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Iraq's Fleeting Water Resources: Providing for Rural Southern Populations and Iraq's Political, Economic, and Agricultural Complexities

The status of a country as developing or developed is often considered detrimental to the analysis and understanding of said country. However, for the state of Iraq, this status remains undetermined even among its own inhabitants. Iraq has a population of 47.5 million individuals as of 2025 (*Croatia Population Growth Rate 1950-2024*, 2024) and is growing rapidly at 2.21%, consisting of ~33 million urban dwellers and ~14 million rural inhabitants (TII Team, 2025). While Iraq ranks 63rd out of 123 countries in the 2025 Global Hunger Index and holds a severe food insecurity rate of 2%, 34% of Iraqi households are experiencing moderate food insecurity (*Republic of Iraq Country Strategy Note Main Report and Appendices*, 2024). This means that over 1 in 3 Iraqi families struggle to consistently access sufficient food. This is of special concern when recognizing the national poverty rate of 24.8%, which in some governorates, such as Dhi Qar, exceeds 50% (*Iraq | World Food Programme*, 2019). But Iraq's food insecurity is not just a direct reflection of the lack of agricultural provision the population has received; rather, it is better reflected by its water supply crisis. Iraq's water reserves do not exceed 20 billion cubic meters, yet the country's total water consumption, for agricultural, industrial, and household use, stands at approximately 48 billion cubic meters, far surpassing available reserves. This results in a deficit of more than 100%, meaning the country is consuming over twice the water resources it has (News, 2025).

With a population consisting of Arabs, Kurds, Turkmen, Assyrians and Chaldean Christians, Yazidis, Shabaks, and Marsh Arabs/Ma'dan, Iraq's diversity has been a historical source of social and cultural contributions, as well as political competition (*2.3 Ethnic and Religious Minorities*, 2025). In fact, this cultural tension is so significant that even the perceived Federal Parliamentary Republic structure of the Iraqi government has largely been abandoned to favor an informal arrangement called Muhasasa Ta'ifia (Sectarian Apportionment). This is a system of political power-sharing, introduced in 2005 during the US occupation of Iraq, to ensure a fair allocation of governing powers for each of Iraq's main ethno-religious groups. Thus, resulting in the reservation of the Prime Minister role for a Shia Muslim, the Presidency for a Kurd, and the Speaker of Parliament for a Sunni Arab (*Muhasasa - RAIA*, 2022). However, a key characteristic of Iraqi politics is the Iranian dimension within the system, which largely sways ethnic considerations and thus the provision of governmental resources and economic stimulation. Iran's strong involvement in Iraqi politics, of course, is nothing new, with Iranian intelligence cables leaking information about the bribery and espionage that took place between Iran's Revolutionary Guard and the Iraqi system. In fact, this involvement in Iranian politics has been of such significance that the very function of the implemented Muhasasa system is to place a Shia Arab in true political power due to the excellent terms of relation that Iran shares with the Shia parties that dominate the system (Sharaf, n.d.).

What makes this political structure and standing of Iraq critical to the service of its people is the relation between the cultivation of its land, economic trade, and replenishment of water supply alongside its economic dependency and political structure. Currently, 4.9 million hectares of Iraq are arable, half of which are irrigated; 3.9 million hectares are permanent pasture and meadows, and 490,000 hectares are dedicated to tree crops such as date palms. However, only about 20% of farmers have access to fully functioning irrigation infrastructure, leading others to lean towards traditional surface irrigation, which is practiced on more than 80% of irrigated land, despite its severe effects on salinization (salt accumulation reduces soil fertility) and water loss (*Republic of Iraq Country Strategy Note Main Report and Appendices*, 2024). Unfortunately, this salinity has affected 75% of central and southern Iraq's irrigated land, the very heart of its agricultural zone, with readings in central Basra province in September 2025 reaching nearly 29,000 parts per million (ppm), compared to 2,600 ppm in 2024 (Lasker, 2025). This increased salinity and desertification of Iraq's critical agricultural landscapes is disastrous when combined with the lack of adequate water supply. And, when further analyzing Iraq's major crops and exports consisting of wheat, barley, dates, vegetables (tomatoes, cucumbers. eggplant, onions), fruits (grapes, pomegranates, citrus, figs), and livestock (sheep, cattle, buffalo), a stark contrast between the agricultural industries contribution to the national GDP of 20% before 2003 to merely 3.3% today, showcases the significant extent to which this disastrous relation has overcome the country. What bridges the political and economic side of Iraq, however, is the dependence the country has on its access to water supplies and the benefits of its agricultural production.

