IOM IRAQ

MIGRATION, ENVIRONMENT, AND CLIMATE CHANGE IN IRAQ

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The International Organization for Migration (IOM) is committed to the principle that humane and orderly migration benefits migrants and society. As an intergovernmental organization, IOM acts with its partners in the international community to: assist in meeting the operational challenges of migration; advance understanding of migration issues; encourage social and economic development through migration; and uphold the human dignity and well-being of migrants.

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ACRONYMS

COP	Conference of the Parties to the United Nations Framework Convention on Climate Change
DTM	Displacement Tracking Matrix
GCM	Global Compact on Migration
IDP	Internally displaced persons
IMRF	International Migration Review Forum
IOM	International Organization for Migration
ISIL	The Islamic State
NDC	Nationally determined contribution
NRC	Norwegian Refugee Council
UN	United Nations
UNEP	UN Environment Programme
UNESCO	The United Nations Educational, Scientific, and Cultural Organization
UNM	United Nations Network on Migration
WFP	World Food Programme

PART 1: BACKGROUND

1.1 INTRODUCTION

Iraq has been named the fifth-most vulnerable country to climate breakdown[1], affected by soaring temperatures[2], insufficient and diminishing rainfall[3], intensified droughts and water scarcity[4], frequent sand and dust storms[5], and flooding[6]. Compounding this, water policies in neighbouing countries have shrunk vital water sources[7], while rapid population growth, urbanization, and inefficient water use by the agricultural and industrial sectors is propelling a demand for more water[8]. Without preparation and planning, the scale of environmental change is likely to be devastating and may force Iraqis to relocate in order to survive. Climate migration is already a reality in Iraq. At the end of 2021, IOM recorded approximately 20,000 people displaced due to water scarcity (looking at only 10 of Iraq's 19 governorates), high salinity, and poor water quality across Iraq[9], while a 2021 study by the Norwegian Refugee Council found that in drought-affected areas, 1 in 15 households had a family member forced to migrate in search of work[10]. As environmental changes intensify, displacement is likely to increase exponentially.

Preparing for and addressing the risks associated with climate-induced migration requires urgent and coordinated action. This report reviews the state of climate migration in Iraq, and considers how the Government of Iraq, international actors, and communities can mitigate, address, and prepare for its consequences. Timing is vital, and this year presents several critical opportunities to address climate migration in key international and national policy frameworks. This report identifies opportunities for action, sets out key issues related to climate migration, and concludes by offering recommendations for strategic engagement on the issue of climate migration over the next 12 months.

1.2 OPPORTUNITIES FOR ACTION

Climate migration is addressed through several key international and national forums and policy frameworks. It is vital to engage and leverage these existing structures as they provide Iraq with possibilities to access, advocate for, and allocate financial resources, technical support and capacity-building, and technological transfer to address the challenges associated with climate migration. This section maps the key bodies and forums that currently exist and the specific entry points each offers.

THE INTERNATIONAL MIGRATION REVIEW FORUM

The International Migration Review Forum (IMRF), the inter-governmental body responsible for reviewing progress on the Global Compact for Safe, Orderly and Regular Migration, will hold its inaugural conference on 17-20 May 2022. The IMRF provides a vital opportunity to reinforce the relevance and timeliness of the Global Compact, assess its impact to date, and ensure that it can equip societies for future challenges. Climate migration is firmly on the agenda, thanks to the second report of the Secretary-General on the progress of the Global Compact which recognized the severe impact climate change has on migrants and communities. The IMRF will conclude with an inter-governmental Progress Declaration, and it is vital to develop tangible, ambitious and actionable pledges that can address the issue of climate migration.

The Progress Declaration is expected to cover the following points, which – depending upon the final text and global political commitment – will provide an important framework for future action and advocacy:

- States recognize that the adverse effects of climate change and environmental degradation are among the drivers of migration, which are influenced by economic, social, political and demographic contexts.
- Efforts to mitigate and adapt to the adverse effects of climate change have been insufficient, including in climate finance, and there are clear gaps that remain in anticipating, preparing for and responding to events that might trigger large movements of migrants.
- States commit to strengthen our efforts to enhance and diversify the availability of pathways to facilitate safe, orderly and regular migration, including for those affected by climate change and environmental degradation, and will work coherently across multilateral fora to achieve this.

COP-27

The Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change is a two-week conference that has taken place annually since 1995. The 27th session of the COP (COP-27) will take place from 7-18 November 2022 in Sharm El-Sheikh, Egypt. The COP is a formal negotiating session for countries to advance their climate commitments and actions and discuss the climate crisis and solutions. The Paris Agreement,

which gave the world its first universal global agreement on climate change, was reached at COP-21 in 2015 and now provides the structure and orientation for the annual COP negotiations. The COP-27 is particularly strategic since it will focus on raising money for less-resourced nations, making it a vital opportunity to ensure Iraq's needs are firmly placed on the global agenda. Its location in the MENA region will also draw attention to Iraq.

The COP-27 will build on the achievements of the COP-26, which included agreement that adaptation is equally as important as reducing emissions, and consensus that much more support needs to be provided to developing countries with respect to finance, adaptation, capacity-building, and technological transfer. With regard to climate finance, the COP-26 resulted in new climate finance announcements, commitments by international finance institutions to back climate action, and the creation of the Taskforce on Access to Climate Finance. These structures offer a foundation for raising further funds for less-resourced nations via the COP-27. In addition, the risk and impact of climate migration is expected to play an important role on the COP-27 agenda, as foreshadowed at the COP-26, which committed to scaling up action, support, and finance to avert, minimize and address climate displacement via the Task Force on Displacement Recommendations.

IRAQ'S GREEN PAPER

Iraq commenced work on a national 'Green Paper' in early 2022. The Green Paper is intended to assess and implement measures to mitigate the impact of climate change and support Iraq's net-zero transition, with an emphasis on the economy. At the Second International Water Conference held in Baghdad in March 2022, the Minister of Planning confirmed work had commenced on the Green Paper, and that the Council of Ministers has set up a committee to oversee its preparation and drafting[11]. The UN is actively engaged in the consultative process of drafting the Green Paper, and the UN Network on Migration will play a key role in making submissions related to climate migration.

IRAQ'S NATIONALLY DETERMINED CONTRIBUTION

The Paris Agreement (ratified by Iraq in 2021) requires Parties to put forward their best efforts through 'nationally determined contributions' (NDCs). The Government of Iraq finalized its updated NDC in 2021, which now forms the umbrella policy for climate change work in Iraq. The GoI committed to cut 1-2 percent CO2-equivalent emissions from industry, take a range of mitigating measures related to the energy sector, and open a window for US$100 billion investment in green economy over the next 10 years. However, while the commitments in the NDC are commendable, the NDC document does not acknowledge the risk or impact of displacement due to climate change, or the need to prepare or build resilience. These gaps undermine the allocation of resources and actionable commitments to mitigate and address climate migration, as well as leverage the contributions of migrants.

IRAQ'S NATIONAL ADAPTATION PLAN

In 2020, the Government of Iraq started the process of developing a National Adaptation Plan (NAP) in partnership with the United Nations Environment Programme to help build the country's resilience to climate change. It also established the Permanent National Committee on Climate Change and the National Climate Change Center. Funded by the Green Climate Fund, the NAP will be developed and implemented as part of a three-year project with a particular focus on strengthening institutional, technical and financial capacities. The project will help to identify areas for resource mobilization, analyse gaps in institutional capacity, and suggest ways to address capacity gaps, and build awareness about the NAP with stakeholders within and outside Iraq. The NAP is also expected to identify, assess and bridge existing gaps in climate knowledge, and carry out climate risk assessments to identify the livelihoods and sectors most threatened by climate impacts, as well as the most urgent adaptation priorities. The NAP planning process provides an opportunity to ensure that migration, displacement and planned relocation are fully addressed, as both potential challenges and potential opportunities. Human mobility is an important consideration for the NAP since there is a need to avoid displacement or migration that erodes human welfare, and also a need to understand how to capitalise on the potential for migration where it functions as a viable adaptive strategy.

INTER-MINISTERIAL TECHNICAL WORKING GROUP ON MIGRATION AND NATIONAL STRATEGY FOR MIGRATION MANAGEMENT IN IRAQ

In 2020, the Government of Iraq established a Technical Working Group on Migration (with the technical support of IOM), to implement the provisions of the Global Compact for Migration[12]. In October 2020, the National Strategy for Migration Management was endorsed by the Government of Iraq, which is the migration policy framework for implementing the Global Compact for Migration in Iraq[13][14]. As the key institutional pillars for implementing the Global Compact for Migration in Iraq, the Technical Working Group and National Strategy for Migration Management are vital resources to engage in policy decisions and planning related to climate migration.

The National Strategy for Migration Management recognizes the importance of preparing for and responding to climate migration. It also noted that there is currently no contingency planning for climate migration and recommended addressing this issue in the National Disaster Risk Reduction Strategy. The Technical Working Group is pledging to broaden its membership to include a representative from the Ministry of Environment; this pledge is being championed by the Government of Iraq delegation to the IMRF and signals that climate migration needs to be addressed through a whole of government approach.

