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2023

# The Cradle of Civilization is in Peril: a closer look at the impact of Climate Change in Iraq

By Abdullah J. Alfayadh

The severity of water scarcity in Diyala, Iraq, and in the region writ large, evokes sharp expressions from those who study the problem.

“Water is as cheap as buying onion and water,” observed one Iraqi water expert, amusingly recalling a local expression from 30 years ago to describe a clear problem: the cradle of civilization, the land between the two rivers, once famous for its agriculture and farming, is in peril. The spiraling rivers and abundance of irrigation canals are no longer what they used to be. The crisis is here, and is not one of the future, it is a crisis of today.

Surveying reliable primary and secondary sources about this challenge should ring alarm

bells. Iraq has been cited as one of the most vulnerable country to climate change by the United Nations, and it is particularly affected by ever increasing temperatures, flooding, and droughts.<sup>1</sup> All of these impacts lead to severe consequences such as reduced livelihoods, climate induced migration, food insecurity, and water scarcity.

Multi-faceted climate change issues exacerbate these conditions. Communities find themselves stuck between challenges including the complex cross boundary water policies of neighboring countries, and outdated irrigation canals and technologies. The strain on vital water resources inside and outside the country—spurred by

rapid population growth, formal and informal urbanization, and significantly under-resourced and weak governance bodies<sup>2,3</sup>—is ever present on the mind of Iraqis.

Iraq's climate challenge is also part of a larger regional problem. The MENA region is one of the most vulnerable regions in the world when it comes to climate stressors—and these drivers of instability compound and exacerbate climate fragility. In particular, the region is impacted by high temperatures, water scarcity, and climate induced migration, all of which add further pressure on governmental infrastructure and services.

This study draws upon a wide range of materials, including a thorough literature view and assessment of traditional media channels and social media. Broad interactions through interviews and in other venues with local and international experts were especially useful in approaching the issue and impact of climate change in Iraq. The focus of these efforts was to survey the interaction of climate vulnerability and communal cohesion in particular surrounding communities dealing with ruptured social ties due to cycles of recent and historical conflicts.

Multidimensional issues of competition over natural resources, climate induced migration, strained public services, and intra-state water allocation drive climate vulnerability and instability in Iraq. There is indeed an increasing consensus that climate change in the region acts as a “threat multiplier” that can exacerbate drivers of conflict and fragility and have negative effects on peace and stability. This analysis will explore number of dimensions to the impact of climate change, and in particular, the issue

of climate security, and its multi-disciplinary impact on communities throughout Iraq, and in Diyala governorate in particular.<sup>4</sup>

## **Diyala as a Case Study**

Diyala governorate is famous historically for its luscious pomegranate and citrus orchards. It is located in the central-eastern part of Iraq, sharing its long border with a number of governorates, as well as with neighboring Iran. The governorate's ethnoreligious composition is a unique reflection of the nation at large: Sunni and Shia Arabs, Shia and Sunni Kurds, Turkman, as well as small populations of Christians and Yazidis.

