

REPORT

# Water, Peace and Security

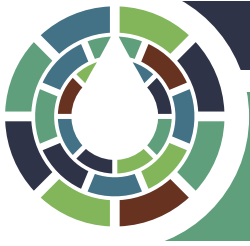
# Water Governance in Iraq

## Enabling a Gamechanger

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## Introduction: Unprecedented challenges for the water sector

Iraq finds itself amid a water crisis that far exceeds previous experiences with water scarcity and acute shortages. Declining quantity and quality of water, outdated and damaged infrastructure, and inefficient water use have uncovered deficiencies in existing water governance, severely affecting the country's socio-economic, political, and security situation. In the last years, basic water supply services in the south repeatedly broke down during the summer months which contributed to widespread anti-government protests, particularly in 2018 (BBC News, 2018). The current state of Iraq's water sector needs to be understood against the background of the country's tumultuous history. Iraq remains marred by autocratic regimes prioritizing power politics over good governance, consecutive wars, foreign military interventions, fragile security and political instability. This has prevented the country from effectively addressing water challenges despite the increased attention that has been given to water (-related) issues in recent years.

On the basis of a thorough literature review, semi-structured interviews, and an expert workshop, this paper provides a critical picture of water governance in Iraq. More specifically, the authors look at how water resources are governed and managed across Iraq's 18 governorates. Zooming in on current practices and challenges uncovers fragmented, outdated, and ill-suited structures but also allows for an initial assessment of intervention options to achieve more effective and efficient water governance.

Two major factors undermining good water governance in Iraq are identified and analysed: first, an insufficiently implemented water allocation framework that neither enables Iraq to meet its water needs nor effectively addresses its wicked water challenges; and second, a dysfunctional decentralisation that undermines

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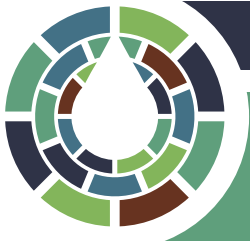
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local water management and, eventually, hampers national water governance. Both structural hurdles limit the implementation of existing strategies and contribute to a widely shared perception that water governance is informal, non-transparent, and ineffective.

However, both undermining factors also offer opportunities to improve the current situation and thus mitigate water-related security challenges. The development and implementation of an effective and transparent water governance system is absolutely essential, including a suitable and fair allocation of water resources. A series of reforms would also contribute to equity and accountability and be highly beneficial through its impact on other water-related priorities of the Iraqi government,



such as investing in appropriate infrastructure or increasing the efficiency of the water usage. For future water governance decisions, the Iraqi government needs also determine what to prioritize among the many water-related challenges and identify the most beneficial and efficient starting points (Von Lossow et al., 2022). This process requires consultations with different interest groups, communities, and stakeholders most affected by these decisions.

### Historical and administrative setting

For a long period, the economic, political, and security situation prevented the Government of Iraq from implementing badly needed water governance reforms and adjusting customary water management and usage practices (von Lossow, 2018). Authoritarian rule, consecutive wars, foreign military interventions, and occupation since the 1980s have had significant consequences for Iraq's water sector, specifically regarding its (physical) infrastructure, water consumption patterns, and the governance framework (MacQueen et al., 2004; von Lossow, 2016). Immediate security threats have dominated the political agenda, drained financial resources, and reduced the capacity to invest in the (re-)building of outdated, insufficiently maintained, and damaged water infrastructure. Apart from years of violent conflict, the sanctions against Iraq further hampered the maintenance and modernization of the water infrastructure while also decreasing state revenues from oil exports, Baghdad's main source of income.

The constitutional framework also provides obstacles to more efficient water management. After ousting Saddam Hussein in 2003, the new political system and the decentralization processes placed administrative strains on the water sector. According to the 2005 Constitution, Iraq was to be governed in a federal structure, with power shared between the federal Government of Iraq and the regions and governorates

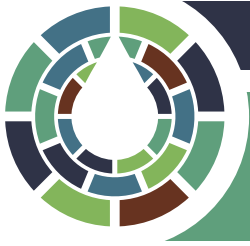
(Al-Mawlawi, 2019a). The constitution assigns region-specific responsibilities, budgets, and powers with the objective of avoiding the rise of another authoritarian regime (Al-Mawlawi, 2019a) and creating an internal balance of power, based on the divergent needs of the Kurdish Autonomous Region and the 19 Iraqi governorates (Brinkerhoff et al., 2012). Power-sharing between the federal and regional government(s) also became a fundamental principle of Iraq's water management and governance structure. To activate the decentralization process, Law 21 of 2008<sup>1</sup> (Forster & Michell, 2011) devolved some ministries' functions<sup>2</sup> to the governorates, like those of the Ministry of Municipalities and Public Works, Health and Education (The World Bank, 2016). While Law 21 does not explicitly refer to water governance, its Article 7.4 does address the decentralization of service delivery more generally and enables governorates to prepare investment plans and execute projects within the governorate (The World Bank, 2016).