As part of the Technical Working Group on Migration, the Government of Iraq also established an Economic Affairs Taskforce which is mandated to address Strategic Objective 4 of the National Migration Management Strategy, namely, to manage migration as a source of sustainable development. The Taskforce validated the issue of climate migration as a priority within the roadmap outlining its work. In particular, the Taskforce noted the need to improve understanding of key mobility challenges arising from environmental crisis, degradation and climate change, and sustainable development adaptation measures; and to mainstream migration management into government activities addressing environmental degradation and climate change (amongst others). The Taskforce offers an important forum for policy decisions and coordination related to climate migration in Iraq.

UN NETWORK ON MIGRATION – IRAQ

The United Nations Network on Migration (UNM) was created with the adoption of the Global Compact for Migration, in order to ensure effective, timely and coordinated support to Member States for the implementation of the Global Compact. Climate change and migration is a priority of the UNM in 2022, with a dedicated workstream set up to guide its activities in this area. In Iraq, the UNM will ensure effective and coherent support in the implementation, follow-up and review of the Global Compact. It will also support UN agencies and the GoI to prepare key messages for the IMRF and COP-27, and advocate for the inclusion of climate migration in Iraq's Green Paper and future NDC discussions. Later in this report, the recommendations reflect on how the UNM can strengthen its role in Iraq in this critical upcoming period.

1.2 ANALYTICAL FRAMEWORK

This report was developed based on a literature review of academic, policy, and grey literature, as well as interviews with key informants. It is framed around several key concepts:

First, climate change alone does not produce the conditions that push people to move. Human factors are just as important in forcing people to relocate – in Iraq, this includes poor water resource management, outdated agricultural techniques, pollution, and reduced water flow caused by upstream countries. These factors are equally important to address since they intensify the impact of climate change. Therefore, this report recognizes the need to address the impact of **environmental change** more broadly**,** defined as:

Changes in the physical and biogeochemical environment, over a large scale, either caused naturally or influenced by human activities (including industrial accidents), either through fast-onset or slow-onset events, and including both environmental degradation and climate change[15].

Second, identifying climate migrants can be extremely difficult. It is easier to identify people who flee 'sudden-onset' events such as floods or hurricanes, since they move rapidly and in large groups. However, people affected by 'slow-onset events' such as drought, salinisation, or land degradation tend to move gradually over time, as the environmental changes become too much to bear[16]. Yet while they may have time to plan, this does not mean that they are 'choosing' to move or are better equipped; in fact, they are often forced to move in order to survive, due to an inability to sustain any livelihood[17]. These dynamics blur the line between 'displacement' and 'migration,' and throughout this report both terms are used, to recognize the spectrum of agency that people may possess.

Rather than trying to distinguish displacement and migration, the report tries to draw attention to the key dimensions of movement,[18] which are:

Societal: How many people are affected?

Temporal How long are they migrating for?

Spatial: How far are they moving?

Agency: What degree of agency do they have?

Recognizing how difficult – and counter-productive – it is to separate climate change as a singular driver of movement, the report takes a broad and inclusive approach to the terms **climate migrants, or environmental migrants,** which are defined as:

Persons or groups who, for reasons of sudden or progressive change in the environment that adversely affects their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad.[19]

Third, it is notoriously difficult to predict climate migration patterns. Not everyone affected by climate change will decide to migrate. In fact, those most vulnerable to climate change may not move at all, since they don't have the resources needed to relocate.[20] Instead, each family will have its own 'tipping point,'[21] when the environmental changes exceed their ability to cope.[22] This unique tipping point is reached by weighing multiple factors: the intensity of the weather changes, personal resources, and underlying socioeconomic, cultural and political processes that affect resilience and the degree of support available.[23] This paper utilizes the idea of a 'vulnerability profile' to help identify households or communities at greater risk of climate migration. While it does not attempt to predict exactly who will migrate and at what scale, it offers an initial mapping of vulnerability factors as a basis for future modelling on this topic.

Figure 1: Anjam Rasool/IOM Iraq

PART 2: IRAQ

2.1 DRIVERS OF DISPLACEMENT LINKED TO ENVIRONMENTAL AND CLIMATE CHANGE

Environmental changes are increasingly driving internal displacement across Iraq. Sometimes, environmental changes themselves drive displacement (such as the case of drought and flooding), while other times, environmental changes generate risks to human well-being – such as pollution or health conditions – which in turn drive displacement. Key drivers of displacement and migration are set out below.

Persistent drought and water scarcity: Iraq has experienced recurrent drought since the 1970s and today water scarcity is a key environmental driver of displacement, in large part because it results in the loss of livelihoods but also because it exposes people to lack of adequate water supply, food insecurity, increased pollution, and health risks (discussed further below). Water scarcity is likely to continue in future, with mean annual precipitation expected to decrease by 2050, including drops as high as 17 percent during the rainy season.[24]

In the southern regions of Iraq and west Nineveh, water scarcity is already contributing to a humanitarian crisis and driving displacement. Water scarcity hampers crop production, leads to crop failure, limits the availability of drinking water and feed for livestock, and has forced many agribusiness activities to close. In northern Iraq, while the human impact is currently more manageable, water scarcity still hampers vegetable production particularly in the summer months when rainfall is low, exacerbated by the wide use of surface irrigation that results in high water losses.[25]

High temperatures and heatwaves: Model projections indicate an increase in mean annual temperature of 2°C by 2050, and an increase in the occurrence of extreme temperatures above 50°C by 2100.[26] In southern Iraq, such extremes will last up to 21 consecutive days.[27] High temperatures and heatwaves have an impact on livelihoods, food insecurity, and health risks, which in turn contribute to displacement.

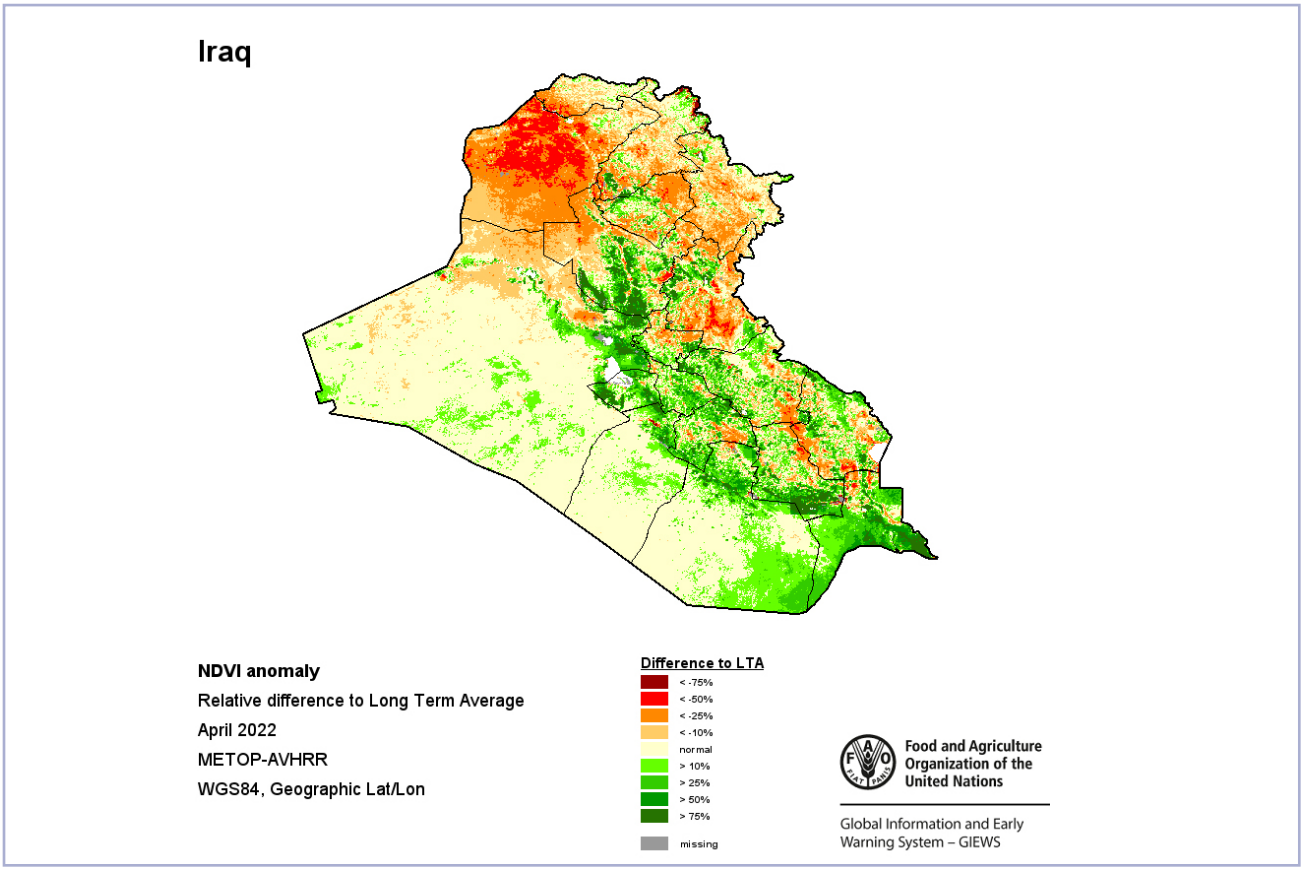

Figure 2: Vegetation difference compared to longterm average - April 2022 image courtesy of FAO GIEWS

Sand and dust storms: Sand and dust storms, which typically affect the Tigris and Euphrates river valleys in summer (and to varying degrees, adjacent provinces), are likely to increase in the future and reach up to 300 events per year, as opposed to 120 that are currently recorded.[28] Their intensity and frequency has increased due to low soil moisture caused by the interplay of drought, urbanization and agricultural activities. Dust storms cause direct crop damage and reduce visibility, disrupting key value chain operations such as air and road transport and causing an overall loss of human productivity.[29] Sand and dust storms also increase desertification, drought and soil salinity, as well as decreasing water resources. This has severe implications for people's livelihoods as well as their health.