Around 70% of the water in the Tigris and Euphrates that reaches Iraq originates in Turkey, 10-15% comes from Iran, and only 10-15% of the water really originates inside Iraq itself (*Strengthening Iraq-Türkiye Ties amid Regional Tensions | International Crisis Group*, 2025). See, this distribution seems relatively significant in considering the distribution of water supplies between the countries, but rises in importance when acknowledging the construction of Turkey's great dam system, the GAP project which is comprised of 22 dams and 19 hydroelectric plants on the Tigris and Euphrates, which allows the country to regulate exactly how much water flows downstream- or in other words, how much more water could be provided to Iraq. There are no binding international treaties obligating Turkey to release any minimum quantity, so Iraq has no legal recourse when Turkey reduces flow at its pleasure (*Strengthening Iraq-Türkiye Ties amid Regional Tensions | International Crisis Group*, 2025). To this, Iraq's economic dependency is created through the utilization of the Oil-for-Water deal agreed upon in November 2025. This agreement deepened this structural relationship significantly by opening Iraq's water, electricity, and agricultural infrastructure to Turkish capital and companies, creating a "finance for access" model that reduces Baghdad's economic autonomy (Derya Göçer & Meliha Altunışık, 2026). Beyond water, Iraq is captured by Iran through electricity and gas production. Iraq imports only 3% of its electricity demand directly from Iran, but roughly one-third of its total power generation relies on Iranian gas. In practical terms, without Iranian gas, a third of Iraq's power plants stop running, devastating agriculture, which depends on electric pumps for irrigation (*Make Iraq Independent of Iranian Energy*, 2025). Furthermore, Iraq's electricity grid requires at least 50,000 megawatts to function efficiently during peak summer months, but the country operates far below this threshold, as Iran knows. This leads to a vulnerable relationship that utilizes supply interruptions against Iraq, ready for political pressure and thus control.

And, just as things seemed to get worse, Iraq's own agricultural production was rejected by its society when compared to higher-quality and cheaper produce from Turkey (Shatha Editor, 2024).

What's worse is that Iraq's agricultural production is largely characterized by smallholder farmers operating family farms with low productivity and relying on traditional farming methods. Northern rain-fed farms (Kurdistan, Nineveh, Erbil, Dohuk, Sulaymaniyah) average just about 10 to 30 hectares, while Southern and Central irrigated farms (Tigris-Euphrates Valley) average just 1 to 2.5 hectares (*CRS Report for Congress Iraq Agriculture and Food Supply: Background and Issues*, n.d.). In fact, 35% of total farmers hold under 4 hectares nationally, 34% between 7.6-12.5 hectares, and in some governorates such as Muthanna (One of the poorest southern governorates), smallholding farmers account for 60% of the total farming population (East & Africa, 2017). Iraq is sitting on one of civilization's oldest agricultural landscapes, the historical birthplace of farming, and yet the country is facing rapid losses in its agricultural production, more than any other country comparatively, due to water salinity, mismanagement, and political failure to invest in the agricultural sector.

These factors have significantly impacted farming families in Iraq. With increasing rural needs but a lack of adequate water supply due to economic dependence, drought, political and ethnic tensions, and improper cultivation of agricultural lands, many farmers and their families have opted for climate migration (Schwartzstein, 2023). While some farmers were able to safely migrate towards desired urban areas, often abandoning their agricultural skills for more profitable skill sets, others were quickly recruited towards ethical divisions in the Iraqi landscape, increasing tensions and pressure upon the agricultural sector (Schwartzstein, 2023). The fact is that these individuals depend on water for their occupations: fishermen, buffalo herders, shepherds, farmers; all of these roads lead back to the fact that the state must provide a means of water supply. Even these other skill sets collected by farmers are simply creative innovations placed into application, and while education is largely available and prominent in urban areas of Iraq, these rural marshlands have largely lost their education systems after decades of war, sanctions, occupation, and governance failure (*Iraq Education: Iraq Primary School – Secondary School – Degrees*, 2014). Overall, the marshes face a compound crisis: upstream damming on the Tigris and Euphrates, chronic drought cycles, political drainage in the past, rising salinity, and climate change. Droughts are intensifying, salinity levels are rising, and farmers are struggling to irrigate and sustain their fields with traditional methods. By September 2025, more than 85,500 people have been displaced due to land degradation, water scarcity, and rising river salinity (Mahmoud, 2025).