### Legislative framework for water governance

Water governance refers to the political, social, economic, and administrative systems that determine, regulate and influence the use and management of water resources (SIWI, n.d.). Various ministries contribute to Iraq's water governance although the primary responsibility, including the development of water infrastructures and allocation of required water resources, is shared between the Ministry of Water Resources (MoWR), the Ministry of Finance (MoF), and the Ministry of Planning (MoP) (JICA, 2015). Law No. 50 of 2008 established the MoWR and generates a legal and technical foundation for the country's institutionalization of water resource management. The MoWR oversees the governance of water resources with primary tasks including the overall development of water resources, the planning

1 Law 21, also known as the Law of Governorates Not Incorporated Into A Region (came into force in 2015).

2 These include the Ministries of Housing and Reconstruction, Municipalities and Public Works, Health, Education, Labor and Social Welfare, Sports and Youth, and Agriculture and Finance.



of water resource investments, the regulation of the use of ground and surface water, and the establishment of sources and uses of water (FAO, 2008). In addition to the MoWR, the Ministry of Environment (MoE) and the Ministry of Health (MoH) also play a role in assessing the environmental impacts of water projects in Iraq. The MoE aims to ensure, for instance, that no harm to the environment and biodiversity is done by companies and individuals draining water into Iraq's waterways. The MoH is in charge of assessing the health impacts on citizens (Dunia Frontier Consultants, 2013). Finally, the Ministry of Municipalities and Public Works (MoMPW) is responsible for the restoration and improvement of municipal water services, which range from water supply to sewage treatment and local administration across provinces, with Baghdad as an exception (JICA, 2015). MoMPW is arguably the most important entity in drinking water and sewage treatment in terms of local impact as it is responsible for strategizing, budgeting, and implementing centrally funded projects (JICA, 2015).

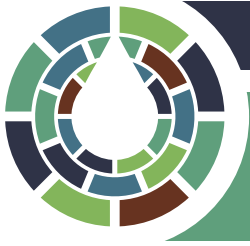
Currently, no overarching national water law is in force – a draft has been circulating for years but has yet to be ratified (Fanack Water, 2016). Instead, there are separate and disparate laws aimed at conserving and regulating water resources, including Law No. 50 of 2008 of the MoWR, which establishes a framework for institutionalizing water resource management (FAO, 2008). The fragmented water governance structures require the various ministries to interact according to their responsibilities.

In spite of an absent national water law, plans and strategies provide guidance for water management decisions. The 2014 Strategy for Water and Land Resources in Iraq (SWLRI), based on a comprehensive quantitative and qualitative study of Iraq's water system, sets out core principles that would aim to inform water governance between 2015 and 2035 (T-Zero, n.d.). The strategy establishes water quotas, distributed by the MoWR, as the key mechanism of water allocation. Decisions of the Ministry related to water allocation are usually

aligned with the water quotas proposed in the SWLRI (WPS-Clingendael Expert Workshop, 2022). Water allocation, infrastructure, and projects are based on bottom-up requests from the governorates according to the five-year Provincial Development Plans (PDPs) (The World Bank, 2016). The PDPs are developed by the governorates through consultations with actors at both district and sub-district levels, and are submitted to the MoWR. Collectively, the MoF, MoP, and MoWR are meant to assess these provincial requests and will usually accept them if they align with the SWLRI and the budget and investment plans, and as long as they do not negatively impact other governorates' water quotas (Expert Interview, 2021). If the MoP approves the plan and the projects, the MoF will further decide on the budgeting and funding. These overall decisions should align with the Iraq national development plan for 2018–2022, which outlines how to establish effective development in the context of ongoing political, financial, economic, and social constraints. It includes plans to enhance policies for infrastructure activities (including water, sewage, building and construction, and electricity) by allocating the investments across different sectors in line with the comparative advantage standard (The Ministry of Planning, 2018). This plan also entails the resumption of work to complete up to 4,000 projects that have been suspended since 2014 (Government of Iraq, 2019).

### Water governance challenges

Despite various circulating documents, strategies and visions, Iraq does not have in place a broader national, long-term vision on the governance, management and use of shrinking water resources. For instance, although SWLRI presents recommendations for more effective water and land governance and addresses the increasingly scarce water resources, its impact is limited. Despite some progress in adopting the strategy, it is not yet fully implemented and glaring shortcomings, inconsistencies and contradictions pervade the current system of water governance. As a result, Iraq lacks



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an actionable plan with a mandate on how to systematically move forward in addressing pressing issues in the water sector. Among several structural challenges that contribute to this gap, there are two cross-cutting factors that have repeatedly contributed to tensions and conflicts over water: first, a deficient water allocation framework and, second, a decentralized administration insufficiently supporting local institutions and capabilities.