Erratic heavy rains and flooding: Although mean annual precipitation is expected to decrease by mid-century, rainfall events will become more intense.[30] Flooding has become more frequent in recent years, with hotspots located along the southern stretch of the Tigris–Euphrates river system.[31] Flooding is often caused not only by heavy rain, but by the greatly reduced capacity of soil to absorb precipitation as a result of land degradation, caused in part by common farming practices. Heavy rains and flooding also constitute a health risk, since they can aggravate the spread of water-born diseases. In addition, starting from 2003, the mean sea level observed on the Iraqi coast has been 5 mm – 100 mm above historical average, with the anomaly intensifying in recent years.[32] By 2050, the southernmost districts of Iraq, including the second-largest city, Basra, could be partially submerged as a result of rising sea waters.[33]

Water and soil salinity: The waters of the Tigris and Euphrates Rivers contain large amounts of salts, and flooding and poor irrigation practices contribute to spreading this salt on the land. A high water table and poor surface and subsurface drainage mean that the salts tend to concentrate near the surface of the soil, which reduces soil quality. This threatens crop production in the southern regions where it may be exacerbated by rising sea levels.[34]

Water and soil pollution: Water scarcity is worsened by pollution caused by increased salinity, industrial waste, pollution caused by oil and gas, large infrastructure dam projects in the region, and lack of water and sewage treatment facilities.[35] Poor water quality threatens agricultural livelihoods, since it affects the quality and quantity of crops cultivated and the availability of clean water for livestock. Marsh dwellers in southern Iraq, for example, have been forced to relocate due to the quality of water (in addition to its scarcity) due to their water buffalos needing a clean water supply. Water pollution also constitutes a public health issue: in Basra alone, 118,000 people were hospitalized because of health issues related to water quality in the summer of 2018.[36]

Health risks: Environmental and climate changes can have significant health consequences, which may in turn contribute to displacement. Health risks include injury and mortality from extreme weather events; heat-related illness; respiratory illness; waterborne diseases; vector-borne diseases; malnutrition and foodborne diseases; noncommunicable diseases; and mental and psychosocial health.[37] In Iraq, population exposure to heat stress is likely to rise in the future, due to increased urbanization and the likelihood of severe heat waves; increased drought and flooding will raise the risk of water contamination if water and sanitation infrastructure and services cannot cope; and sand and dust storms will increase the risk of respiratory problems. These factors are all likely to contribute to displacement and migration.

Food insecurity: Food security is an ongoing concern in Iraq; it is estimated that approximately 1.77 million people in Iraq are susceptible to food insecurity.[38] The loss of agricultural livelihoods (due in part to environmental and climate changes), together with limited agricultural productivity, conflict, displacement and lack of income contribute to food insecurity and nutritional concerns. The poorest populations who rely on government food rations are unable to supplement these rations with fresh, nutritious food and so are at increased risk of health burdens associated with malnutrition.[39] Climate change is likely to exacerbate these existing challenges, with crop productivity threatened by weather extremes, rising temperatures and changing precipitation patterns.[40]

2.2 CLIMATE MIGRATION IN IRAQ

This section identifies the regions of Iraq most affected by cumulative environmental changes. It maps the patterns of displacement and migration to date, and highlights anticipated future displacement.

SOUTHERN IRAQ

Basra, Missan and Thi-Qar – the three governorates that make up southern Iraq – have witnessed the highest number of water-induced internal displacement throughout the past decade, due mainly to water scarcity, pollution and soil salinity. In some villages, particularly in Thi-Qar, up to half of all homes were abandoned.[41] Water shortages triggered almost 15,000 new displacements in Thi-Qar, Missan and Basra as of January 2019,[42] and in November 2021, IOM recorded 12,348 individuals (2,058 households) displaced from southern Iraq due to drought.[43] Historical data also indicates displacement due to drought.[44]

In southern Iraq, an estimated 8 percent of households (3 percent in Basra, 13 percent in Thiqar, and 13 percent in Missan) are fully reliant on agriculture, livestock, or fishing and have no alternate source of income (such as from employment in government or security forces), equating to roughly 75,000 people.[45] Over the past 5 years, many families have fully abandoned agricultural livelihoods, where 7 percent of all farming households (4 percent in Basra, 12 percent in Thiqar, and 8 percent in Missan) have abandoned their livelihood.[46] Often, abandoning agriculture is often coupled with migration, and 20 percent of households in southern Iraq who abandoned farming report that one member migrated in past five years (a rate much higher than non-agricultural families) while another 30 percent indicate a preference to migrate.[47]

Flooding is another significant risk in southern Iraq. Torrential rainfall has caused extensive flooding in Basrah and Missan, damaging or destroying homes and displacing entire communities in affected districts.[48] In Basra, an additional climate hazard is the likelihood of flooding caused by a rise in sea levels. By 2050, the southernmost districts of Iraq (predominantly Basra but also Missan and Thi-Qar) may be partially submerged as a result of rising sea waters.[49] The resulting intrusion of saltwater in groundwater aquifers could further disrupt irrigation and farming activities, exert additional pressure on arable land and cause displacement of entire communities.[50]

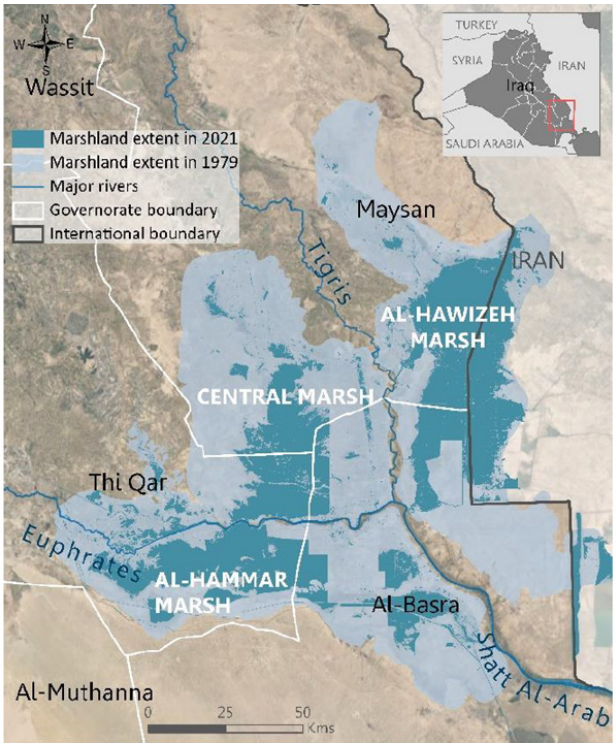

Figure 3: GIS imagery illustrates the extent to which the marshland coverages has reduced between 1979 and in 2021, image courtesy of REACH Initiative

CENTRAL IRAQ (SOUTH OF BAGHDAD)

Central Iraq – the governorates of Karbala, Qadissiya, Muthanna, Najaf, and Wassit, have also been affected by climate migration due to water scarcity. In 2019, 5,922 people (987 families) were displaced from these governorates due to water scarcity, high salinity, and pollution.[51] As the chart above indicates, in November 2021, IOM recorded 5,838 individuals (973 households) displaced from these provinces[52]. All affected areas were rural, and people mostly displaced to urban areas to find alternative sources of income[53]. Areas around Baghdad are also affected by environmental changes. By late 2016, at least 160 farmers had abandoned their land in the subdistrict of Al-Jisr, while 2,000 families from the wider area reportedly migrated into urban Baghdad or abroad.[54]

One forgotten population that suffers from environmental changes in Iraq's Bedouin population. Located mainly in Babil and Wasit provinces, decades ago the Bedouin population numbered in the hundreds of thousands, but due to deterioration of conditions in the desert there are now only several hundred people left[55]. Bedouin are forced to travel longer distances in search of food for their livestock and new conflicts have emerged between Bedouin families over grass for their sheep since the supply is low.[56] The unbearable summer heat and poor desert conditions has pushed many Bedouin to relocate to nearby villages and towns, where they sell their livestock in order to rent farming land.[57] They fear that their way of life could disappear within a generation, particularly as their relationship with the government is characterised by very low levels of trust and marginalization.[58]

CENTRAL IRAQ (NORTH OF BAGHDAD)

The provinces located north of Baghdad – Ninewa, Kirkuk, Salah al-Din and Diyala – are affected by water scarcity and related problems, but there is less information available on displacement caused by environmental changes. This may be in part because displacement is invisible due to a lack of systematic tracking mechanism. Diyala is at risk of drought and water shortage due to its reliance in Lake Hamrin, where water levels have dropped significantly since 2020, and this has affected agriculture and prevented IDPs from returning.[59]

Water scarcity has caused significant displacement in two districts of Ninewa, Al-Ba'aj and Hatra. As of 14 December 2021, IOM recorded a total of 1,818 people (303 families) displaced due to drought conditions. While seasonal displacement is common in these areas, the rate of displacement in latte 2021 was much higher due to low precipitation and reduced vegetation, which meant households could not provide fodder for their livestock. Most displaced to urban areas, including Erbil, Ba'aj center, Mosul, and Tal Afar.[60] Almost all of those displaced were returning IDPs (originally displaced during the war with ISIL) which likely contributed o their inability to cope, since their resources were already depleted by years of displacement and the cost of trying to repair homes and farms damaged by war.