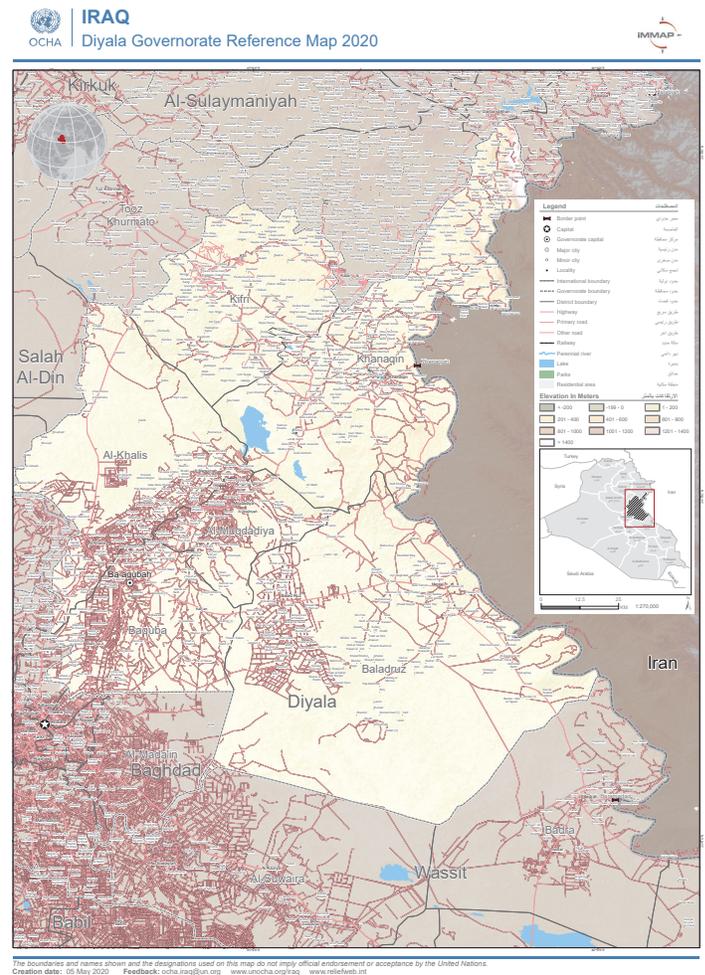
Administratively, Diyala is divided into six districts—with a number of them considered to be disputed between the Iraqi and Kurdistan Regional governments.<sup>5</sup> Having experienced years of cycles of conflict since the Iraq-Iran war in 1980s, Diyala has been recently (and gravely) impacted by the larger conflict with ISIL, which has heavily affected rural housing, infrastructure, and most critically agricultural livelihoods and water resources.<sup>6</sup> According to the International Organization for Migration Displacement Tracking Matrix (DTM), 311,282 individuals were displaced from Diyala during the conflict and 239,310 people have since returned to their areas of origin. This represents numerous cycles of conflict and displacement since the US-led invasion in 2003, which have created social, economic, and financial vulnerability and fragility susceptible to external shocks and stressors.<sup>7,8</sup>

Displacement and individual experiences are key factors contributing to vulnerability to environmental change—including unique experi-

ences by historically marginalized populations.<sup>9</sup> Indeed, cycles comprised of an intersection of individual/communal fragility, climate induced vulnerability, and conflicts are ever present, both in Iraq and in post-conflict communities in general. The residents of villages and communities displaced during the war with ISIL, for instance, “often return after years of displacement to destroyed housing, infrastructure, and farming assets, and with no financial reserves available to cope with or adapt to climate change.”<sup>10</sup> Moreover, agricultural assets, irrigation canals, and farming infrastructure was destroyed by ISIL or in subsequent military operations against the group, leaving households without access to basic access to the main source of livelihood: agriculture.<sup>11</sup>

In the backdrop of these cycles of conflict-induced vulnerabilities, Diyala is at a greater risk of drought and water shortage due to its reliance both on lakes and on sources of tributary rivers flowing from Iran, where water levels have dropped significantly since 2020. This situation has affected agriculture and prevented IDPs from returning,<sup>12</sup> in addition to causing increased communal tensions between upstream and downstream villages.<sup>13</sup> This water scarcity and resultant conditions represent an adverse trend, especially for a governorate that relies on resources from outside its sovereign land. Since 1974 and progressively ever since, Iraq’s neighbors to the north and east have built more than 30 dams, hydroelectric plants and irrigation projects on the Tigris and Euphrates Rivers. These projects have had a devastating impact on Diyala, “which was known just 10 years ago for its peaches, apricots, oranges, and dates. Yet the tributaries from Iran are the only source of water in the province, other than the dwindling rainfall in the region.”<sup>14</sup>

**Figure 1: Map of Iraq showing Diyala<sup>15</sup>**



## Drilling Down to Causes: The Case for Viewing Climate Impact Through a Nexus Lens

The interplay between climate change and peace and fragility in Iraq is intricate.<sup>16</sup> This interaction also frequently intersects with a range of environmental, political, and socioeconomic elements. Nevertheless, there is general agreement that climate change in Iraq functions as a “threat multiplier,”<sup>17</sup> intensifying the underlying causes of conflict and fragility. This escalation leads to adverse impacts on the prospects for peace and stability, further spurring communal vulnerability and potential conflicts.