### Insufficient implementation of the water allocation system

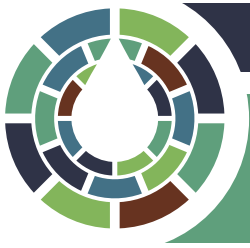
The water allocation system outlined in SWLRI combines top-down and bottom-up approaches, as allocation depends on water requests by governorates reflecting their current needs and a comprehensive assessment of all governorates' needs at the federal level. However, what is on paper does not fully translate to what is being done in practice – shortcomings in allocation decisions are present and implementation is often delayed. One underlying reason is that ministries frequently seek quick-win solutions for water problems instead of pursuing large-scale water projects that, albeit costly, can offer long-term results benefitting the entire water system. This is partly due to the very low public investments in the water sector. Despite the pressing challenges, the MoWR only acquires less than 1% of the total national budget, while other sectors (e.g., security) receive significantly more. In addition, political leaders benefit more from short-term gains that are visible within their political mandate, such as maintaining irrigation streams in governorates with intensive agricultural activity or conducting water quality tests at main hydrological stations (WPS-Clingendael Expert Workshop, 2022). As a result, highly complex and large-scale issues such as water pollution, particularly in the south, are not addressed, with funds and resources often invested in those challenges that are easier and faster to solve.

Furthermore, the mindset and decision-making structures in the water sector are still biased

towards operating and dealing with floods, the primary threat in the past, with budgets and projects being overly focused on flood mitigation although Iraq is now predominantly facing water scarcity (WPS-Clingendael Expert Workshop, 2022). In addition, water policies are often reactive rather than proactive, meaning that they seek to address emergencies rather than prevent and prepare for future issues. Paying compensation to households or industries after seasonal droughts rather than investing in resilience measures that would mitigate the effects of droughts is an example of such a reactive policy.

Moreover, the current mechanism is not flexible enough to accommodate the reshuffling of water needs. Rules are not adhered to on the ground, as the allocation is also governed by religious laws, disasters and emergencies, unrealistic expectations and/or dysfunctional mechanisms. For instance, if a certain province needs less water at a certain time, the province can 'trade' water with another although there is no overview from the Government as to who gets what and whether it is equitable (WPS-Clingendael Expert Workshop, 2022). The reality is that people will do whatever it takes to cope with the water stress, even if that means carrying out illicit activities, such as illegal drilling and river tapping (Human Rights Watch, 2019a).

As Iraq's central water allocation framework currently does not meet the country's water needs and expectations, water allocation de facto relates to a reference system of historical usage patterns that prioritizes provinces with higher water demands (Expert Interview, 2021). While Iraq's water allocation system has been touched upon in the SWLRI, an optimal distribution is far from reality on the ground, with Iraqi citizens continuing to use outdated and water-intensive irrigation techniques that further damage arable land. For example, flood irrigation techniques remain one of the most popular systems throughout the country, despite their contribution to increased salinization and inefficient use of water due to runoff, evaporation, and the filtration of uncultivated



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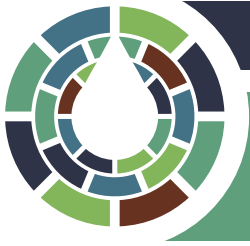
fields (Ewaid et al., 2021; Farm Dynamics Pakistan, 2019; van den Akker et al., 2011). Moreover, provinces that traditionally host a large agricultural sector requiring high amounts of water tend to receive more water. This can result in encouraging inefficient usage patterns such as water-intensive flooding techniques (FAO, n.d.). Similarly, provinces with large-scale oil production receive significant amounts of water sometimes at the expense of, for instance, households or other economic sectors.

This situation can be a source of tension between downstream and upstream governorates in periods of water stress. It puts different governorates and regions in different and potentially competing positions, as an advantageous geographical location and/or hosting certain industries can also translate into more control over water distribution. Iraqi Kurdistan is a prominent and illustrative example of how the more powerful role of the governorates and regions can create a politically sensitive ‘water situation’. The autonomous region finds itself in a favourable geographical and strategic position upstream of the Tigris River in Iraq. Also, some of the country’s major water infrastructures are located here, such as the Darbandikhan dam or the Dokan dam – two of Iraq’s largest hydroelectric dams. This setting gives Iraqi Kurdistan substantial control over the country’s water and power supply and could enable a prioritization of Kurdish water needs, particularly relevant for irrigation and oil production. Moreover, the situation could be used as potential leverage to strengthen the Kurdish position towards the central government – even if the overall political context and limited capacities to retain water over longer periods make this a rather theoretical bargaining chip (von Lossow, 2018).