Makhoul Dam

Makhoul Dam is located between Kirkuk and Salah al Din governorates. The Government of Iraq reinitiated work to expand Makhoul Dam in January 2021, which is expected to be completed within five years. The stated goal is to create a reservoir with a capacity of three billion cubic meters to address Iraq's water scarcity crisis. However, the project has generated serious concerns about its viability and impact. If the proposed expansion continues, it is anticipated to disrupt the lives of some 118,412 individuals. The Makhoul Dam basin includes 39 populated villages, meaning that over 150km^2 of inhabited villages will be flooded and 67km^2 of farmland submerged. Up to 61,000 heads of cattle may also be lost, inducing food security concerns for the entire country.[61] More than 395 civilian facilities (schools, clinics, water and electric plants, cemeteries, sports fields, cultural centers) would also be flooded, depriving the local communities of essential services like health and electricity, potable water, education, and sewage.[62] An estimated 67.65km^2 of fertile farmland, estate, and orchards will be erased over the upcoming five years if the dam becomes operational at full capacity. Burial sites and cemeteries would also be flooded.[63]

Since work started, there have been no attempts to assess civilian infrastructure losses, including health facilities, water and electricity and schools, or the social and cultural losses that may result. Inventories pertaining to households and communities have not been featured in any state-level plans[64]. There has been no official attempt to speak or engage with communities. Respondents who are farmworkers and landowners saw Makhoul Dam as a severe threat to their livelihoods, and this is particularly the case for the relatively high number of female-headed households, who currently work in small-scale farming and hold a high concern about future food insecurity.[65]

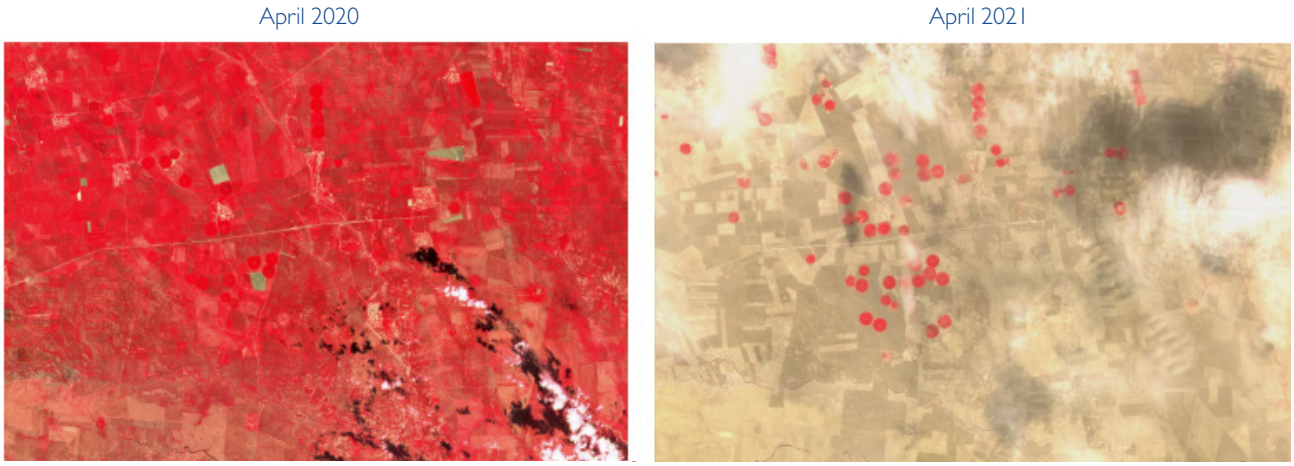

Figure 4: Image showing vegetation coverage between April 2020 and April 2021 in assessed areas in Ninewa Governorate. Red indicates the presence of vegetation, with a clear decline in vegetation coverage between the two years. Image courtesy of World Food Programm, Iraq, 2022.

WESTERN IRAQ

There is very little data available on climate displacement in Anbar. This may be because people in these areas are less affected by environmental changes; however, it may also be that displacement is invisible due to a lack of systematic tracking mechanism.

KURDISTAN REGION OF IRAQ

Although provinces in the north of Iraq may also be vulnerable to drought due to relatively lower levels of rainfall, the region overall has relatively higher water resources than the provinces in the south.[66] UNESCO recorded more than 100,000 people in northern Iraq displaced from their villages due to severe water shortages between 2005 and 2009, caused by the collapse of ancient underground aqueducts (known as karez) that triggered severe water shortages.[67] The karez are located mostly in the provinces of Sulaymaniyah (84 per cent) and Erbil (13 per cent). Since then, Erbil has received a small number of IDPs due to water scarcity, but no displacement is recorded as originating from the KR-I.

2.3 IMPACT OF CLIMATE MIGRATION

The impact of climate migration can be devastating, not only for displaced people but also their communities of origin and receiving areas. This section reviews the human impact of climate migration for these different populations.

CLIMATE MIGRANTS

People forced to migrate due to environmental factors rarely find themselves in a better position after migrating. This is particularly the case for women, who are often involved in household farming activities and find it hard to secure alternative livelihood options, due to conservative social norms that consider certain occupations unsuitable for women.[68] Half of all migrant households interviewed in one study reported that they cannot afford enough food or basic items, and did not have access to a financial safety net. This poor economic status forces most climate migrants into old and degraded areas of urban centres, or into former agricultural areas in the outskirts of urban centers,[69] where they often face insecure tenure arrangements.[70] Migrants also tend to report higher levels of exclusion from access to public services and other rights, including policing and formal dispute resolution.[71] Most are employed in low-wage jobs in the informal sector and (unlike the host population) do not have access to government employment or long-term contracts. To date, climate migrants do not appear to be employed at a higher rate in armed groups, although ISIL was known to have exploited grievances held by farmers in agricultural areas who were struggling to survive.

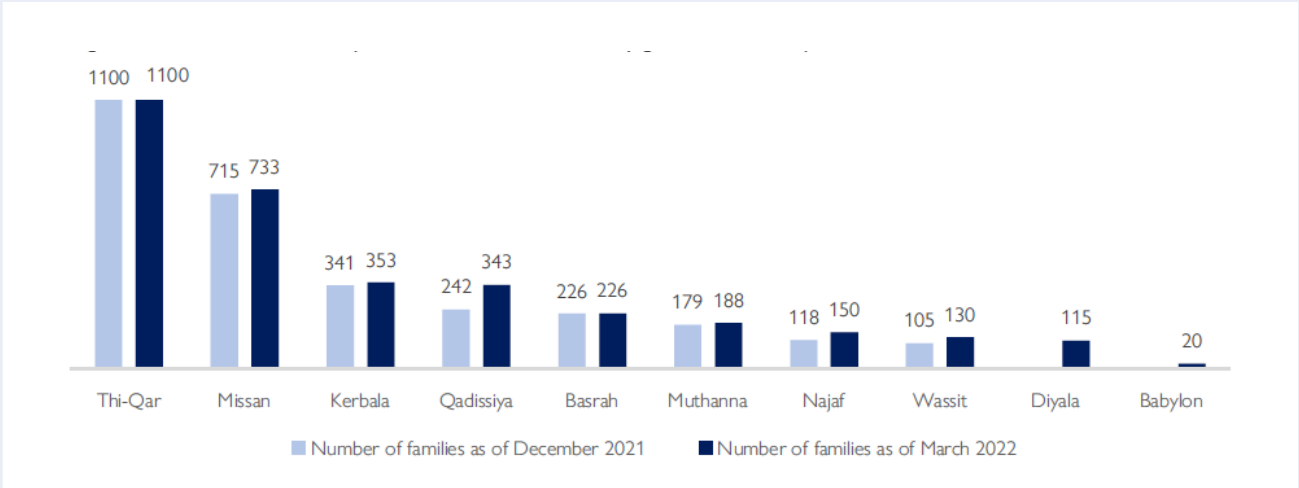

Figure 5: Number of families displaced due to climate factors by governorate of displacement as of March 2022, reported by IOM's Displacement Tracking Matrix (DTM)