To understand this interplay more comprehensively, exploring the common understanding of climate-induced challenges in Iraq nationally, as well as the unique set of challenges in Diyala, is a useful case study. The barriers to recovery that post-conflict communities face in relation both to resource (un)availability and competition over scarce resources caused by climate change is particularly acute and visible there.

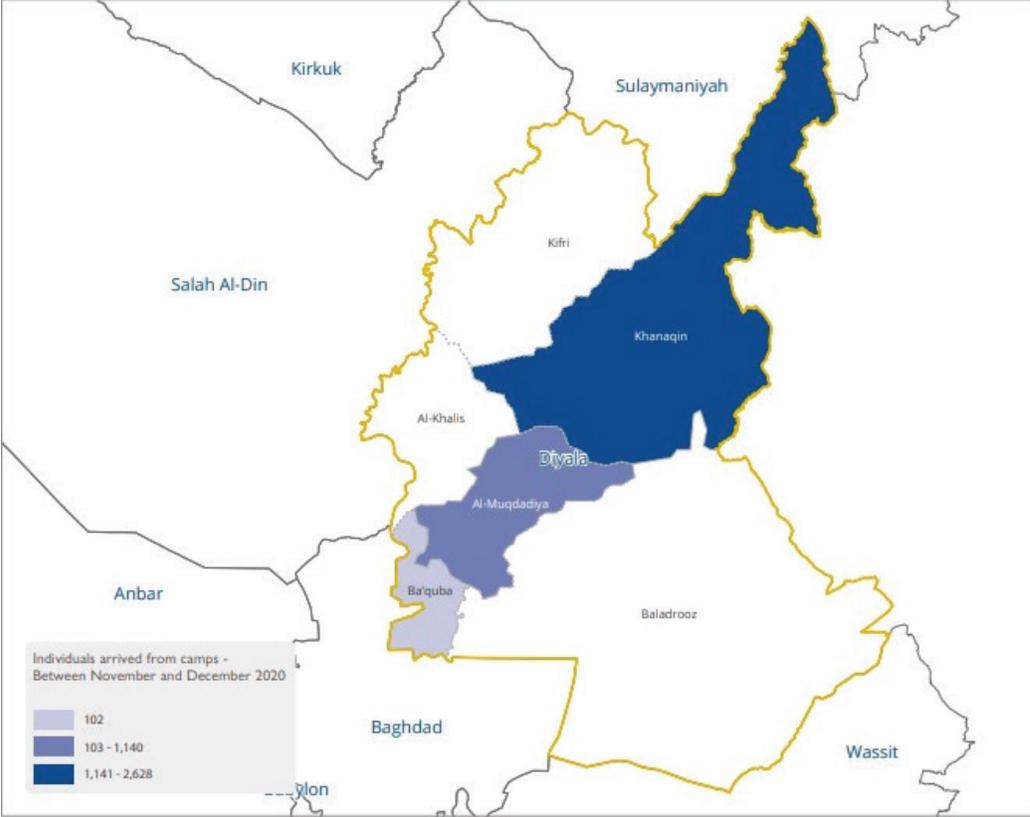
One issue that stands out prominently is dwindling access to water, which has been impeded by crises with multiple causes, including high and rising temperatures and outdated irrigation methods, amongst many others. This situation is further compounded by widespread damage to the water network, the absence of a sewer network and insufficient water treatment infrastructure in Diyala,<sup>18</sup> where access to potable

water remains an issue throughout the year.<sup>19</sup>

Diyala also faces a significant risk of drought and water scarcity. As noted above, this is primarily attributable to its reliance on lakes and tributary rivers originating from Iran, where water levels have experienced a substantial decline since 2020. These environmental strains pose a threat to agriculture, which historically had been the main source of livelihood there, and are a barrier in the return of internally displaced persons (IDPs) to areas of origin prior to the conflict.