This crisis is still going on, and if anything, has only increased in severity. While rainfall beginning in autumn 2025 and into April 2026, the longest wet season in at least four decades, has restored large sections of Hawizeh Marsh, experts caution that this does not resolve the structural, long-term water crisis. National water reserves have already dropped to an 80-year low of approximately 4 billion cubic meters, contrasting greatly with the previously mentioned usage of 48 billion cubic meters (Jazeera, 2025). Of course, upstream dam construction, climate change, which has resulted in reduced rainfall and

increased evaporation at all-time highs, government mismanagement, and oil extraction are all contributing factors. Consequently, they've left rural communities with disasters that are not only killing wildlife, a key source of nourishment for Iraqi Marsh Arabs, but also crashing fishing from 80 tons a day to nearly zero due to water scarcity (Crisp, 2023). As of September 2025, 31,001 families (186,006 people) remain displaced due to climatic factors, with 63% moving from rural to urban areas and thus leaving urban centers to the absorption of waves of climate migrants who are developing urban skills and networks, but straining city infrastructure, social services, and even residential patients of whom feel particularly challenged in occupational sustainability (*Advocacy Note | Water Scarcity and Climate Risks in Iraq*, 2025).

The Marsh Arabs (Ma'dan) are the most profoundly affected group, with only a few thousand of the quarter million indigenous descendants who lived in the marshes in the early 1990s remaining. This signifies the catastrophic decline in population that has resulted from water scarcity and thus food insecurity from unsustainable management and applications (*The Marsh Arabs of Iraq and the Destruction of the Wetlands*, 2016). Not to mention, urban discrimination compounds economic hardship for the Ma'dan, who are looked down upon by other Iraqi communities and often find themselves marginalized in cities. Without the skills and social networks necessary for urban employment, many are displaced and are left in a state of poverty (*The Marsh Arabs of Iraq and the Destruction of the Wetlands*, 2016).

The solutions to this complex situation are simple and comprehensive. The Ma'dan people, in their generational knowledge of the Marshlands and the natural balance of the ecosystem, must lead and decentralize water governance. Top-down government mandates in Iraq frequently fail due to corruption and regional political friction, involving complex conflicts with local militias and neighboring global powers (Al-Shakeri, 2025). Additionally, the current Iraqi government has been observed to largely act only in times of environmental crisis for these lands, rather than in consistent, sustainable efforts that may prevent excessive spending for such emergencies and prevent the damage left on the Ma'dan ecosystem. However, this isn't largely to blame the government; it is rather a recognition of credibility as to who is in the greatest position of knowledge and experience with these conditions and may understand them in ways that could not be comprehended by politicians. To this extent, it is recommended to pass the governance of water and environmental management onto the Ma'dan people and tribal people. This way, farmers are provided with a strong reason for a return to their native lands, the environment is more effectively managed and sustained with more innovative and sustainable agricultural practices and care being implemented, and an altogether resurgence of the once flourishing marshlands can be seen again, alongside the resurgence of its people, the Ma'dan Arabs population and opportunities. Take, for instance, the fact that with tribal governance, farmers can be provided with skills/innovative training camps that place scientific evidence and skills behind their ancient cultivations and agricultural practices, the same way that engineers were taught to become environmental scientists (Schwartzstein, 2023). With this, farmers can receive adequate wages through their participation, be provided with sustainable and easily cultivated crops for their family's sustainability, and thus be deterred from overcrowding urban areas or joining tense political militias. This can also greatly assist farmers who aim to return to their homes following their climate migration, eliminating great costs and proving to be sustainable no matter how