Most drought-related displacement in Iraq is permanent rather than seasonal. Even marsh dwellers, who have always moved within the wetlands, view their current movement as forced and permanent since they can no longer rely on the wetlands to sustain a livelihood.[72] Most often, families move together, although sometimes the head of household and other male members move first, leaving the women behind to sell any family assets before joining them.[73] The most common strategy to facilitate movement is to sell land, livestock, and houses in the place of origin, again suggesting a permanent move.[74] It is uncommon for migrants to remit money to their family in their place of origin.[75]

COMMUNITIES OF ORIGIN

Rural depopulation and the loss of social capital in rural areas is an emerging concern. The migration of farming families undermines community cohesion and those left behind also lose some of their agency because their voice is less audible to authorities.[76] Depopulation can also introduce new security risks to the remaining community, due to abandoned housing and agricultural land and an increase in criminal activities due to lack of alternate livelihoods. As more people move, the economy will shrink and job opportunities will further reduce. Beyond depopulation as a push factor in and of itself, the wellbeing of those who remain – as well as those who left – real or perceived, also influences people's decisions to move.[77] While people may be willing to return given the right conditions, the question is whether these communities have already crossed a point of no return, given the magnitude of the environmental challenges and the fact that they liquidate assets in order to migrate.[78]

URBAN CENTRES AND OTHER HOST LOCATIONS

Most people displaced by environmental factors in Iraq move to urban centers. These urban centers often already struggle to provide basic services to residents and lack the resources needed to upgrade municipal services and infrastructure to cope with the increase of new migrants. In this context, the public's perceptions on migration are overwhelmingly negative due to a perception that they take economic opportunities and increase the strain on services,[79] and local authorities sometimes blame migrants for a rise in crime, poor service provision, and unemployment.[80] This contributes to an 'us versus them' divide and on some occasions, farmers have accused monied newcomers of expropriating farmland for housing, or bribing water officials to prioritize their needs.[81]

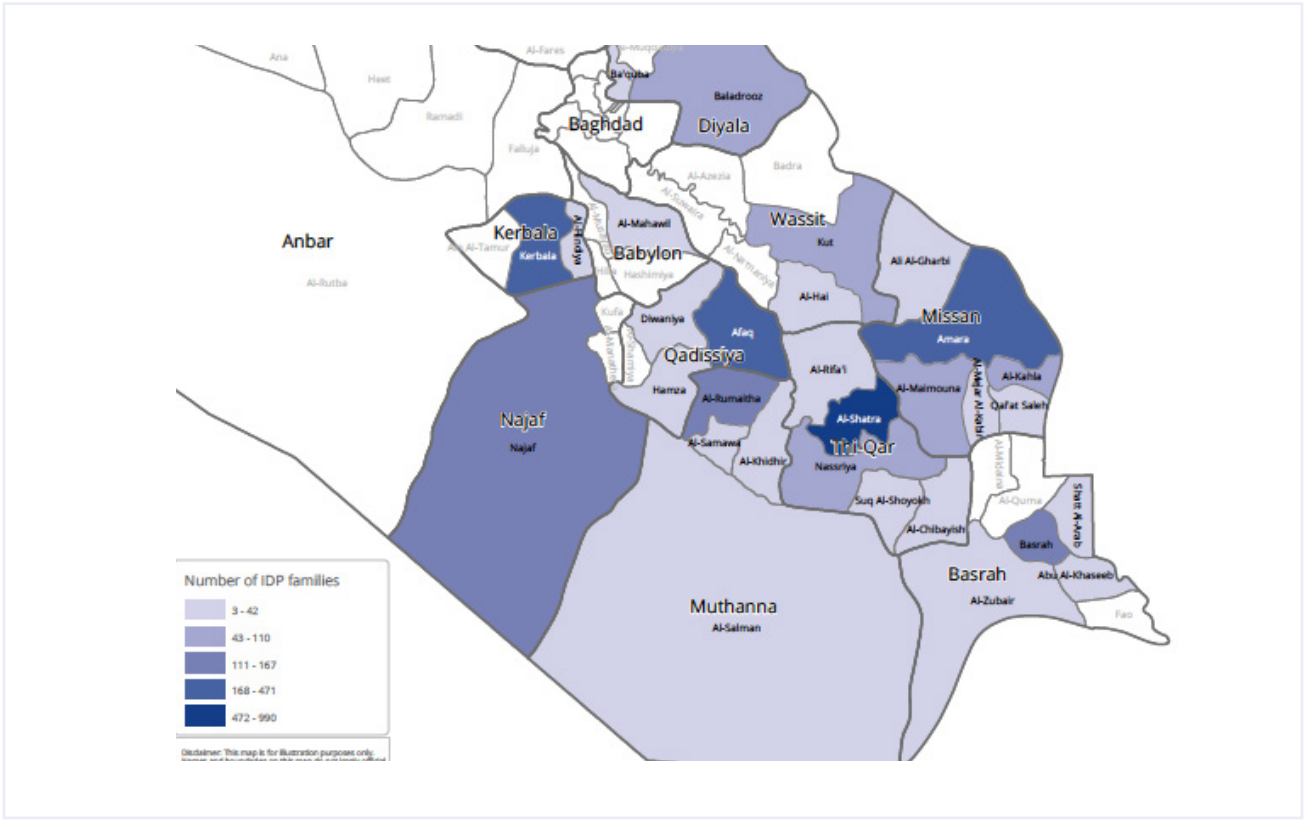

Figure 6: Districts hosting families affected by climate-induced displacement as of March 2022, reported by IOM's Displacement Tracking Matrix (DTM)

DURABLE SOLUTIONS FOR IDPS AND RETURNEES

Climate and environmental changes are undermining durable solutions for IDPs displaced by the war with ISIL. Nearly three-quarters of IDPs living in Iraq reside in high deficit precipitation zones, making them vulnerable to the effects of climate change.[82] IDP households are often forced to change their place of residence to reduce expenses in light of drought conditions or because livelihoods are not feasible, and this secondary (or even tertiary) displacement exhausts IDP resources and undermines their resilience. In the governorate of Dohuk, for example, 16 percent of IDPs reported that a family member had migrated over a thirty-day period as a result of water scarcity.

Durable solutions for returned IDPs are also undermined by environmental and climate changes. Areas formerly under control of ISIL – which are now experiencing high rates of IDP return – are some of the most affected by water scarcity, and IDPs returning to these areas often struggle to stay due to the lack of livelihood options. In Hawija, for example, a quarter of returnees have already had a family member forced to migrate as a result of the drought,[83] while in west Ninewa, 1,800 newly returned IDPs were forced to re-displace due to the drought and associated crop failure.[84] The loss of vegetation due to drought is a serious issue across areas formerly under ISIL occupation, as the map below indicates. Ninewa is particularly affected: very little vegetation survived the 2021 drought, since only a small number of fields were equipped with center-pivot irrigation systems that enabled them to be cultivated. The remainder of cultivation areas failed, and unable to survive without a livelihood, many returnee families were forced to displace.

The extent of IDP and returnee vulnerability to environmental change is revealed in the indicators collected by IOM Iraq's Displacement Tracking Mechanism (DTM). These indicators may be utilized when compiling vulnerability profiles, discussed in the next section.

IDP and Returnee vulnerability to climate change – A review of indicators

Figure 7: Anjam Rasool/IOM Iraq

Integrated Location Assessment 6 (May-July 2021)			
	Indicator	# HHs	# Persons
1	IDP families in rural locations	4,158	24,948
2	IDP families in locations where families are reliant on agriculture, livestock or fishing as a main source of income	2,115	12,690
3	IDP families in locations where less than half have sufficient access to water for drinking and domestic needs	11,164	66,984
4	IDP families in locations with issues with the quality, taste or colour of potable water in the past 3 months	43,447	260,682
5	IDP families in locations where arable or grazing land is present but not usable due to damage, land mines, lack of irrigation, under-investment	796	4,776
6	IDP families in locations without sufficient irrigation	1,483	8,898
7	Returnee families in rural locations	321,064	1,926,384
8	Returnee families in locations where families are reliant on agriculture, livestock or fishing as a main source of income	312,297	1,873,782
9	Returnee families in locations where less than half have sufficient access to water for drinking and domestic needs	87,799	526,794
10	Returnee families in locations which sometimes or always rely on water trucking	273,190	1,639,140
11	Returnee families in locations with issues with the quality, taste or colour of potable water in the past 3 months	335,605	2,013,630
12	Returnee families in locations where arable or grazing and land is present but not usable due to damage, land mines, lack of irrigation, under-investment	32,077	192,462
13	Returnee families in rural locations without sufficient irrigation	130,196	781,176
Return Index 14 (October-December 2021)			
14	Returnee families in locations that have "high" severity for indicators related to livelihoods and basic services	53,395	320,370
15	Returnee families in locations where agricultural activities are not or only partially taking place as before	183,947	1,103,682
16	Returnee families in locations where they face challenges accessing basic items or food	35,930	215,580
17	Returnee families in locations where some or none have sufficient access to water for drinking and domestic needs	132,774	796,644
18	Returnee families in locations where some or none have sufficient access to water and residents are somewhat or very concerned by ethno-religious or tribal tensions	21,904	131,424

EMERGING SOURCES OF CONFLICT

Environmental changes can exacerbate or introduce new conflict, which can prompt displacement and undermine durable solutions. Emerging sources of conflict include:

Residents and new arrivals in urban centres: Climate migrants are often viewed as creating pressure on municipal services and housing and blamed for crime or negative changes to the economy. The persistent and structural issues that contribute to tensions in urban areas need an inclusive solution for all living in the city, particularly given that in the absence of remedial action to counter environmental degradation in rural areas, more people are likely to arrive.[85]

Tribal conflict: The lack of water in southern governorates, such as Maysan and Thi-Qar, and recurrence of droughts, is already a main driver of local conflict between tribes.[86] The reduction in shared family or tribal bonds, particularly in villages that have experienced a 50 percent turnover in residents, can make disputes trickier to resolve peacefully. [87]

Changes to shared resources or infrastructure: Unequal distribution of water resources can become a new driver of conflict as water scarcity grows. For example, water distribution is a point of contention between farmers and marsh dwellers, since around 75 per cent of Iraq's water is used by the agriculture sector for irrigation and food production, while 18 per cent is allocated for industrial and municipal usage and marshlands, and the rest allotted to fish farms and livestock.[88] This creates a perception that farmers have a disproportionate share of the water resources, which may grow as water resources reduce.

