MAKING ADAPTATION WORK

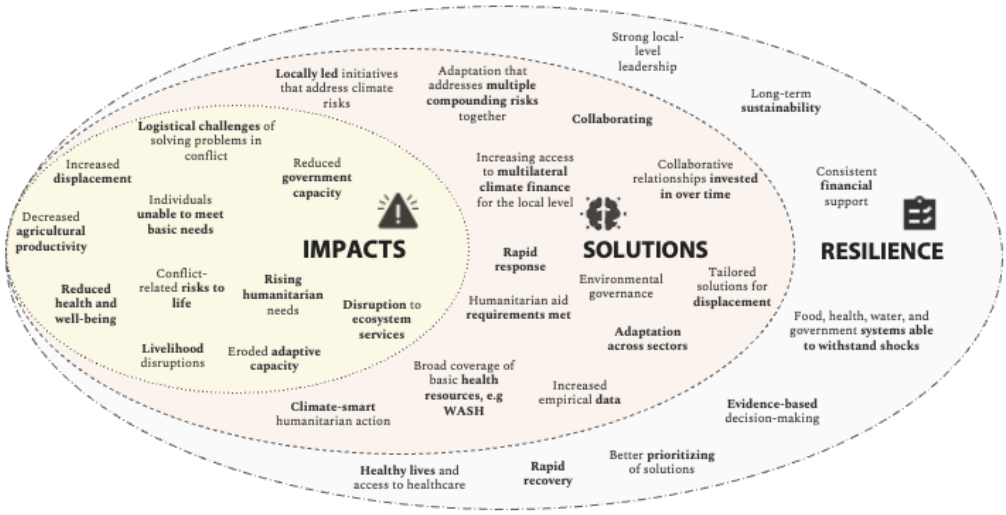
Addressing the compounding impacts of climate change, environmental degradation and conflict in the Near and Middle East

Summary for policymakers

Norwegian Red Cross

ICRC

Environmental degradation, climate change and armed conflict in the Near and Middle East: humanitarian impacts, solutions, and resilience



Key messages

The combined effects of climate change, environmental degradation and armed conflict are both shaping and exacerbating humanitarian needs across the Near and Middle East, with impacts on human security, livelihoods, health and mobility.

Humanitarian, development, climate, environmental and peacebuilding actors need to work together to help lay the foundations for long-term sustainability and community resilience before, during and after a crisis. We call upon these actors to advocate for urgent action to reduce greenhouse gas emissions and work together to strengthen in-country climate action for people affected by armed conflict by:

- **Making it easier for countries and communities affected by armed conflict to access financing for climate adaptation,** by approaching risk differently and supporting action at multiple scales and with diverse actors.
- **Investing in adaptation programmes that address needs across sectors,** to enable conflict-affected countries and populations to manage the combined impacts of environmental degradation, climate change and conflict on human health.
- **Providing humanitarian and adaptation support to displaced people and people at risk of displacement,** with a particular emphasis on those facing repeated or protracted displacement.
- **Supporting locally led adaptation, tailored to conflict-affected contexts** by enabling devolved decision-making, addressing structural inequalities and investing in local capabilities and flexible programming.
- **Collaborating across sectors to strengthen the adaptive capacity of people and communities and the evidence base concerning successful adaptation work in contexts affected by armed conflict,** including by strengthening environmental and climate information services.

From the al-Shuhada Bridge, the rest of Baghdad, Iraq, is hardly visible through a haze of dust. In spring 2022, dust storms hit every few weeks, leading to the closure of schools and forcing thousands to seek medical aid.

1 Introduction

For humanitarian actors, the compounding impacts of environmental degradation and climate change on all aspects of human security are starkly visible in the needs of the populations they serve. In the Near and Middle East, the consequences of armed conflict are exacerbating these impacts, with severe repercussions on health, safety and well-being. As climate change intensifies, its impacts will also intensify, which, in turn, will further exacerbate humanitarian needs.

Given the challenges affecting the Near and Middle East and previous research findings concerning the humanitarian impacts of climate change,[1] the International Committee of the Red Cross (ICRC) and the Norwegian Red Cross (NorCross) carried out a desk review to further strengthen understanding of these interlinked phenomena and look at how mobility, be it internal or cross-border, plays in the living conditions and livelihoods of affected communities in the region. This policy brief presents key findings from the full report.[2]

The report explores how the humanitarian consequences of environmental degradation and climate change are aggravated by armed conflict in the Near and Middle East, using examples from Iraq, Syria and Yemen. Its overarching goal is to enable humanitarian actors to better understand the main risks faced by communities in the region and better respond to their needs. Furthermore, the report aims to identify opportunities and barriers in strengthening community resilience to climate and environmental risks in areas affected by armed conflict or by the legacy of conflict.

1 See Norwegian Red Cross. Overlapping Vulnerabilities, 2019 and International Committee of the Red Cross (ICRC). When Rain Turns to Dust: Understanding and responding to the combined impacts of armed conflicts and the environment and climate crisis on people's lives, 2020.