Conversely, the ‘water position’ of the south has been weakened. Here, the governorates are in a geographically disadvantaged location downstream on the Euphrates and Tigris at the mouth of the Shat-al-Arab. Consequently,

upstream water consumption might compromise the allocated quotas for the southern governorates. The governorate of Basra, for example, annually experiences drastic water shortages and needs to deal with the accumulated water pollution in the river as well as increasing salinization and desertification. The dire water situation affects everyday lives in the region by threatening people’s health and livelihoods that are based on agriculture and fisheries (Birkman et al., 2022). The regional government failed to address these massive challenges due to limited capacities and dependence on the federal government’s additional support.

Despite the existence of the SWLRI, insufficient funds have been allocated to its implementation and related reforms, resulting in partly non-transparent, informal and inefficient water allocation and decisions that in practice are ruled by factors like political considerations or historical usage patterns. Accordingly, water availability, allocation quotas, and access to water and basic supply services have been key issues that contributed to mass mobilization and anti-government protests over the last decade. Particularly since 2018, citizens have heavily protested over water amongst other grievances, in several provinces including Basra, Dhi Qar, Muthanna, and Diwaniya (Schweitzer, 2018). While these protests were embedded in a broader dissatisfaction with the government and more specifically related to water supply services, they displayed the potential of water to undermine the legitimacy of the state and contribute to stirring violence. For example, violent protests erupted in September 2018 during the Basra water crisis because of water shortages and polluted water, which caused a major health crisis, hospitalizing at least 118,000 people between August and October (Human Rights Watch, 2019b). In October 2019, citizens of Dhi Qar participated in large-scale protests demanding job opportunities, political reform, better provision of public services, and the end of public corruption (Iraqi News, 2019).



### Dysfunctional decentralization and limited support for local authorities

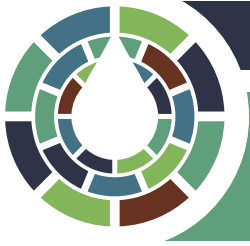
Iraq has several separate water and environmental laws that safeguard the country's natural resources. Particularly related to water, Irrigation Law No. 83 of 2017 aims to maintain the work of water resources and mitigate hazards thereof, coupled with preventing the breaching of water quotas and the updating of penalties for cases of violation (FAO, 2017). Like Law No. 50 (see section 3), it also establishes certain responsibilities of the MoWR in terms of its role in the restoration, preservation, and supervision of public water resources, as well as the maintenance of dams and river banks (FAO, 2017). Other laws address the maintenance of irrigation systems, the conservation and protection of water resources, and the environment.<sup>3</sup>

Despite legal mechanisms and decentralization having the potential to improve service delivery, their effectiveness has been impeded by inadequate planning, unclear rules and responsibilities, and fragmented support by the federal authorities (Fleet, 2019). The way in which decentralization was implemented in Iraq intensified pre-existing problems related to the governance structures and created new deficiencies, including difficulties to hold local/provincial level authorities accountable. The decentralization brought about discrepancies between the allocation of responsibility, financial resources, and executive authority. As a result, governorates have inadequate decision-making power, resources, and human capacity to effectively govern water resources and remain dependent on the central government to manage the system.

Law 21 of 2008 and articles 114 and 115 of the Iraq Constitution provide the legal framework for the decentralization of service provision, including water-related services (Constitute Project, 2005; Forster & Michell, 2011). In practice, however, governorates lack autonomy and control over the processes needed to carry them out. Despite Law 21 stipulating the roles and responsibilities of Governorates, coordination with the appropriate federal ministries is not established (USAID & Iraqi Local Governance Program, 2008). Article 114 of the Constitution specifies the competencies shared between federal and regional authorities, with one competency specifically related to the formulation and regulation of internal water resources policies that uphold equitable distribution regulated by law (Constitute Project, 2005). Moreover, article 115 refers to the powers held by regions and governorates, explicitly stating that the powers not indicated as exclusive powers of the federal government belong to the authorities of the regions and governorates. These laws are intended to allow governorates to deliver services more effectively, tailored to respective needs and priorities (Constitute Project, 2005; Fleet, 2019). However, how federal and governorate responsibilities should be exercised was never clearly delineated and remains partly unclear.

In the last years, the central government has gradually curtailed the role of sub-national authorities (Al-Mawlawi, 2019b). In the case of the governorate of Missan, for example, there was irregular or a complete absence of payments by the government to the employees of the agriculture directorate, undermining their ability to properly execute their assigned roles (Fleet, 2019). Amendments to Law 21 in 2019 reinstated some federal powers previously decentralized from Baghdad, like reinstating the capital's

<sup>3</sup> Other relevant laws range from the 'Law relative to maintenance of systems for irrigation and drainage' (No. 12 of 1995) to Law No. 2 of 2001 on the conservation of water resources, aimed at managing the nondomestic use of water. Regarding the overall environment of Iraq, Law No. 27 of 2009 on the protection and improvement of the environment promotes this objective through focusing on the conservation of the public health and natural resources, as well as the management of damages to the environment. It also involves the protection of water resources, preventing pollution through the regulation of discharge from domestic, industrial or agricultural actors. See FAO, "Law Relative to Maintenance of Systems for Irrigation and Drainage (No. 12 of 1995)," FAO, August 12, 1995, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC014045>; FAO, "Law No. 2 of 2001 on Conservation of Water Resources," FAO, July 25, 2001, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC146993>; FAO, "Iraq (National Level) - Law No. 27 of 2009 on the Protection and Improvement of the Environment," FAO, December 13, 2009, 27, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC100188>.