Recruitment to extremist groups: ISIL exploited grievances related to water scarcity and loss of agricultural livelihoods as a recruitment tool, and spread rumors that water and agricultural policies were intentionally designed to harm Sunni farmers. For example, around Tikrit, ISIL appears to have attracted much more support from water-deprived communities than from their better-resourced peers.[89]

Inter-provincial tension: The dire water situation in Iraq puts pressure on provincial authorities' ability to serve their populations, making the allocation of water a contentious issue, and disputes over the fair allocation and use of water resources often transpire between provincial governments and their constituents. Recently, for example, Thi-Qar province accused its northern neighbor Wasit province of not sharing water equally, negatively impacting the livelihood of Thi-Qar's agriculture dependent population.[90] In another example, Basra province has demanded Missan province address the issue of illegal fish farms. These farms tap into the river system and curb the level of river flow that reaches Basra, exceeding water quotas established by the Iraqi government and overriding irrigation channels that are intended for household use.[91] This type of dispute over water is not uncommon, and some reports suggest that the protection of water resources may even result in deadly conflict.[92]

Tension between residents and local authorities: Across both urban and rural areas in Iraq, residents and agricultural workers struggle with access to water, and often perceive that water is distributed unequally, on the basis of patronage or favoritism. This causes frustration on the part of citizens and has been a driving factor behind protests in recent years, particularly in southern Iraq.

To avoid exacerbating social tensions or introducing new conflicts, it is vital to integrate conflict sensitivity to any interventions addressing climate change. Decisions that alter access to shared resources may need complementary investments in governance, institutions, and effective social protection systems for the poorest and most vulnerable populations. Interventions also require careful design to ensure that communities' voices are heard in decision-making, and that legacies of violence, structural inequalities, disrupted economic and social networks, and grievances are taken into account.

2.4 VULNERABILITY PROFILES

Different models have been utilized to draw a link between climate change and migration as a way of imagining the future.[93] Modelling works by compiling a set of indicators that help answer the question: who is most likely to displace or migrate, given their exposure to climate hazards and ability to cope? A good place to start is by mapping vulnerability across five categories: environmental, social, economic, political, and demographic. Vulnerability profiles that help to identify communities where – without mitigating action – climate migration is more likely. While some vulnerability indicators are relevant globally (such as monthly income, or primary livelihood – see Annex 1 for a full list) many need to be adapted to the specific context. This section highlights some key indicators for Iraq as well as data sources that could be used to build vulnerability profiles in future.

ENVIRONMENTAL

Compiling a comprehensive list of environmental indicators is beyond the scope of this report. However, the UN Migration Network could play a strategic role in identifying relevant datasets amongst members. At present, the World Food Programme (WFP) is tracking three key

indicators of environmental change across Iraq: rainfall, temperature, and vegetation cover, while FAO also covers a range of indicators.

SOCIAL

When climate migrants in Iraq move from one area to another, social connections play a vital role in influencing if and where they move and can act as a safety net.[94] For example, tribal leaders often influence both the decision to relocate and the decision to return,[95] while another factor is whether neighbours are deciding to stay or go.

Example indicators are set out below. Some data for these indicators exists for southern Iraq within the IOM and Social Inquiry study on climate migration in fragile contexts.

Potential Indicators
Family members migrated already due to environmental changes or water scarcity
Abandoned farms per location
Social networks or connections in area of migration
Tribal decision-making and support

ECONOMIC

The agriculture sector provides 20 percent of employment in Iraq (although it only accounts for 5 percent of gross domestic product).[96] Populations most affected by environmental changes include farmers with longstanding tribal claims to land that has become impossible to farm due to water scarcity, salinity, or pollution, and nomadic marsh dwellers who can no longer rely on the wetlands to meet their livelihoods.[97] Moreover, the agricultural sector is dominated by small-scale farmers who tend to invest little in their means of production, which results in relatively low yields and means they have little financial capacity to adapt.[98]

Example indicators are set out below. Some data exists within the IOM and Social Inquiry study on climate migration in fragile contexts; WFP may offer a source for agricultural data.

Potential Indicators
Reliance on agriculture, no alternate income
Decline in crop production
Farming communities without access to irrigation water
Availability of resources to invest in adaptation

POLITICAL

Displacement and wartime experiences are key factors contributing to vulnerability to environmental change. IDPs displaced during the war with ISIL 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. Moreover, across areas formerly occupied by ISIL (including Ninewa, Salah al-Din, Anbar, and Hawija) irrigation infrastructure, farming resources, and vegetation was destroyed by ISIL or the subsequent military operations, leaving many households without access to irrigation networks or farming assets.[99] Another important factor is contractual or tenure arrangements for agricultural land; these vary across Iraq and include ownership, leasing, and sharing.[100]

Example indicators are set out below and may be tracked in part via DTM datasets (outlined above).

Potential Indicators
Destruction of agricultural infrastructure due to war with ISIL
Number IDP returnees (linked to war with ISIL)
Agricultural land ownership, tenure, or contract arrangements

DEMOGRAPHIC

Women are often disproportionately impacted by water-related threats, including loss of livelihood and intensified care work,[101] although their precise vulnerability in relation to climate migration is not well researched in Iraq. Female-headed households are likely to be particularly vulnerable to the effects of environmental change given their agency to negotiate resources and access to services is often restricted by prevailing social norms. Persons with disabilities are likely to be particularly affected by environmental changes and forced displacement since they already face social marginalization, difficulty finding employment, and higher barriers to accessing services; at the same time, they have heightened vulnerability to environmental changes since informal settlements (which are typically available to climate migrants) and poor quality roads (due to flooding) create significant barriers for their freedom of movement, independence, and quality of life.[102] Other demographic groups with specific needs and vulnerability who should be engaged in any future assessments include refugees (who often live in areas that are vulnerable to environmental changes and have fewer resources available to cope) and foreign migrant workers (whose employment conditions may grow more precarious as a result of deteriorating economic conditions link to environmental changes, for example.)

2.5 ADDRESSING CLIMATE MIGRATION

Four streams of action are needed to address climate migration: (1) Mitigate environmental degradation; (2) Support climate-affected communities; (3) Support climate migrants; and (4) Increase resilience in urban centres. A brief synopsis is set out below.

1. Mitigate environmental degradation

Mitigating the effects of climate change can drastically change the future of climate migration. Key policy responses include:

- Develop a regional framework for a more equitable distribution of water resources between Iraq and neighbouring riparian countries;
- Address water management including arrangements between provinces, maintenance and upgrading of water infrastructure, and investment in climate-smart agricultural infrastructure;
- Address the impact of environmental change such as water scarcity, land degradation (including deforestation), and salinity, including by establishing national technical plans and strategies;
- Invest in climate smart agriculture, innovative technologies and water-efficient agricultural practices to minimize the impact of seasonal variations;
- Protect and restore environments such as marshes, wetlands and agroecosystems; and
- Increase public awareness and education on water conservation and sustainable water usage.

2. Support climate-affected communities to adapt and build resilience

It is vital to keep attention on districts currently forcing families to migrate. Farming families abandon their land and livelihood when they cannot adapt to changing environmental conditions. Some farmers have taken measures to adapt to their changing environment and sustain their livelihoods,[103] but this requires sufficient knowledge and resources and most farmers operate on a small scale and cannot afford the investments needed to improve their farming methods.[104] These measures are important not only to prevent displacement, but also because some displaced people would be willing to return if they could sustain their agricultural livelihoods with sufficient water resources.[105] The mitigation measures described above should target communities at risk of displacement and migration due to environmental changes.