2 The full report can be found at: https://shop.icrc.org/making-adaptation-work-pdf-en.html and https://www.rodekors.no/om/rapporter-publikasjoner/

2 Overview of environmental degradation and climate change in the Near and Middle East

2.1 Environmental degradation

A multitude of drivers – including population growth, urbanization, agricultural practices, governance and armed conflict – have driven, and continue to drive, environmental degradation in the Near and Middle East. Environmental degradation weakens human security in three key ways:

- Soil and land degradation affects agricultural productivity and food security. Nearly half of all agricultural land in the Middle East and North Africa region is exposed to high levels of salinity, soil nutrient depletion and wind-water erosion.[3]

- The increasing scarcity of fresh water is a major challenge to public health, with more than 60% of the population in the Middle East and North Africa living in water-stressed areas.[4]

- Air quality has declined due to both natural and anthropogenic factors, and residents in cities and urban settlements in the Middle East now breathe air containing a level of pollutants ten times higher than is considered safe.[5]

2.2 Climate change

Climate change impacts may vary across the region but are broadly expected to include reduced water access, intensification of heavy rainfall events, rising temperatures and more frequent storms. The Middle East has already seen an increase in temperature of 1.5°C since the 1990s.[6] Peak heatwave temperatures are projected to reach unprecedented levels of 56°C under 'business as usual' climate models,[7] with several areas in the Near and Middle East expected to reach temperature levels that will threaten human survival unless adaptation strategies are implemented.[8]

Climate-related disasters are expected to become more frequent as the spatial distribution and frequency of climate-sensitive hazards, such as floods, extreme weather events and droughts, changes. In addition to the increased flood risk associated with more intense rainfall, both drought and dust storms are of particular concern for the region.

The region's diverse climate means that climate change impacts will be felt in different ways in different areas, particularly in terms of water scarcity and its consequences for agricultural production.

3 FAO. Trees, forests and land use in drylands: the first global assessment – full report. FAO Forestry Paper No. 184, Rome: Food and Agriculture Organization of the United Nations 2009. https://www.fao.org/3/ca7148en/ca7148en.pdf

4 World Bank. Beyond Scarcity: water Security in the Middle East and North Africa. MENA Development Report. Washington, DC, 2018. https://openknowledge.worldbank.org/handle/10986/27659

5 World Bank, Heger, M.P., Vashold, L., Palacios, A., Alahmadi, M., Bromhead, M.-A. and Acerbi, M. Blue Skies, Blue Seas: Air Pollution, Marine Plastics, and Coastal Erosion in the Middle East and North Africa. Overview booklet. Washington, DC, 2022. https://openknowledge.worldbank.org/bitstream/handle/10986/36912/211812ov.pdf

6 International Monetary Fund (IMF). Feeling the heat: Adapting to climate change in the Middle East and Central Asia, 2022. https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2022/03/25/Feeling-the-Heat-Adapting-to-Climate-Change-in-the-Middle-East-and-Central-Asia-464856

7 Zittis, G., Hadjinicolaou, P., Almazroui, M., Bucchignani, E., Driouech, F., El Rhaz, K., ... Lelieveld, J. 'Business-as-usual will lead to super and ultra-extreme heatwaves in the Middle East and North Africa', Climate and Atmospheric Science, 4(1), 1–9, 2021. https://www.nature.com/articles/s41612-021-00178-7

8 Ntoumos, A., Hadjinicolaou, P., Zittis, G., Proestos, Y. & Lelieveld, J. 'Projected air temperature extremes and maximum heat conditions over the Middle-East-North Africa (MENA) region, Earth Systems and Environment 6, 343–359, 2022. https://doi.org/10.1007/s41748-022-00297-y

Climate projections	Iraq	Syria	Yemen
Precipitation (annual average)	Some indication that northern highlands will become drier. Annual rainfall unlikely to change in the lowlands, but more intense downpours.	Little change expected, heavy downpours will continue and may be more intense.	Projections uncertain due to microclimates.
Sea level rise and storms	Sea level rise expected in the Persian Gulf.	Sea level rise expected to continue in the Mediterranean, with more intense storms.	Sea level rise expected in the Gulfs of Aden and Oman, as well as in the Arabian Sea, with more intense storms.
Temperatures	Average annual temperatures expected to be 2–3°C higher in the highlands and 2–4°C higher in the lowlands by 2050s. In the highlands, maximum daily temperatures exceeding 35°C will become a common occurrence in the summer months. In the lowlands, maximum temperatures could exceed 40°C during most summers.	Significant warming has taken place already. Annual average temperatures expected to be 2–4°C higher by the 2050s. Maximum temperatures will exceed 35°C for a longer period, beginning earlier in spring and lasting longer into autumn. Daily maximum temperatures of 40°C may become more frequent.	Significant warming has taken place already. Annual average temperatures expected to be 2–4°C higher by the 2050s. Maximum temperatures could exceed 40°C during most summers. Daily maximum temperatures exceeding 35° C will start earlier in spring and continue into autumn.
Main expected impacts on water resources			
Secondary impacts	Reduced discharge in the Euphrates and Tigris rivers. Water shortages likely due to increasing demand.	Reduced discharge in the Euphrates, with impacts on water security.	Water stress, food insecurity and impacts on marine ecosystems and fisheries.

Table 1. Summary of projected climate changes in Iraq, Syria and Yemen, adapted from information provided by the UK Met Office, the UK Foreign, Commonwealth and Development Office and ODI ('Climate risk report for the Middle East and North Africa (MENA) region'. 2021)

3 Environmental damage as a legacy of conflict

Armed conflicts cause damage to both the built and natural environment. They weaken environmental and risk governance and disrupt societies, thereby creating and sustaining conditions that cause environmental degradation. In the Near and Middle East, agricultural land degradation, damage to water infrastructure, pollution, degradation of and damage to protective infrastructure, and deforestation have all been reported as consequences of armed conflict, as discussed below in relation to Iraq, Syria and Yemen.