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complete authority over the Ministries of Health and Education. It has also meant that legal challenges instigated by governorate authorities are increasingly ruled in favour of the federal government and grants the central government more power to intervene in political disputes within governorates (Al-Mawlawi, 2019b). Despite the push to decentralize service delivery, the municipal water and sanitation sector also remains highly centralized. The approval and funding of projects are highly dependent on the support of the MoP (for project planning approval) and the MoF (to ensure that projects fit within the budget) (The World Bank, 2016). In this way, the Iraqi public administration system, as it pertains to the municipal, water and sanitation sector, limits the level of autonomy in decision-making at the subnational level.

The reliance on the central government's funding also determines whether governorates can sign off on new contracts (Fleet, 2019). This dependence becomes a liability when funding amounts are not delivered on time or become uncertain altogether, consequently limiting the governorates' ability to pay contractors and resulting in further delays. Uncertain funding limits the directorates' capacity to prepare, manage, and execute water-related projects and offer proper services (Fleet, 2019). One illustration of this is during the Basra crisis in 2019, when the governor of Basra complained that the federal government did not send adequate and timely funding to address the crisis. The rapid devolving of responsibilities from the federal to the governorate level and the resultant expansion of employees also overburdened governorates' available budgets and capacity to absorb new staff (The World Bank, 2016). In addition, appointed authorities and staff within governorates do not always have sufficient experience and skills to carry out their responsibilities and plan effective and efficient water management (Fleet, 2019; Forster & Michell, 2011).

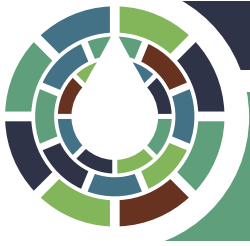
Unreliable funding practices are also exacerbating the deterioration of water infrastructures, further increasing unsustainable modes of irrigation that ultimately contribute

to overall water stress. After numerous wars and social unrest, infrastructure in Iraq's most water-intensive sector, agriculture, is in a very bad shape – outdated, damaged and inefficient. It is estimated that only 20% of farmers have access to full irrigation (World Bank et al., 2019). Along with ecosystem degradation, poor drainage systems led to increased salinization of Iraq's agricultural land. This caused significant land degradation and soil erosion, as well as crop losses (Land Degradation Neutrality Target Setting Programme, 2017).

The top-down approach to governmental policymaking is not sufficiently backed by up-to-date data collection and analyses of local water needs (World Bank et al., 2019). As such, institutional and legislative frameworks frequently support ineffective and rather short-term measures, such as heavy subsidization. The subsidies are supposed to guarantee food security and avoid famines but do not sufficiently support private sector development or the diversification of farming systems (Lucani, 2012; World Bank et al., 2019). Consequently, the agricultural sector becomes even more dependent on funding from the central government, completing a vicious cycle. All these factors combined have led to the progressive deterioration of Iraq's agricultural system and the sector's highly inefficient water use. The issues could be mitigated if governorates had sufficient autonomy to prioritize projects, allocate resources and subsequently implement plans to increase the sector's productivity (World Bank et al., 2019).

Issues regarding the delegation of responsibility and overlaps between different levels of governance apply to the development, operation, and maintenance of water infrastructures. While decisions over priorities, planning, and financing are taken at the federal level, the actual implementation is often delegated to the governorate level. In other words, the responsibility of MoMPW at the federal levels is to plan water projects in governorates, which are in turn responsible for the project implementation in their respective municipalities (The World Bank, 2016). However, whereas governorates





can propose water-related projects to the federal level, they are de facto not enabled to implement them as they might depend on federal funds (Skelton & Ali Saleem, 2019).

This process leads to disagreements and blame games. During the Basra water crisis, the MoWR was blamed by the Basra Governorate Office for failing to provide sufficient water allocation. At the same time, the Ministry shifted this blame back to the local authorities for not managing their water resources more effectively (WPS-Clingendael Expert Workshop, 2022). This lack of a cooperative approach between the federal Government and governorate authorities is also apparent in other instances. For example, when local authorities in Basra submitted a proposal to build a new barrage to prevent further salinization and to improve the water supply situation, the federal government rejected the project. Although this project was admittedly highly contested and widely criticized, the federal government failed to provide support or alternative options to overcome the challenge, frustrating further attempts by local authorities to innovate and bring up new ideas informed by the local context.