Fraying societal connections are one of the pressing issues that is ever-present throughout the history of the governorate. Most recently, this challenge surfaced as a result of the military campaigns to quell ISIL. The governorate continues to experience ethno-sectarian conflicts, as it has for two decades since the US and allied invasion in 2003. Attacks by ISIL sleeper cells on farmers are a more recent problem. These events—and many others in the recent history of Diyala—have led not only to heightened sectarian tensions between Sunni and Shia Muslims, but also to spells of extreme violence and significant displacement as recently as 2022. The rise in insurgent attacks and takeover by ISIL of large areas of Diyala Governorate in 2013–14 also led to population displacement, particularly in Muqdadiya, where the group held territory and approximately 40 villages north of Muqdadiya City for several months.<sup>20</sup>

**Figure 2: Displacement and return dynamics<sup>21</sup>**



Current political and societal conditions in Diyala are equally complex, as the Government of Iraq and the KRG, as well as a range of state, non-state and foreign armed actors operate in the area. Competing interests on national, sub-national, and external levels are key drivers of conflict and instability. They also spill into issues of localized control, ranging from political spheres of influence due to the distributed nature of some of the locations, illicit activities through drug and weapon smuggling, or conflicts over natural resources.

**Peace, Fragility and Climate Change: Surveying the Interconnections**

The impact of climate change, and climate security in particular, is a multidimensional

problem-set, so any proposals to mitigate it must also take in the full range of factors and repercussions. The necessary multidimensional response therefore should encompass governmental policy efforts, a role for the international community, and community-level work to bolster and support resiliency.

In the MENA region, states, practitioners and the international community should view this issue from the perspective of the “peace-fragility-climate change” nexus.<sup>22</sup> All three factors intersect and impact each other, often working as a multiplier of fragility risks. Taking the case of Iraq, issues of climate vulnerability are at times reflected in rural-to-urban migration, causing tensions in urban centers. Disparate groups sometimes clash over reduced access

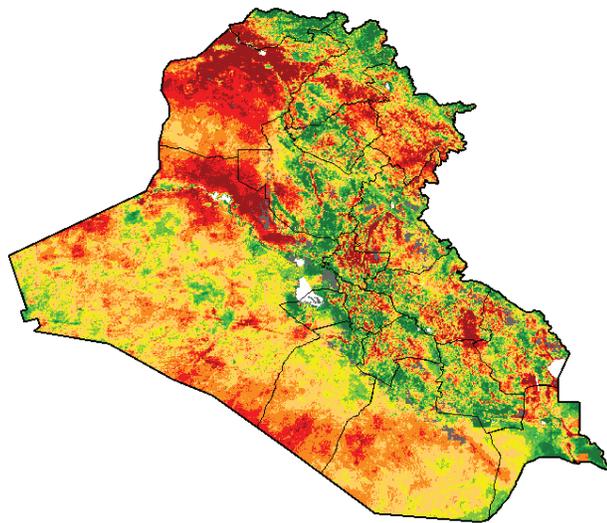
to natural resources, while non-state armed groups may exploit the perception of government inaction to enhance their legitimacy. These factors collectively contribute to broader civil unrest and security challenges.

communal peace and state legitimacy. Evidently, as seen previously through multitude of recent conflicts, these challenges transcend and impact nation states regardless of international border delineation.