3.1 Loss of trees and deforestation

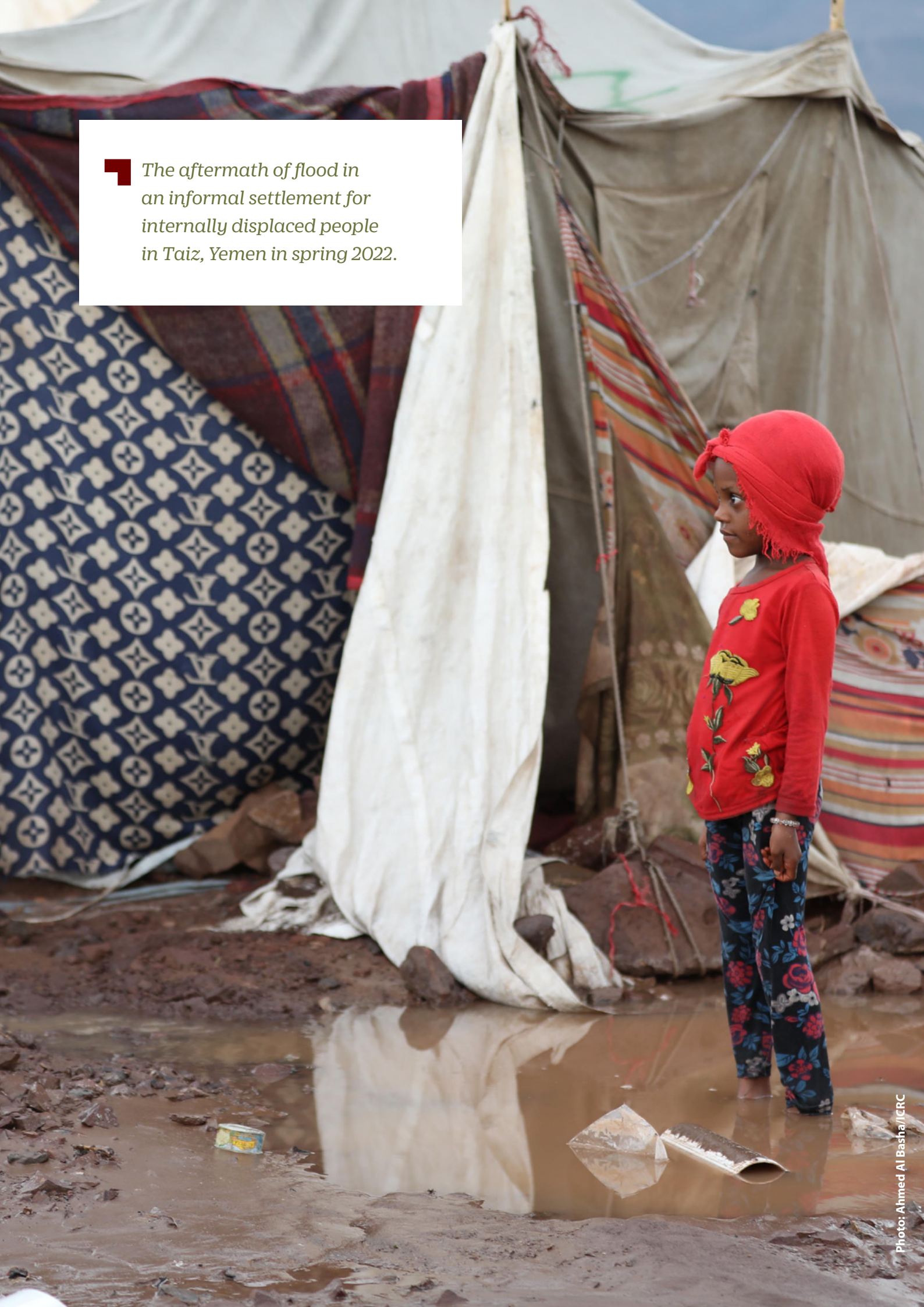
Conflict often contributes both to the loss of trees cultivated for agricultural and productive purposes and to deforestation. In northwest Syria, for instance, more than 500,000 olive trees have been destroyed as a direct result of the ongoing conflict.[9] The loss of woodland and forests also disrupts vital ecosystem services. Deforestation during times of conflict is primarily driven by intentional and socio-economic factors, such as the intentional burning of forests either by armed groups for access and control or by local populations reliant on charcoal as an alternative to more expensive fuel sources.[10] Such actions can deprive people of their livelihoods, dramatically reduce already-scarce vegetation, increase soil erosion and desertification, and destroy biodiversity.

3.2 Pollution and contamination

Armed conflict generates and exacerbates pollution. In the Near and Middle East, industrial and petrochemical facilities have been targeted during fighting, which can lead to farmland and surface- and groundwater becoming polluted with oil residues, combustion products and heavy metals.[11] Since the early 1990s, physicians and communities in parts of Iraq have linked toxic exposures from armed conflict to cancers and congenital birth defects.[12]

Conflict-related damage affecting oil pipelines is common. In Syria and Iraq, the loss of formalized oil production and refining capacity meant that people turned to highly polluting artisanal oil production, with cascading health and environmental consequences.[13] In some cases, displaced people have settled on or near contaminated artisanal refinery sites,[14] while

9 Schwartzstein, P. 'Iraq races to save last of Middle East's forests from burning', National Geographic, 2019.
10 Mohamed, M. 'An assessment of forest cover change and its driving forces in the Syrian coastal region during a period of conflict, 2010 to 2020', Land, 10, 191, 2021: https://doi.org/10.3390/land10020191
11 PAX for Peace. Living under a black sky - Conflict pollution and environmental health concerns in Iraq', 2017. https://reliefweb.int/sites/reliefweb.int/files/resources/pax-report-living-under-a-black-sky.pdf
12 Surdyk, S., Itani, M., Al-Lobaidy, M., Kahale, L.A., Farha, A., Dewachi, O., Akl E.A. & Habib, R.R. 'Weaponised uranium and adverse health outcomes in Iraq: A systematic review', BMJ Global Health. 6, 2021. https://gh.bmj.com/content/6/2/e004166.citation-tools
13 The Guardian, 'Makeshift oil refineries a necessary evil for locals in north-west Syria', Global development, 2020. https://www.theguardian.com/global-development/2020/apr/24/makeshift-oil-refineries-a-necessary-evil-for-locals-in-north-east-syria-study-finds
14 Syria Untold. 'Displacement and the environment: Lessons from Syria and the Middle East', Syria writes, 2018. https://syriauntold.com/2018/07/17/displacement-and-the-environment-lessons-from-syria-and-the-middle-east



The aftermath of flood in an informal settlement for internally displaced people in Taiz, Yemen in spring 2022.