Today, federalism and decentralization are deeply unpopular in Iraq. As they have not been implemented properly, they failed to improve the delivery of basic services at the local level. This has also undermined trust between the central government, governorate authorities, and the population. In Dhi Qar, for example, citizens feel politically underrepresented and neglected by the federal government, which has led to civilian protests (Guiu, 2020). Southern governorates are also less likely to abide by water rules and laws set in Baghdad – partly because of their economically advantageous situation generating most of the oil revenues, like in Basra, and partly because of their desperate situation when it comes to the availability of clean water (Expert Interview, 2021). The lack of trust and feeling of underrepresentation ultimately undermines the legitimacy of the federal government and has contributed to waves of anti-government protests, which peaked in 2018 (Alquraishy, 2022; Al-Rikabi, 2019).

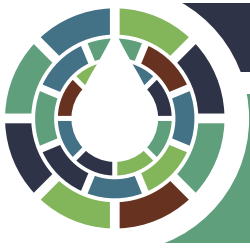
## Opportunities for change

A complete implementation of a water allocation framework and an efficient decentralization system are imperative to meet Iraq's tremendous water challenges of today and tomorrow. From the analysis in the previous chapters, a set of concrete recommendations for interventions can be derived to address current shortcomings and adjust the governance structures in these areas. Such interventions in water governance have considerable gains, affecting several structural deficiencies at once. The recommended interventions can also ensure that water governance in Iraq is founded on a general acknowledgement that water availability will continue to decline due to an array of factors, such as climate change, an increase in water consumption, as well as the development of water infrastructures outside of Iraq.

The mentioned SWLRI from 2014 offers guidance and provides a water management strategy (T-Zero, n.d.), but requires additional updates to account for some of today's fast-changing trends and developments, including climate change. The changing water and security situation and associated challenges call for a general reassessment of potential interventions that are feasible to improve Iraqi water governance. A new, transparent and fully implemented water allocation framework and process as well as a consistently decentralized administration that strengthens local capacities are two central pillars in addressing existing deficiencies in the water governance structure.

### A clear, transparent, and dynamic process for water allocation

Water allocation needs to reflect and address the current, actual water needs and acknowledge de facto consumption patterns, while at the same time prioritizing among water users. A more suitable water allocation system must be based on regularly updated data reflecting needs on the ground, which may contradict historical and current practices (Cattarossi, 2021). Such



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methods could encourage more efficient water use but would also require subsequent changes and reforms in other sectors. Agriculture remains the main water user, consuming roughly 91% of the overall withdrawals while industries and households fall rather short (FAO, n.d.). One example for setting a priority between water users would be to guarantee the human right to water by ensuring a certain minimum level of water quantity and quality for the households. At the same time, such a measure may affect water-related practices in other policy fields and sectors; in agriculture, for example, the costs for irrigation and subsequently wheat production might increase, and in the oil sector, the production-related water pollution might become prohibited. Reform is, of course, challenging given that powerful groups or industries may oppose or try to sabotage change to prevent the loss or decline of their benefits.

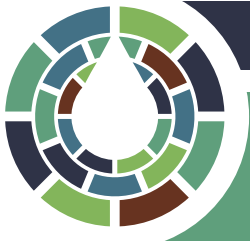
Through an integrated approach of managing challenges in the closely connected water, food and energy sectors simultaneously – as in the Water-Energy-Food (WEF) Nexus, the water allocation framework could better address or withstand emerging challenges, for example, caused by climate change. Water used in irrigation does, for example, not just decrease water availability water but also harms the quality of the available resources. The guiding principles of the Integrated Water Resource Management (IWRM), highlighting the social, economic as well as ecological value of water, are also essential to developing and implementing a suitable and fair water allocation system.

A suitable allocation system also requires changes in habits, customs, and technologies, for example reducing flood irrigation and irrigation in areas that still have enough rainfall, as well as investing in ecosystem restoration to retain water (e.g., fighting vegetation loss, recharge water). Moreover, it is important to set priorities within the sectors, not just between water users; for example, distinguishing between agricultural products for export or food products for the local market.

Water allocation also needs to consider hydrological and economic differences between regions – which may have changed or further accentuated in recent years. In the north, for example, more water resources are available relative to the south, but agriculture has become more vulnerable to increasingly variable and declining rainfall (Menmy, 2021). With more dams built upstream and irrigation expanded in Turkey, water resources in the north may further shrink. Agriculture in the centre and south of Iraq depends on irrigation, which makes it extremely dependent on the decreasing water discharge of the Euphrates and Tigris.