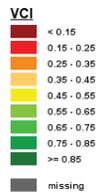
The combination of these challenges reinforces cycles of tension and threatens already-fragile

**Figure 3: WFP temperature and vegetation map of Iraq<sup>23</sup>**

Iraq



**Vegetation Condition Index (VCI)**  
May 2022  
METOP-AVHRR  
WGS84, Geographic Lat/Lon



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Disclaimer: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

## Recommendations and Areas of Further Investigation

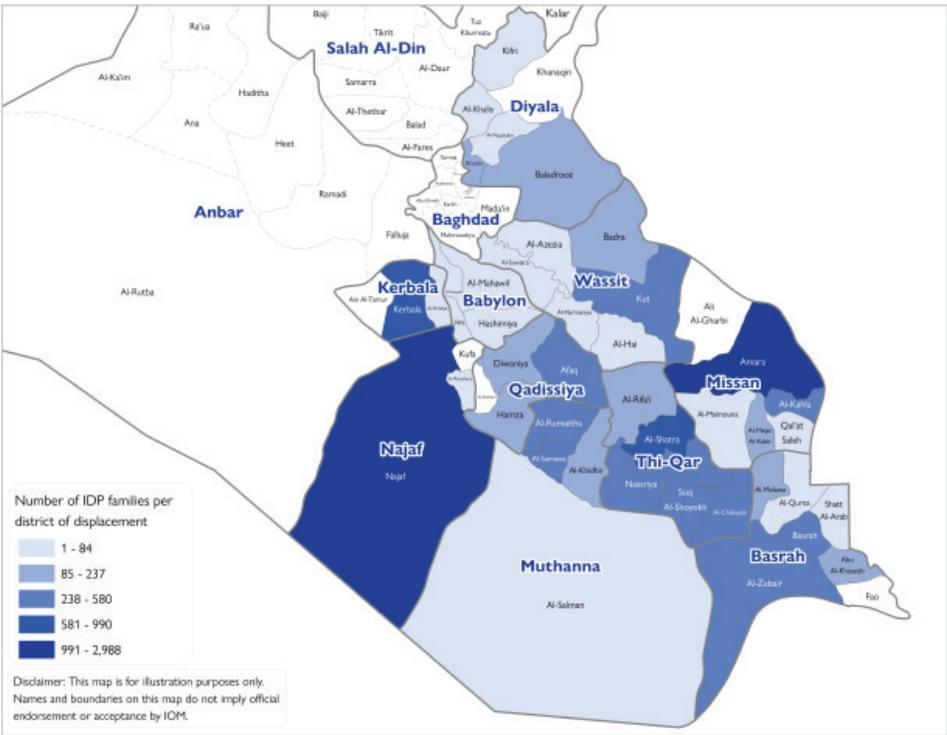
What can be done? What follows are a series of actionable recommendations and paths for further investigation. It is critical to highlight that actionable recommendations were limited by design to community and local government-level resilience-building for communities in transition and in post-conflict settings.

**The climate change – fragility – peacebuilding nexus is a cross-cutting issue.** Therefore, it should be treated as such. Climate change also is widely understood to be a threat multiplier—exacerbating conditions for conflicts, displacement, and human suffering. This must also be seen as part of the equation. Finally, the international community—be it supranational organizations, donor states, or NGOs—all have a critical role to play in driving discussions forward, centered around the connectivity of

climate change, fragility, and peacebuilding. Issues of climate change, nation-state resilience, and community resilience are all interconnected, and their impacts transcend borders.

**Climate adaptability and community resilience interventions that support social cohesion and community reconciliation should take climate security considerations into account, utilizing existing communal and governmental mechanisms.** This would include resource-sharing agreements, dispute resolutions, or governmental mechanisms for resource allocations (such as land allocation for agricultural use and water distribution). A growing body of evidence suggests that an integrated communal resiliency support should incorporate and target particular members of enabling communities to break the cycles of violence and instability, with the aforementioned background information in mind.