Photo: Ahmed Al Basha/ICRC

other conflict-induced toxic hotspots have had a significant impact on local communities.[15]

Soil can be polluted by heavy metals and energetic materials from conventional weapons,[16] land mines and improvised explosive devices. Agricultural land can also be contaminated with planted mines, unexploded ordnance and improvised explosive devices, restricting the farming of and access to the land.[17]

The use of explosive weapons in populated areas can create extensive amounts of often-contaminated debris.[18] In Syria, significant damage to cities generated millions of tons of debris,[19] while disruption to waste management and disposal infrastructure encourages unsafe informal dumping and burning.[20]

3.3 Damage to and destruction of infrastructure

International humanitarian law prohibits deliberate attacks against civilian infrastructure and the natural environment. However, over the past two decades, the deliberate degradation of the environment has been used as a method of warfare in the Near and Middle East. Natural resources, such as water and related infrastructure, are often seen as a strategic asset during armed conflict.[21] Decisions made by those who control access to water infrastructure, including dams and hydropower stations, can significantly affect local communities, particularly as water scarcity becomes more common.[22] Cases such as the takeover of Iraq's Mosul Dam in 2014 and the associated risk of dam collapse also demonstrate how damage to infrastructure can represent an immediate threat to the safety of large population groups.[23]

Weakened governance and institutional capacity

Armed conflicts and instability impede regulatory oversight. As a result, oil and industrial sites operate under weaker regulations, which increases pollution risks. At the same time, sanctions and restrictive measures, or a lack of inward investment, can lock countries into polluting technologies and practices. For example, methane flaring by the oil industry is widespread in Iraq. This practice contributes to climate change while also creating air pollution that affects the health of communities in oil-producing areas.[24]

15 United Nations Environment Programme (UNEP). Assessment of environmental hot spots in Iraq, 2005. https://www.unep.org/resources/report/assessment-environmental-hot-spots-iraq

16 FAO and UNEP (2021). 'Chapter 3: Sources of soil pollution and major contaminants in areas affected by armed conflict'. In: Global Assessment of Soil Pollution: Report. Rome: Food and Agriculture Organization of the United Nations. https://www.fao.org/documents/card/en/c/cb4894en

17 Voice of America, 'In Iraq's Baiji, mines turn farms into killing fields', Middle East, 2019. https://www.voanews.com/a/middle-east_iraqs-baiji-mines-turn-farms-killing-fields/6175097.html

18 United Nations Environment Programme (UNEP). 'Environmental legacy of explosive weapons in populated areas', News, Stories & Speeches, 2021. https://www.unep.org/news-and-stories/story/environmental-legacy-explosive-weapons-populated-areas

19 REACH. Syrian cities damage atlas – thematic assessment of satellite identified damage, 2019. https://reliefweb.int/sites/reliefweb.int/files/resources/reach_thematic_assessment_syrian_cities_damage_atlas_march_2019_reduced_file_size_1.pdf

20 Noufal, M., Maalla, Z. & Adipah, S. 'Challenges and opportunities of municipal solid waste management system in Homscity, Syria', Proceedings of the Institution of Civil Engineers – Waste and Resource Management, 173(2), 40–53, 2020. https://doi.org/10.1680/jwarm.19.00020

21 Italian Institute for International Political Studies (ISPI), von Lossow, T. The role of water in the Syrian and Iraqi civil wars, 2020. https://www.ispionline.it/en/pubblicazione/role-water-syrian-and-iraqi-civil-wars-25175

22 United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Syria: Alouk Water Station – Flash update: Disruption to Alouk Water Station, 2021. https://reliefweb.int/report/syrian-arab-republic/syria-alouk-water-station-flash-update-disruption-alouk-water-station

23 BBC. 'Mosul Dam: Why the battle for water matters in Iraq', Middle East, 2014. https://www.bbc.com/news/world-middle-east-28772478

24 New York Times. 'Southern Iraq's toxic twilight – burning gas and poisoning the air', Middle East, 2020. https://www.nytimes.com/2020/07/16/world/middleeast/iraq-gas-flaring-cancer-environment.html

Weakening institutional capacity at local and national levels due to armed conflict often:

- Reduces the capacity of solid-waste management and disposal systems,[25] leading to the build-up of waste and increasing the risk of spread of transmissible diseases, as well as soil and water pollution.

- Hinders domestic programmes to improve solid-waste management, typically resulting in the prolonged use of unsanitary landfills and other practices that are harmful to both public and ecological health, with the most vulnerable communities at higher risk of exposure.[26]

- Limits the institutional capacity to embrace new natural resource governance and management approaches. For example, there are only few cases of integrated water resource management practices or transboundary cooperation on water resources in the region, which are needed to manage increasing water demand and tackle climate and degradation-related challenges.

- Leads to action on climate change and environmental degradation being deprioritized, both at the domestic and multilateral levels.[27]

- Results in damage to weather stations, insufficient resources and a lack of qualified technical staff in climate services, hindering climate-related data collection during conflicts. This, in turn, limits a country's capacity to generate high-resolution weather forecasts and climate projections.[28]

The drying up of the marshlands in southern Iraq do not only threaten local biodiversity, but human health and livelihoods as well.

Photo: Hassan Ali/ICRC

25 International Committee of the Red Cross (ICRC). Urban services during protracted armed conflict: A call for a better approach to assisting affected people', 2015.