much agricultural land is truly available. Then, high vulnerability profiles must be kept for communities and families in the agricultural sector, so that careful monitoring can ensure that farmers and their families can be provided with emergency resources at an earlier and faster rate. And truly, with the Ma'dan guiding the creation of these profiles, highly specific scenarios and characteristics that may signal early instability and danger to Ma'dan families may be identified far more successfully than if the procedure were carried out by any other governing party or organization. Through these chained actions, political tensions can be decreased through the lack of backing towards militias, farmers can be more sustainably taken care of and cultivate/innovate for their lands, and a part of the economic dependency of Iraq is removed. Additionally, the marginalization and discrimination of the Ma'dan people could be eliminated through the recognition of their knowledge, abilities, practices, and most importantly, leadership. This is because the implementation of CoP models brings Ma'dan elders, agricultural researchers, and government officials to the same table, allowing trust to grow and ensuring rules of the lands and people are well respected and implemented. Lastly, an opening and stimulation of Iraqi agricultural markets can be implemented, so as to increase market volatility and provide economic diversity to combat the dependence placed upon Iran and Turkey combined. Of course, with this simulation comes the possibility of increasing tensions with Iran and Turkey; however, it is understood that there would be no better governance to guide the careful growth of Iraqi agricultural markets than the Ma'dan leaders.

There are, however, great limitations to this approach. Political tensions, for one, can increase despite this careful stimulation and growth in agricultural markets, primarily as a result of intense market competitiveness, which may inherently start larger conflicts. On the point of conflicts, one major issue comes from the fact that the Ma'dan people are also not a single, monolithic group, but are rather organized into a complex network of distinct tribes and clans. Unfortunately, there is a history of intense conflicts breaking out between tribes over access to the deepest, most fertile marsh fishing grounds and grazing lands. So, if the governance becomes corrupt or is dominated by a more powerful or politically connected tribe, marginalized clans will be cut off from water allocations, causing the system to collapse into localized conflict. The fortunate thing, however, is that the Ma'dan collectively desire the absolute maximum expansion of open, deep, and contiguous marshlands everywhere, and with the patterns of environmental interactions and effects they've seen, have also collectively found it more important to sustain the environment than themselves. More than anything, this governance will allow the people to regain the ability to feed and sustain their population (the key significance of a deep and thriving marsh for fishing), which they find more important than land disagreements/conflicts. Additionally, the conflict proves itself to simply be a matter of checks and corrections within this self-governance rather than a complete elimination of this right to the indigenous population. As a circle back to the issue of international relations of Iraq with Iran and Turkey, an issue of water diplomacy does come up. Although the Ma'dan people can address the local complexities and issues extremely well, the fact remains that Iraq has no leverage over the dams built by Turkey or water diversion and corruption by Iran. In this stance, the Iraqi government must partner closely with the local government to ensure that there will be water for them to manage, and that their abilities to address their community conflicts, even on a global stage, are at the very least heard and implemented into law in some way. In the same way that Rome was not built in a day, the Ma'dan governance too will require great assistance, training, exposure, and support as previously mentioned through the same training provided for engineers. This is especially important as modern water governance requires data collection, tracking, salinity levels, and monitoring SCADA

sensors. This is not an elimination of traditional practices, but rather a lingua franca that can be communicated easily with the collaborating parties of scientists and the government.
However, the governance and decentralization greatly assist the Ma'dan people in every way, most importantly in the protection of their population from local militias, who may not be able to regain their control over these disadvantaged families with more provisions for livelihood and sustainability. For one, these militias are often created and feed off those who are hungry, and with the mitigation of this hunger through these sustainable practices and governance, the existence of these tense militias may altogether fall apart. Global involvement will be needed, and truthfully, the lack of water availability may not be completely solved; however, with this sequence of solutions, sustainable applications can be guaranteed. Whether these solutions completely solve the water scarcity of Iraq or not is not in question; rather, the destruction of climate-harming, unsustainable, and degrading practices by farmers, politicians, and policymakers should be implemented regardless so that, at the very least, each Ma'dan can be guaranteed even a fraction of sustained and thriving marshland. The Iraqi government must take action, as should the Green Climate Fund in Iraq, the UN Food and Agriculture Organization, the World Food Programme, and the International Water Management Institute. The hope is that the projects and changes carried out by this governance and decentralized system will be backed by public funding, national government support, and general grants and donations. However, it can be predicted that the methods of governance by the Ma'dan may be entirely cost-effective, too. In comparison, the Panchayati Raj and nature-based wastewater systems in India come to mind, in which rural villages and wetlands received local self-governance following the failure of the national government in river pollution management and sewage treatment plants. The governance constructed small-scale reed beds and sedimentation ponds managed entirely by the village. The system filters domestic wastewater locally, preventing raw sewage from dumping into freshwater bodies and creating a reusable source of clean water for local agriculture- a similar problem the Ma'dan people face from excessive and unnecessary use of water. However, this water is being used, also for the nourishment of the community and southern rural Iraq.

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