**Figure 4: Map of districts hosting families affected by climate-induced displacement<sup>24</sup>**



**Support connections between national and local governance.** Given the complexity and intertwined nature of climate vulnerability, stronger emphasis should be placed on identifying and strengthening the engagement around and connection between GoI efforts, civil society, and sub-national level. It is also necessary to encourage problem-solving dialogue processes that connect and engage local, provincial, and national actors.

**Support mediation and conflict resolution.** Considering the significant stressors associated with existing networks and natural resources, it is essential to emphasize support for established governmental and community dispute resolution mechanisms. For instance, in many of Diyala's districts, there are "water committees" that include the district's administrative head, representatives from water and agricultural directorates, as well as community and security stakeholders. Such communal and governmental infrastructure should be supported, engaged, and empowered to mediate conflicts stemming from resource constraints.

**Work must also be done at a national level.** This study focuses on one particular governorate and recommendations are made to address the sub-national and community level. This approach does not outline significant national level needs and gaps. There must be an articulation of the intersection of international and national civil society with Government of Iraqi efforts. These should be informed by and in alignment with: (1) the Government of Iraq's green paper detailing plans intended to assess and implement measures to mitigate the impact of climate change and support Iraq's net-zero transition;<sup>25</sup> (2) Support for the GoI in delivering the Nationally Determined Contribution (NDC), which is the plan to adapt to climate change and

reduce emissions;<sup>26</sup> (3) Support for access to climate technologies and existing governmental grants that promote a transition from traditional fossil fuels and outdated agricultural practices. This is equally important to support GoI advocacy and connection with the forthcoming UN COP28, around the climate peace, security agenda and advocacy around increased financing and support to conflict affected countries.<sup>27</sup>

**Additional research is necessary to understand the impact of climate change on historically vulnerable segments of society.**

While this was not the focus of this study, it was clear through numerous interactions and articles that vulnerable segments of Iraqi society are impacted at greater levels by climate change. Experiences with climate change and barriers to climate resilience vary significantly across groups, including women, youth, and persons with disabilities. Indeed, climate change exacerbates and amplifies structural inequalities. This is anecdotally evident in numerous interactions whereby segments of the population that depend on climate-sensitive occupations such as agriculture and manual labor for their livelihoods experience outsized impacts of climate change.

## Endnotes

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- 16 Given that the nexus of Fragility – Climate change – and conflict is an emerging field, there is no causal link that can be established, though it is useful to use this model to articulate the strong interplay links.
- 17 Ibid. CDA, Adelphi
- 18 According to ILA VI (IOM), 10 per cent of the respondents in Muqdadiya district report always relying on water trucking and 42 per cent report they sometimes do. Damage to water network, absence of sewer network and insufficient water treatment infrastructure are widespread in the two districts. Garbage collection and solid waste management have also been identified as a challenge, with 32 per cent of the ILA VI respondents in Khanaqin and 42 per cent in Muqdadiya declaring that no such service is available in their location.
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## About the Author



**Abdullah J. Alfayadh** is an international development and peacebuilding practitioner with over 9 years of experience internationally and in the MENA region. He currently works as part of the United Nation's Iraq Mission, specifically with the International Organization for Migration (IOM) as a Program Coordinator overseeing a programming portfolio of three governorates in Central and Northwest, Iraq. In Particular, Abdullah oversees programming that supports community resilience and cohesion, reintegration, and support to communal peace through direct support and partnerships with community groups, including CSO, CBOs, and Local Peace Mechanisms. Prior to joining the Iraq IOM mission, Abdullah was a Program Manager with Chemonics international in Iraq, Nepal, and Tunisia with a diverse technical focus, most recently on post-conflict recovery and social cohesion. He holds a Master of Arts in International Relations from the University of Manchester, UK, and a Political Science Bachelor's degree from Elizabethtown College, US.

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