26 Conflict and Environment Observatory (CEOBS). How Yemen's conflict destroyed its waste management system, 2019. https://ceobs.org/how-yemens-conflict-destroyed-its-waste-management-system

27 Conflict and Environment Observatory (CEOBS). How armed conflicts impact the Basel, Rotterdam and Stockholm conventions, 2017. https://ceobs.org/how-armed-conflicts-impact-the-basel-rotterdam-and-stockholm-conventions

28 International Institute for Sustainable Development (IISD). Mason, S., Kruczkiewicz, A., Ceccato, P. & Crawford, A. Accessing and using climate data and information in fragile, data-poor states, 2015. https://www.iisd.org/system/files/publications/accessing-climate-data-information-fragile-data-poor-states.pdf

4 The compounding impacts of climate change and environmental degradation in situations of armed conflict

The combination of environmental degradation, climate change and armed conflict can create effects that interact and potentially reinforce each other, causing longer-term and compounding impacts with far-reaching implications for human security.[29]

These compounding impacts may limit access to the resources necessary for civilian survival, disrupt livelihoods, and reduce both health system capacity and the adaptive capacity of individuals and communities. In addition, when environmental degradation and climate change intersect with armed conflict, both domestic and cross-border displacement may increase, thereby exacerbating displaced people's vulnerability to climate-related shocks and disasters. The following sub-sections provide examples of these challenges in the Near and Middle East.

4.1 Inadequate access to resources necessary for survival

The ability to obtain access to basic resources, such as food and water, is an essential element of human security. Armed conflict often limits this access, with further challenges caused by environmental degradation and climate change.

Water availability

Water availability in the Middle East has decreased by 75% since the middle half of the 20th century and is expected to decrease by an another 40% by 2030.[30] Rising temperatures throughout the year, and more variable rainfall in some places, are expected to lead to increased exposure to water stress, drought risk and harvest failure throughout the region.[31] The impacts of armed conflict exacerbate these stresses.

During armed conflicts, access to water and sanitary facilities is often disrupted as a result of infrastructure damage. This can, for instance, hinder the distribution of drinking water and force people to buy water from unregulated sources. Disruption to wastewater management can lead to untreated or inadequately treated wastewater being discharged, which may result in environmental pollution and affect agricultural productivity and human health.[32] In Yemen, conflict-related damage to water infrastructure and sewage systems, and a lack of maintenance due to import restrictions, resulted in millions of people lacking access to clean water in 2017.[33]

29 Intergovernmental Panel on Climate Change (IPCC). Pörtner, H.-O., Roberts, D.C., Poloczanska, E.S., Mintenbeck, K., Tignor, M., Alegría, A., Craig, M., Langsdorf, S., Löschke, S., Möller, V. & Okem, A. 'Summary for policymakers' in Climate change 2022: Impacts, adaptation, and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, 2022. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

30 Middle East Institute, Kandeel, A. Climate Change: The Middle East Faces a Water Crisis, 2017. https://www.mei.edu/publications/climate-change-middle-east-faces-water-crisis

31 Supra note 10, Foreign, Commonwealth & Development Office (FCDO), Met Office & ODI.

32 Food and Agriculture Organization (FAO). When growing vegetables is no longer safe, 2019. http://www.fao.org/fao-stories/article/en/c/1202553/; Schillinger, J., Özerol, G. & Heldeweg, M. 'A social-ecological systems perspective on the impacts of armed conflict on water resources management: Case studies from the Middle East', Geoforum, 133(2–3), 101–116, 2022. https://doi.org/10.1016/j.geoforum.2022.05.001

33 International Committee of the Red Cross (ICRC). 'Yemen: Health system at breaking point as cholera spreads at unprecedented rate', News release, 13 June 2017. https://www.icrc.org/en/document/yemen-health-system-breaking-point-cholera-spreads-unprecedented-rate

"We are used to seeing the mountains and the greenery of our city, but our waste is the dark and hidden side of it." As in many other cities across the region, a lack of solid waste management poses a threat to public health in Sulaymaniyah, Iraq.

Photo: Farman Salih/ICRC

Food insecurity

Food insecurity can be caused or reinforced by factors linked to environmental degradation, climate change and armed conflict, as well as by their compounding impacts. In 2021, Iraq faced a severe drought after unseasonably low rainfall across the Eastern Mediterranean, contributing to decreased water levels in the Tigris and Euphrates rivers. The situation in Iraq was compounded by high temperatures and low spring rainfall. By September, two million people were experiencing food insecurity, with internally displaced people among the worst affected.

Climate change is expected to increasingly affect local food production and increase reliance on food imports.[34] Yemen imported 90% of its staple foods before the conflict.[35] While imports have continued during the armed conflict, food quickly become unaffordable for many owing to economic decline, fuel price spikes and currency collapse. 16.2 million Yemenis faced acute food insecurity by late 2021 – a total expected to increase to 19 million by the end of 2022.[36]

4.2 Decreased health system capacity

The combination of environmental degradation and climate change has numerous health impact on people in the Near and Middle East, including but not limited to malnutrition, water-borne diseases and respiratory illness. Armed conflicts reduce countries' capacity to provide health-care services, maintain social safety nets and support the most vulnerable groups. The impacts on health-care systems are both direct and indirect and include infrastructure damage, injury to and security concerns for medical staff, and disruption to health-care procurement, supplies and human resources.

Climate events, such as floods and landslides, pose further risks to health services and related infrastructure, including roads, bridges and health-care facilities. Health systems are also dependent on reliable access to clean drinking water and electricity and are put at risk if those essential services are disrupted.[37] Extreme weather events may also affect pharmaceutical supply chains, as was the case during the floods in Yemen in 2019.[38]

Reduced access to mental health services is also of concern, with both armed conflict and climate change exacerbating mental health issues while also limiting access to these services. Young people in Syria, for example, rank mental health services among the top three resources that are hardest to access.[39]

4.3 Livelihood disruption

The economic and livelihood-related aspects of human security can be disrupted or undermined by armed conflict. Environmental degradation and climate change can also impact economic security and livelihoods by reducing natural resource availability and ecosystem services.