At the same time, the federal government needs to provide support, for instance, when allocated water and water limits threaten income and livelihoods. In the past, the southern governorates have been relatively neglected in water allocation – partly because the north was able to exceed its quota more easily. This has been mainly attributed to geographic advantage upstream at the Euphrates and Tigris basin, but the insufficient country-wide coordination and political marginalization of the south also contribute to this practice. Such a (hydrological and political) balancing, of course, also needs to be reflected in a new comprehensive water law and, most importantly, be justly implemented. Equally important is the enforcement mechanism of environmental laws (rules, regulations, penalties, etc.), which has been weak in the case of, for instance, Law No. 50 (FAO, 2008).

In addition, an updated comprehensive water law that functions as a formal legal framework for all water governance and allocation processes should be developed and implemented. This development would require a legal and institutional framework that clearly defines and distinguishes the roles and responsibilities between governmental entities, and employs strategic planning to introduce water management plans based on clearly defined processes and parameters (OECD, 2015; Yousuf et al., 2018). Joint planning exercises for governorate and central government representatives and workshops that show the



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impact that water allocation to one governorate has on another can support the implementation of a water allocation framework. Building a common perception of water challenges across governorates fosters a collaborative rather than competitive attitude between governorates – and vice-versa. Here early warning systems and emergency response are less controversial entry points for cooperation – preventive structures and mechanisms could be established that clarify how water is allocated and who gets prioritized in case of extreme weather events, such as droughts.

Moreover, despite Iraq having formulated water-related strategies, visions and agendas after identifying gaps and needs, these approaches are yet to be implemented and in part adjusted to balance today's water interests and needs between different sectors and communities. Informal responsibilities and ad-hoc collaborations pose major obstacles to a clear national water vision for Iraq. Where appropriate and functional, they could be formally integrated into existing processes or institutionalised arrangements; otherwise, they must be replaced (The World Bank, 2016).

One way to increase local authorities' timely crisis response and also accountability towards citizens is to increase the governorates' reliance on income from own-source revenues (Forster & Michell, 2011), defined as "sources of revenue at the disposal of local government, including property tax, user charges, and fines" (IGI Global, n.d.). Article 44 of Law 21 of 2008 delineates powers at the governorate level to levy local taxes and rights to receive transfers from the federal government (Forster & Michell, 2011). Despite this law, the development of localized revenues remains limited in practice, and the Ministry of Finance and the courts have denied governorates the right to levy local taxes (Fleet, 2019).

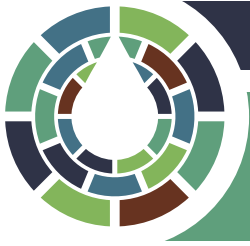
Other mechanisms are public hearings and provincial elections, which are both already held in Iraq and contribute to the accountability of local authorities (Brinkerhoff & Johnson, 2009). Such mechanisms could regularly be used in relation to the water sector to prevent and address local authorities' engagement in illegal practices. But, of course, shifting more responsibilities and resources to the local level needs to go hand-in-hand with more robust accountability mechanisms towards the federal government, too (The World Bank, 2016).

### Consistent decentralization strengthens local capacities

While decentralization has been marred with challenges in the past, it can accompany Iraq's fragmented social, political, economic, and environmental context if further refined and implemented correctly (Levkowitz & Kalian, 2021). Decentralization can have several benefits for complementary and coherent decision-making, thus also strengthening centre-periphery relations and preventing fragmentation. In addition, it can serve to meet local needs and priorities; overcome the state's weak presence outside the centre in Baghdad; enhance and speed up state service delivery; mitigate conflict between sectors, governorates, and individuals by avoiding a 'winner-takes-it-all' situation (Brinkerhoff & Johnson, 2009); and strengthen fragile national integration.

In this way, decentralization can play a key role in addressing water challenges,<sup>4</sup> as provincial authorities are best positioned to identify, verify and address local water needs. Decentralization should not be understood as the result of a zero-sum game that the federal government has lost but rather as a complementary approach to a complex puzzle to meaningfully address the country's water situation. To be effective, however, the decentralized system must clearly delineate roles, responsibilities, and executive

<sup>4</sup> Decentralized responsibilities and the promotion of the subsidiarity principle can also ensure a robust institutional framework, which are a part of the broader Integrated Water Resource Management (IWRM) approach.



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power between the central government and the governorate authorities for the development, operation, and maintenance of service delivery projects (European Environment Agency, 2016; Flores et al., 2016; Iza & Stein, 2009).

Local water situations could improve if provincial authorities have the political power and financial means to act while being under the oversight of the federal authorities coordinating the different policies (Meijerink & Huitema, 2015). National water management and oversight are essential because of the main water supply being provided by two rivers flowing from north to south; the different economic characteristics and benefits from the water use; and the politically sensitive power dynamics between other areas in Iraq (Expert Interview, June 23, 2021). Support for local capabilities and involvement will result in more targeted action addressing local water needs, related crises, and disasters.

