consolidated through water resources, in parallel with the consolidation of financial resources needed to build a large hydropower dam. We saw this first with the colonial forces (the British), who sought to use the rivers and their power for enhanced economic trade, followed by Iraq's monarchs who oversaw Dukan Dam's development.

Reviewing water governance and management beyond a centralized approach requires examining political and hydrological evolutions over time and confronting the power structures that shaped them. Moving forward, Iraq's waterscape has already been transformed by large dams and must realistically be worked with rather than removed in the near future. However, lessons from the history of water governance in the region remain essential, especially for understanding how to engage communities, heritage practices, and local contexts more fully in order to do justice to people's lived experiences.

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