Disruption to agricultural livelihoods, which are at particular risk, can be observed in all conflict-affected countries across the Near and Middle East,

34 Foreign, Commonwealth & Development Office (FCDO), Met Office & ODI, Richardson, K., Doherty, A., Osborne, R., Mayhew, L., Lewis, K., Jobbins, G., Fox, C., Griffith, H. & El Taraboulsi-McCarthy, S. Climate risk report for the Middle East and North Africa region, 2021. https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/services/government/mena_climate_risk_report_finalversion_27102021.pdf

35 World Bank. Securing imports of essential food commodities to Yemen: An assessment of constraints and options for intervention, 2018. http://documents.worldbank.org/curated/en/376891524812213584/Securing-imports-of-essential-food-commodities-to-Yemen-an-assessment-of-constraints-and-options-for-intervention

36 Integrated Food Security Phase Classification (IPC). Yemen: Acute food insecurity situation January – May 2022 and Projection for June – December 2022, 2022. https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1155479/?iso3=YEM

37 International Committee of the Red Cross (ICRC). Urban services during protracted armed conflict: A call for a better approach to assisting affected people, 2015. https://www.icrc.org/sites/default/files/topic/file_plus_list/4249_urban_services_during_protracted_armed_conflict.pdf

38 UNHCR. UNHCR - Flooding worsens humanitarian needs across Yemen. 2019.

39 International Committee of the Red Cross (ICRC). A decade of loss: Syria's youth after ten years of crisis, 2021. https://www.icrc.org/sites/default/files/wysiwyg/Worldwide/Middle-East/syria/icrc-syria-a-decade-of-loss_en.pdf

with severe implications for food security and income generation. Common drivers of agricultural decline include land degradation, desertification and water scarcity, but also conflict-related damage to farms and agricultural infrastructure, increases in fuel prices, the rising cost and limited availability of agricultural inputs such as fertilizers, and limited access to markets and extension services. In Yemen, at least 70% of households were reliant on agriculture for their income before the conflict escalated in 2015.[40] This high dependency on agriculture, alongside other vulnerabilities, left millions of Yemenis exposed to the economic, social and environmental stresses caused by the armed conflict.[41]

Other natural-resource-dependent livelihoods can be affected as well. In northeastern Syria, pastoralists have faced difficulties in gaining access to grazing land due to the deteriorating security situation,[42] while recurring droughts have reduced scrub vegetation.[43] This has left these pastoralists more dependent on supplementary fodder, which is in limited supply. In Yemen, the fisheries industry has struggled with the combined impacts of armed conflict and climate change, with the conflict-induced rise in fuel prices making fishing unaffordable for many;[44] climate change has also contributed to decreasing yields.[45]

With multiple threats to their livelihoods and no alternative options, households and communities have to adopt coping strategies, some of which exacerbate environmental degradation and human insecurity. Such 'harmful' coping strategies include skipping meals and selling productive assets, such as livestock, for short-term income, as has been documented in Yemen.[46]

4.4 Impacts on mobility, including displacement

Environmental degradation, climate change and armed conflict, as well as their compounding impacts, can prompt people to move, for example, from rural to urban areas. Data collected by the Internal Displacement Monitoring Centre indicate that in 2021, armed conflict was the primary driver of internal displacement in the Near and Middle East. It was responsible for 81% of the 1.2 million new displacements, largely due to the conflicts in Syria and Yemen.[47] At the same time, armed conflicts and climate impacts may impede voluntary mobility by restricting the choices and resources available and can even 'trap' people in unsafe situations.[48]

Camps and informal settlements of internally displaced people and refugees are disproportionately located in climate

40 Food and Agriculture Organization (FAO). Project update – Enhancing food availability through increased agriculture production for subsistence farmers in Hadramout Governorate in Yemen, 2021. https://www.fao.org/3/cb4202en/cb4202en.pdf
41 Integrated Food Security Phase Classification (IPC). Yemen: Acute food insecurity situation January – May 2022 and Projection for June – December, 2022. https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1155479/?iso3=YE
42 PAX for Peace. We fear more war. We fear more drought. How climate and conflict are fragmenting rural Syria, 2022. https://paxforpeace.nl/media/download/PAX_report-Pastoralist_Syria.pdf
43 International Crisis Group. Syria: Shoring up Raqqa's shaky recovery, 2021. https://tinyurl.com/3bbvmuvx
44 United Nations Development Programme (UNDP), Lootsma, A. Yemen's sea change through regeneration of the blue economy, 2022. https://undpyemen.exposure.co/2022-oceans-day
45 World Bank. 'Yemen: Assessing the impacts of climate change and variability on the water and agricultural sectors and the policy implications', Sustainable Development Sector Department Middle East and North Africa Region, 2010. https://tinyurl.com/mp6n7b6d
46 Conflict and Environment Observatory (CEOBS). Yemen's agriculture in distress: A case study of wadis Zabid and Rima, the Tihamah, 2020. https://ceobs.org/how-has-the-conflict-impacted-agriculture-in-the-tihamah
47 Internal Displacement Monitoring Centre (IDMC). Global report on internal displacement 2022: Children and youth in internal displacement, 2022. https://www.internal-displacement.org/sites/default/files/publications/documents/IDMC_GRID_2022_LR.pdf
48 Abel, G.J., Brottrager, M., Cuaresmac, J.C. & Muttarakd, Raya. 'Climate, conflict and forced migration', Global Environmental Change, 54, 239–249, 2019. https://www.sciencedirect.com/science/article/pii/S0959378018301596?via%3Dihub#bbib0210

hazard-prone regions.[49] Flooding, for example, has disproportionately affected displaced populations in Iraq,[50] Yemen,[51] and Syria.[52] At the same time, displaced people often have very limited adaptive capacity, especially those who have been displaced more than once.[53] In many parts of the Near and Middle East, internally displaced people and refugees living in camps remain vulnerable to harsh winter conditions, requiring extensive winterization programmes to protect those living there from the cold.[54]

4.5 Concurrent shocks

In addition to the compounding impacts described above, populations exposed to the impacts of climate change, environmental degradation and armed conflict are also at greater risk of concurrent shocks.