3. Support climate migrants

Climate migrants often move into complex new environments with limited financial and social capital, which affects their ability to access civil and administrative rights, such as access to employment and service provision, policing and/or formal dispute resolution, guarantees on property rights, and voice and agency.[106] This requires a host of assistance, tailored to their specific needs, including vocational training; livelihood opportunities; housing support; legal assistance; access to services; and support to strengthen civil and political rights, amongst others. Further research is needed to understand the full extent of the impact on persons displaced due to environmental changes.

4. Increase resilience in urban centers

Most cities are not well prepared to absorb the recent (and increasing) influx of climate migrants. While migrants tend to cluster in areas that are less developed and less safe and struggle to access civil and administrative rights, the challenges they experience are common to other non-displaced residents too. Therefore, intervening in this context calls for system-wide and area-based actions.[107] Urban preparedness and resilience may be strengthened by improving the capacity and quality of service provision; adopt risk-resilient land use planning and zoning; implement effective early warning systems, emergency disaster response, and post-disaster recovery; improve urban governance; and improve infrastructure design standards to take into consideration natural hazard and climate change risks.

Figure 8: Raber Aziz/IOM Iraq

PART 3: RECOMMENDATIONS

3.1 KEY MESSAGES

Based on the findings of this report, this section proposes key messages to share in national and international forums such as the IMRF, COP-27, Iraq's Green Paper, and future discussions on Iraq's NDC. The focus of these messages is on climate migration and displacement, although wider advocacy to mitigate the effects of climate change is undoubtably valuable.

Migration and displacement should be recognized in all relevant policy discussions on climate change.

Sometimes, migration is positive adaptation strategy that saves lives and reduces risk; other times, it generates new risks for migrants and their communities. Mitigating and addressing these risks requires specific actions and sufficient resources. Therefore, to ensure adequate resource allocation, climate displacement and migration should be addressed explicitly in national plans (such as the Green Paper and the NDC) and international platforms (such as the IMRF and COP-27)

Policy action can shape how human mobility is used to adapt to climate change. Communities that cannot cope with the impact of environmental changes are more likely to displace or migrate. This decision to relocate is made based on a combination of factors – environmental, economic, social, political, and demographic – as well as the degree of support available to affected families and communities. The GoI has the power to reduce risks and build resilience to the effects of climate change. This includes supporting communities to adapt to environmental change and remain in place, to use mobility as a dignified form of adaption, or a combination of both.

Effective policy action towards climate migration must be holistic. Specifically, it requires four lines of action: (1) Mitigate environmental degradation through environmentally-based solutions, including adaptive and regenerative agriculture, innovative technologies, and improved water management frameworks; (2) Support climate-affected communities to reduce their vulnerability and strengthen their resilience to environmental changes; (3) Support climate migrants to access their rights, develop sustainable livelihoods, and achieve a durable solution; and (4) Increase the resilience of urban centres to growing climate migration.

Support climate-affected communities to build resilience and protect their livelihoods through adaptation. It is vital to keep attention on districts currently forcing families to migrate – mostly the rural, neglected hinterland that faces extreme environmental degradation. Farming families abandon their land and livelihood when they cannot adapt to changing environmental conditions, and most farmers operate on a small scale and cannot afford the investments or techniques needed to improve their farming methods to environmentally suited and productive approaches.[108] Some farmers have taken measures to adapt to their changing environment and sustain their livelihoods, but this requires sufficient knowledge and resources. Some displaced people would be willing to return if they could sustain their agricultural livelihoods with sufficient water resources.[109] Efforts to mitigate environmental degradation and enhance adaptation should specifically target those most vulnerable to displacement and migration.

Provide assistance to climate migrants. Migrants are attempting to settle into complex new environments with potentially limited financial and social capital, which affects their ability to access civil and administrative rights such as access to employment and service provision, policing and/or formal dispute resolution, guarantees on property rights, and voice and agency.[110] This requires a host of assistance, tailored to their specific needs.

Increase resilience in urban centers. Most cities are not well prepared to absorb the recent (and increasing) influx of climate migrants, and residents often share some of the challenges that newly arrived climate migrants face. Therefore, intervening in this context calls for system-wide and area-based actions. Urban preparedness and resilience may be strengthened by improving the capacity and quality of service provision; adopting risk-resilient land use planning and zoning; implementing comprehensive emergency SOPs (of which early warning is a part); improving urban governance; and improving infrastructure design standards to take into consideration natural hazard and climate change risks. Infrastructure and settlement design should include water recycling as well as solid and liquid waste management using low-cost, sustainable climate and environmentally friendly methods.

Supporting people when they move is just as important as supporting people to stay. Investments in physical infrastructure can generate a "moral hazard" by incentivizing people to remain in or even move to regions that are hydrologically and ecologically unable to support growing

populations in the long run. In regions where sluggish migration traps people in nonviable places, the focus should be to remove barriers to mobility rather than place-based policies.[111]

Rural-to-rural migration also requires dedicated support. Rural-to-rural migration is happening but it's harder to measure and track because people often move into dispersed villages. Although they are usually able to continue their agricultural livelihoods, they often struggle with ongoing environmental changes and also add to the stress facing water-scarce communities.

Countries with global expertise and resources should extend support to less-resourced countries. ISIL caused catastrophic results in Iraq, including destruction of infrastructure and the displacement of hundreds of thousands of people, and has contributed to draining the country's economic resources. The IMRF and COP-27 should catalyze technical assistance from relevant organizations, networks and experts to support less-resourced countries – such as Iraq – that are particularly vulnerable to climate change. Regional platforms may be utilized to do this. In addition, less-resourced countries should be supported with grants, loans, and private investment to support efforts to adapt to climate change and mitigate the risks and detrimental impact of climate migration.

3.2 RECOMMENDATIONS

The following recommendations are intended to address climate displacement and migration in Iraq. Wider activities that address the effects of climate change will also have an impact on climate migration; however, due to the scope of this report, the recommendations below focus on activities directly related to displacement and migration.

FOR THE UN AND INTERNATIONAL ACTORS

- Advocate for the recognition of migration and displacement dimensions in all relevant policy discussions on climate change. This includes the IMRF, COP-27, Iraq's Green Paper, and future discussions on Iraq's NDC.
- Improve tracking and analysis of climate displacement and migration through more systematic data collection; inter-agency collaborations (between agencies with migration data and those with data related to environmental changes); and thematic knowledge products that address the relationship between environmental changes, migration, durable solutions, and urban resilience.
- Invest in building vulnerability profiles for affected locations, based on an agreed set of indicators that reflect the information currently available on vulnerability to climate migration. This process could be led by IOM's DTM, in partnership with other UN agencies who generate data related to the effects of climate change. The UNM could play a strategic role in identifying member agencies who have datasets or knowledge contributions relevant the vulnerability profile exercise.
- Utilize vulnerability profiles, together with other data tracking, to generate 'early warning' of hotspots at risk of climate displacement, and advocate for timely policy decisions. Vulnerability profiles should also inform the work and priorities of national forums such as the Technical Working Group and Taskforce.
- In addition to location-based vulnerability profiles, develop vulnerability profiles for specific populations whose cultural heritage is threatened by climate migration, such as the Bedouin and Marsh Arabs, which can also be used to identify and advocate for policy action.
- Support and strengthen the Inter-Ministerial Technical Working Group and Taskforce responsible for implementing the National Migration Management Strategy. Key steps include inviting experts and additional government institutions (e.g. Ministry of Water Resources and the Ministry of Environment from central and Board of Environmental Protection and Improvement office in KR-I) to Working Group or Taskforce sessions on climate migration; including the TWG in environment and climate change coordination structures and mechanisms to ensure migration aspects are duly considered; and support the Taskforce with technical assistance to ensure they address climate migration effectively.
- Non-governmental organizations and local community groups, including youth, women and community leaders, should be meaningfully represented in national bodies and in the development of water-related policymaking and programming. Where formal bodies do not exist, ensure that communities are involved in policy-making related to climate migration. This means engaging communities to understand their opinions; providing clear and accessible information on the policy options under consideration; and supporting them to raise their concerns with the relevant government counterparts (in the form of public forums, representations in local councils, or being included in the annual water management plan.)
- Familiarize community groups and non-governmental organizations with durable and sustainable techniques for adaptation.
- Identify, track, and understand how climate change and climate migration are contributing to new or existing conflicts. Identify the conflict resolution

mechanisms that exist to address these issues; raise awareness and encourage dialogue that addresses the interplay between water and conflict; and support activities to prevent and/or mitigate conflict risk.

- In relation to Makhoul Dam, support the affected communities to develop advocacy groups and to raise community concerns and interests to local and central government institutions.
- Offer technical support to the government of Iraq to ensure that Makhoul Dam's adverse outcomes on local communities are minimized.
- Give a human face to the climate change debate. More emphasis needs to be placed on the migrants themselves, their families and the communities, on understanding their strategies, the challenges they face, and mobility options that are available to them.
- Where possible, form partnerships with local organizations and activists. Local organizations are vital knowledge-bearers of localized information about water-related threats, the roles and responsibilities of men and women in the management and distribution of water, communal coping mechanisms, and locally-grown solutions for dealing with environmental changes and climate migration.
- Invest in research to strengthen knowledge on climate migration. One particular gap in knowledge is the gendered impact of climate change and the gendered use of migration as a form of adaptation.