To make decentralization work, provincial authorities need consistent technical support and capacity development to effectively manage, distribute, and monitor water resources. Providing this will increase local ownership to improve the water situation, rather than waiting for plans from Baghdad to be implemented. This capacity building can be strengthened through accessible data and knowledge tools such as agent-based models that show the potential impact of various intervention options, or by strengthening exchange and peaceful collaboration among key stakeholders, i.e., local and federal authorities as well as local communities.

The involvement and empowerment of provincial and local level authorities in decision-making are also crucial for more efficient and effective management (Garrick et al., 2019). Service delivery managed at the governorate level reduces bureaucratic hurdles within the Iraqi government because it is organized closer to the population and at a smaller scale (Brinkerhoff & Johnson, 2009). Effective decentralization also monitors centralized power and challenges authorities' ability to satisfy societies' demands

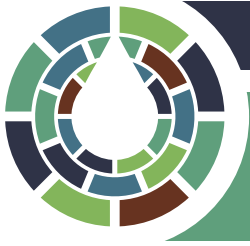
(Brinkerhoff & Johnson, 2009). In addition, governorate-level officials are closer to the populations they govern and better able to understand and address local water challenges and needs due to their local knowledge and connections. Such strengthening of provincial and local level authorities furthermore decreases the barrier to citizen participation and encourages community-level dialogue – thus effectively addressing water conflict mitigation and resolution at a manageable scale.

### Conclusion: Towards a long-term vision

Iraq's water situation is increasingly dire, putting pressure on the central government, governorate authorities, and citizens. Effective water governance is essential to mitigate Iraq's water challenges and related local conflicts. The analysis of how water resources are governed across governorates illustrates some of the country's structural deficiencies and provides intervention options that can help effectively mitigate these deficiencies. It underlines the importance of strengthening water governance as it is a central and cross-cutting driver that can help mitigate Iraq's various water-related challenges.

This paper identifies two main challenges to effective water governance in Iraq – inefficient water allocation practices due to incomplete implementation of national laws and strategies; and a partial and dysfunctional decentralization with insufficient governmental support for governorate authorities. These challenges are a cause for concern given that they increase the risk of conflict between provincial authorities, triggering competition over water resources, and exacerbating grievances in light of the central government's inability to effectively address water allocation issues. The hydro-politics between provincial authorities and increasingly scarce water resources run the risk of undermining local and national stability.

Steps to address these structural challenges include a better understanding and a (re)



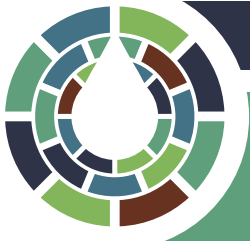
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structuring of the current water governance framework in Iraq. The current informal, non-transparent and often ad-hoc practices should be replaced by clear, equitable, and nationally supported regulations and laws on the sharing, allocation, and management of water resources within and between the country's governorates. This measure includes clearly delineating the roles and responsibilities of government, governorate, and other relevant authorities and streamlining their coordination. These regulations and laws should be driven by good monitoring and scenario analysis that enable the effective management of water use and demand across Iraqi governorates – taking the WEF nexus perspective and principles of IWRM into account. As the governorates' needs and priorities shift with the changing water and security situation, these policies should be adjusted accordingly. This may require developing synergies and trade-offs to balance the needs across Iraq's governorates and to handle pushback from various powerful groups. In addition, accountability mechanisms need to be strengthened in order to increase authorities' liability towards their respective communities.

Moreover, addressing these governance challenges should be supported by a (re) assessment and (re)structuring of the decentralization system of service delivery

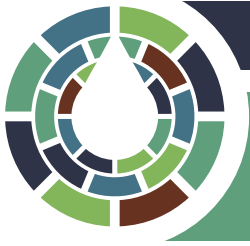
to ensure that responsibilities, budgets, and authorities are aligned and clearly defined for both the central government and governorate authorities. Bottom-up support from citizens and effective accountability mechanisms will be key to ensuring that decentralization is properly implemented to benefit the population. Strengthening local ownership can further enable governorates to manage water resources more effectively. This requires government support for local capacity-building initiatives and professional training in technical issues, including water infrastructures, project management, and strategic planning.

While addressing these challenges is not easy, it offers opportunities for improvement that are feasible and suited to today's context. In recent years, Iraq has been taking steps toward streamlining its water governance and ensuring that water resources are efficiently and mindfully used. The SWLRI is a step in the right direction. However, proper implementation of existing processes and their constant improvement and upgrades are necessary to match changing realities and provide informed policy-making. The opportunities outlined throughout this paper are structural efforts that the Government of Iraq can undertake to improve the governance of water resources at a national, governorate, and local level.



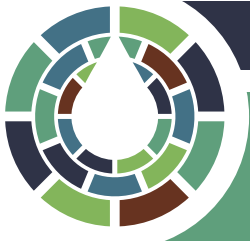
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