The growing frequency of extreme weather events associated with climate change also increases the likelihood that people and communities already affected by armed conflict or acute environmental degradation are hit by a second crisis caused by the impacts of extreme heat, rainfall, storms or floods. Climate shocks and disasters – such as heatwaves and droughts – may also occur simultaneously. The compounding impacts of these simultaneous events can have major socio-economic consequences for individuals, communities and countries.[55] This trend can be observed in the Near and Middle East, where the International Federation of Red Cross and Red Crescent Societies issued humanitarian appeals for flooding in Yemen in 2022[56] and drought in Syria in 2021.[57] Similarly there were appeals issued in relation to cholera outbreaks in both Syria[58] and Iraq[59] in 2022.

49 Intergovernmental Panel on Climate Change (IPCC), Birkmann, J., Liwenga, E., Pandey, R., Boyd, E., Djalante, R., Gemenne, F., Leal, W., Pinho, P.F, Stringer, L. & Wrathall, D. 'Poverty, livelihoods and sustainable development', Climate change 2022: Impacts, adaptation, and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, 2022. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FOD_Chapter08.pdf

50 United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Iraq: Floods – Oct 2015, 2015. https://reliefweb.int/disaster/fl-2015-000153-irq

51 United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Yemen: Flash floods in southern governorates – Flash update No.1 (as of 31 March 2020), 2021. https://reliefweb.int/report/yemen/yemen-flash-floods-southern-governorates-flash-update-no-1-31-march-2020-enar

52 CCCM Cluster, REACH & United Nations Satellite Centre (UNOSAT). Syria – South Dana sub-district / Idleb: IDP camps and informal sites flood susceptibility and flood hazard assessment (August 2021), 2021. https://reliefweb.int/report/syrian-arab-republic/syria-south-dana-sub-district-idleb-idp-camps-and-informal-sites-flood

53 Red Cross Red Crescent Climate Centre, Easton Calabria, E., Jaime, C. & Shenouda, B. Anticipatory action in refugee and IDP camps: Challenges, opportunities and considerations, 2022. https://www.climatecentre.org/wp-content/uploads/Anticipatory-Action-in-Refugee-and-IDP-Camps-V336.pdf

54 United Nations High Commissioner for Refugees (UNHCR). UNHCR regional winterization assistance plan 2022–2023, 2022. https://reliefweb.int/report/syrian-arab-republic/unhcr-regional-winterization-assistance-plan-2022-2023-syria-and-iraq-situations-september-2022-enar?gclid=Cj0KCQiApKagBhC1ARIsAFc7Mc5u2oBHlLp5v7_Wx-ESMgqGsj7wg68b2cKtMyYX1bALA08jvqqujwQaAoJjEALw_wcB

55 de Brito, M.M. 'Compound and cascading drought impacts do not happen by chance: A proposal to quantify their relationships', Science of The Total Environment, 778, 2021. https://www.sciencedirect.com/science/article/pii/S0048969721013048

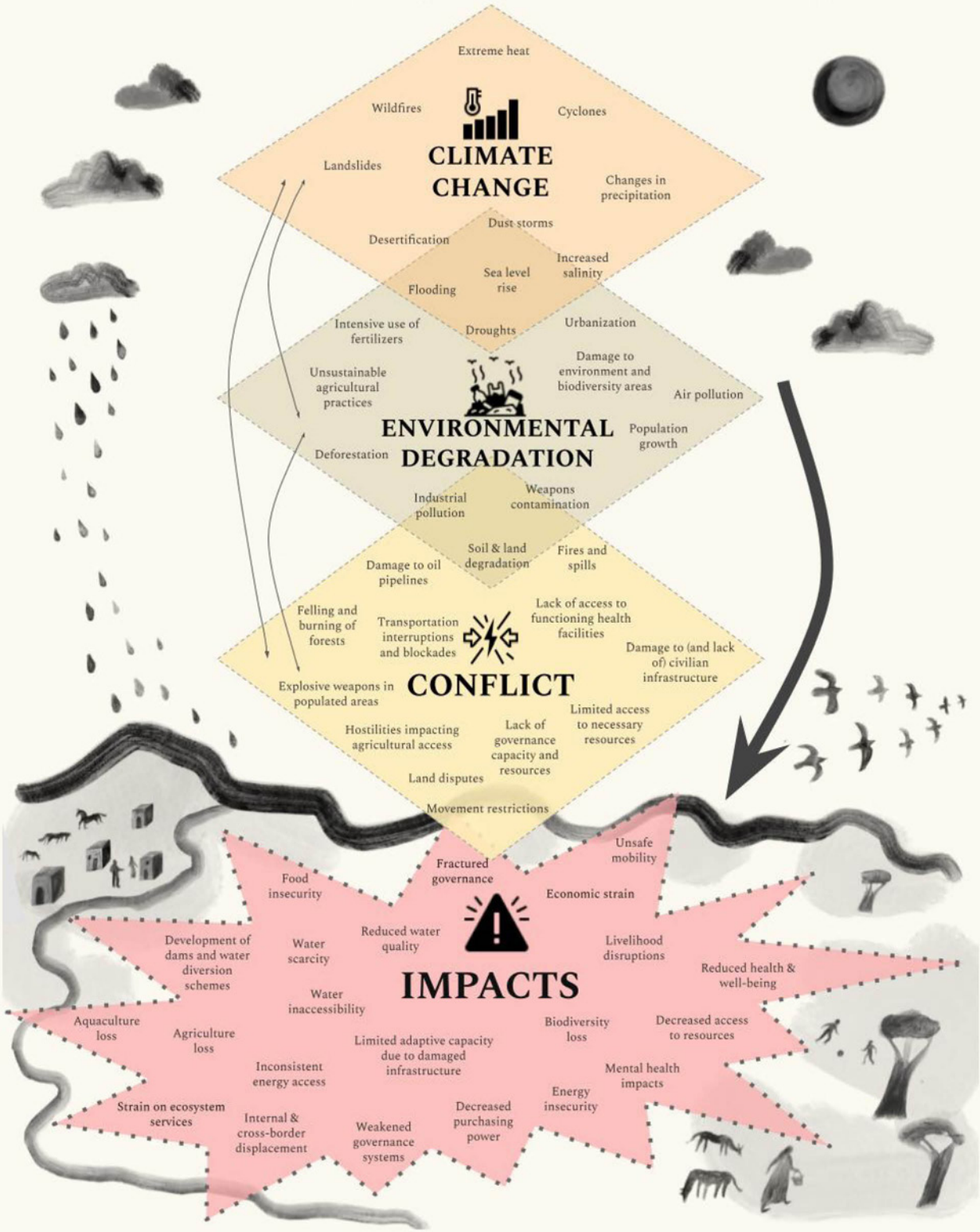
56 International Federation of Red Cross and Red Crescent Societies (IFRC) Appeals: Yemen. https://go.ifrc.org/countries/10#operations