FOR THE UN MIGRATION NETWORK (UNM)

- The UN Network on Migration should play a key role in preparing submissions related to climate-induced displacement and migration for Iraq's Green Paper, as a joint partnership between its UN members.
- The UN Network on Migration can play a coordination role in compiling, gathering feedback on, and disseminating an agreed set of indicators that UN agencies and partners can use to more systematically track climate migration.
- The UN Network on Migration is a valuable forum for disseminating data and knowledge products related to climate migration that is produced by its members.

FOR THE GOVERNMENT OF IRAQ

- Utilize international and national platforms (such as the IMRF, COP-27, Iraq's Green Paper, and Iraq's NDC) to catalyze finance that will support Iraq to meet its commitments to addressing climate change and climate migration, and enhance urban resilience and preparedness.
- Invest in strengthening urban infrastructure and services in cities with a high number (or expected high number) of climate migrants, including water and sanitation, energy, transport and telecommunications, built environment, and health and social services.
- Invest in technical skills-building for individuals and institutions within the government in relation to climate migration, as well as urban resilience and preparedness. Capacity-building is needed to better understand the exposure and vulnerability of the population and infrastructure to the potential impacts of climate change, as well as to strengthen skills in integrated planning, prioritizing actions, implementation, operations and maintenance, and interdepartmental coordination.
- Address the public health risks associated with climate change as an integral part of addressing climate migration. Key steps are to include public health issues in the National Adaptation Plan and other key policy frameworks; promote climate mitigation and adaptation policies that protect and promote health and strengthen health systems; and strengthen risk surveillance of all climate-sensitive diseases.
- Ensure that any significant decision-making in relation to climate migration, particularly if it has the potential to disrupt or transform life, includes consultation with local communities and their active participation. Community-level resilience planning can enhance the capacity of marginalized urban communities to understand the drivers of risk and vulnerability and to determine local actions for strengthening resilience.
- Conduct a thorough cost and benefit analysis of the impact of Makhoul Dam, considering communities and their life situations and existing inventories. Also explore alternative arrangements for managing water resources, including water reservoirs and dams in less populated and culturally significant areas.
- Develop an inter-agency and inter-ministerial coordination, communication, and planning task force that would oversee Makhoul Dam, including the cost benefit analysis and community engagement.

FOR IOM - INTERNAL

The following recommendations and insights may contribute to IOM's strategy and planning related to climate migration.

DTM IRAQ

DTM is strategically positioned to respond to the growing demand for knowledge about the links between migration, environment and climate change, which is important for migration management, protecting human rights of migrants, emergency preparedness, climate change adaptation and mitigation, urban planning, disaster risk reduction and sustainable development. DTM Iraq has already taken some steps to incorporate environmental factors into existing and new tools. The following interventions are suggested for consideration (and may already be fulfilled to some degree) and may require additional resources (such as GIS experts or specialists in interpreting meteorological data.

1. **Review the existing DTM instruments to collect more complex data on mobility drivers**. Often, the existing tools (globally, not only in Iraq) capture only a main reason for movement, and do not connect drivers such as livelihoods to environmental changes.[112] The experience of DTM Somalia suggests that additional layers of questions should be added in order to capture the environmental factors influencing the drivers that respondents report (i.e. in order to draw a connection between the 'immediate' driver such as loss of livelihoods, land disputes, or new conflict, it is necessary to ask a series of questions to understand if/how the driver links to the environment, by asking about crop productivity, water scarcity, irrigation, seeds etc.)

2. **Review the existing DTM instruments to collect more complex data on barriers to return**, which can capture the influence of environmental factors. For instance, environmental degradation affecting livelihoods may be a barrier for people initially displaced by conflict. Instruments should thus be adapted to capture environmental factors as a cause of protracted displacement. As with (1) above, this will require adding layers of questions since respondents are likely to mention livelihoods and not drought as the barrier (for example). This review process would benefit from coordination with TRD Iraq, since in April TRD will review its return monitoring survey tools to better capture environmental factors.

3. **Analyse data sources on environmental and climate change factors collected by other agencies (e.g. WFP, FAO) alongside DTM data on population movements and mobility drivers**. This will create a better understanding of the complex relation between migration, environment and climate change. Specifically:

   a. **Overlay historic population movement data against key climate change data**. Meteorological data (e.g. average rainfall patterns, average temperatures, temperature anomalies, vegetation) should integrated in such a way that GIS units can provide ad hoc maps of historical or recent displacements with meteorological and climatic overlays. Meteorological data could be gathered from global sources as well as from regional systems – WFP and FAO both offer relevant opportunities to collaborate. Combining this data would provide effective visual and analytical tools for establishing linkages between recorded movements and environmental factors and may reveal patterns between mobility and environmental factors that were not immediately apparent. This knowledge could help to tailor survey instruments to gather more specific environmental data. DTM Somalia may offer a relevant model to follow.

   b. **Build a 'vulnerability profile' for at-risk areas, based on an agreed set of vulnerability indicators**. These indicators should include DTM data (e.g. historical mobility data; data on IDPs and returnees who are vulnerable to environmental factors, as set out earlier) as well as external data on climate and environment (drawing on WFP and FAO datasets). Overlaying these factors could help identify areas at higher risk of climate displacement or migration. A simplified version of the vulnerability profile could focus on livelihoods and climate data (given the severe impact on livelihoods) as well as historical mobility data. This may help to build predictive analysis regarding agricultural communities at risk of displacement.

   c. **Overlay climatic and environmental data with data on the perceptions of the affected population towards environmental changes** (collected by DTM). This may help to develop models to forecast future movements, since it is perceptions of environmental changes (and the perceived ability to cope with these changes) that determines whether someone will move, and not the changes themselves.

   d. **Consider moving beyond the IDP/returnee caseload to capture national data on vulnerability to climate displacement and migration**. Since there is no recent national census data, this would require identifying appropriate datasets to rely on and an agreed set of indicators to determine vulnerability. One approach would be to develop an index of climate indicators to identify at-risk areas, and then an index to identify people most vulnerable to the effects of those environmental changes. This national-level data would be extremely beneficial for scenario planning and more targeted programming to prevent or mitigate climate displacement.

4. **Continue with thematic data collection on environmental drivers (e.g. drought-affected areas) and consider expanding** to additional areas or environmental issues as they are identified via other data initiatives.

5. **Contribute to DTM global team who are compiling a global bank of MECC indicators**.

IOM IRAQ PROGRAMMING OPTIONS

- Map the institutional framework within the Government of Iraq that is responsible for different aspects of climate change and climate migration. Currently this is unclear, and a more systematic understanding would be valuable for the UN collectively.

- The Planetary Security Initiative, hosted by Clingendael,[113] may offer a strategic partnership for IOM that brings together climate migration and peacebuilding. The Initiative is engaged in research and policy development in Iraq related to climate security. As part of this, they host dialogue sessions on climate security, attended by government, academics, climate activists and community representatives, and organizations. The aim is to connect different regions of Iraq, offer a platform for local voices to develop local solutions, and advocate those solutions with decision-makers. So far, climate migration has not been a focus of the climate dialogues; however, this could be a strategic collaboration for IOM to initiate.

- Engage local journalists in training on climate migration. This should result in more extensive and accurate reporting, which will help to raise awareness of the impending crisis, encourage the GoI to take action, and put a human face to climate migration. The Clingendael Planetary Security Initiative conducts training with civil society and journalists (via Free Press Unlimited) on climate change, which has resulted in greater coverage and technical accuracy on the issue – not only in English but in local languages. To date they have not addressed climate migration, so this may offer a relevant partnership for IOM to pursue.

- To encourage IOM staff to draw connections between climate change, the environment, and migration, they would benefit from a briefing session explaining key concepts. This may be delivered via the staff training and development group.

- Integrate analysis and tracking of climate and environmental changes in PVE Area assessments. ISIL intentionally targeted drought-affected areas and exploited their grievances linked to loss of livelihoods and lack of government support, so this is a key variable to recognise.

- Partner with local organizations that have an existing social media platform to challenge narratives that use environmental changes, climate migration, or water management to exploit grievances.

Figure 9: Anjam Rasool/IOM Iraq

PART 4: ANNEXES

ANNEX 1: GLOBAL INDICATORS ON CLIMATE MIGRATION[114]

Social	
1	Family and societal relations and expectations
2	Migration and social networks
3	Changes in marital status
4	Education level
5	Ethnicity
Economic	
6	Average household income
7	Key economic activity of household
8	Cost of living
9	Employment rates and opportunities
10	Land availability and rights
Political	
11	Level of institutionalization and infrastructure
12	Conflict / security
13	Governance: policy incentives and state support and effectiveness of implementation by government
14	Specific migration policy and sentiment towards migrants
Demographic	
15	Gender
16	Marital status
17	Age
18	Ethnicity
19	Sex ratio
20	Population density
21	Population growth rate
22	Age ratio
23	Population morbidity and mortality
Environmental	
24	Soil quality
25	Land use / quality and degradation
26	Air quality
27	Food security
28	Water security

ENDNOTES

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MIGRATION, ENVIRONMENT, AND CLIMATE CHANGE IN IRAQ

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