57 International Federation of Red Cross and Red Crescent Societies (IFRC) Appeals: Syria – Drought 2021. https://go.ifrc.org/emergencies/5627

58 International Federation of Red Cross and Red Crescent Societies (IFRC) Appeals: Syria. IFRC GO - Operations

59 International Federation of Red Cross and Red Crescent Societies (IFRC). IFRC GO - IRQ: Other - 2022-06 - The response of the Iraqi Red Crescent Society to the outbreak of cholera

An illustration of compound risks in the Near and Middle East region



Ilustration: Carolina Pereira Marghidan and Rebeka Ryvola

5 Coping mechanisms and adaptation approaches

As climate change intensifies, the risks to conflict-affected populations will most likely be exacerbated. This increases the need for adaptation to climate change, defined by the Intergovernmental Panel on Climate Change as "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities".[60] Adaptation strategies that take into account the social, political, economic and environmental factors driving vulnerability and compounding risks can help to prevent maladaptation and the use of harmful coping strategies, and build overall community resilience to environmental and conflict-related challenges.

5.1 Overview of climate adaptation approaches

There is a wide variety of approaches to climate adaptation, ranging from technical and engineering solutions to adjustments to local communities' social, institutional or governance systems. Adaptation should be considered as an iterative process in which adaptation approaches build on previous successes – or rectify previous failures – and come hand in hand with continuous monitoring, evaluation and learning processes.[61] Adaptation strategies that do not address pre-existing systemic inequalities or that marginalize certain groups may have adverse societal outcomes, known as maladaptation.[62]

5.2 Adaptation and resilience initiatives in conflict-affected settings in the Near and Middle East

State-led adaptation in countries affected by armed conflict

The effectiveness of state-led adaptation processes crucially depends on the institutional capacity of the national government.[63] In conflict-affected settings, this capacity can be reduced by factors such as a lack of resources and brain drain, broader political instability linked to frequent changes in government and a focus on immediate needs rather than adaptation.[64]

An important component of state-led climate action is the engagement with international climate processes related to the United Nations Framework Convention on Climate Change (UNFCCC). However, in Iraq and Syria there are significant gaps in the UNFCCC-mandated documentation, particularly related to the

60 Intergovernmental Panel on Climate Change (IPCC). Annex I: Glossary, 2022. https://www.ipcc.ch/report/sr15/glossary/

61 Intergovernmental Panel on Climate Change (IPCC). Ara Begum, R., Lempert, R., Ali, E., Benjaminsen, T.A., Bernauer, T., Cramer, W., Cui, X., Mach, K., Nagy, G., Stenseth, N.C., Sukumar, R. & Wester, P. 'Point of departure and key concepts', Climate change 2022: Impacts, adaptation and vulnerability: Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, 2022. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter01.pdf

62 Carbon Brief. Guest post: Why avoiding climate change 'maladaptation' is vital, 2021. https://www.carbonbrief.org/guest-post-why-avoiding-climate-change-maladaptation-is-vital/

63 Berrang-Ford, L., Ford, J.D., Lesnikowski, A., Poutiainen, C., Barrera, M. & Heymann, S.J. 'What drives national adaptation? A global assessment', Climatic Change, 124(1–2), 441–450, 2014. https://doi.org/10.1007/s10584-014-1078-3

64 Food and Agriculture Organization (FAO) & World Bank. Water management in fragile systems: Building resilience to shocks and protracted crises in the Middle East and North Africa, 2018. http://www.fao.org/3/i9730en/I9730EN.pdf

development of national adaptation plans, which are also key reference points for financing.[65] As these countries lack the necessary capacity, they have fallen behind on adaptation.

Gaining access to multilateral climate finance for state-led adaptation projects in conflict-affected countries is challenging due to the strict governance requirements and an aversion to investing in volatile contexts. Only 19 single-country projects in Iraq, Syria and Yemen had been approved for funding as of January 2022,[66] with the amount disbursed representing less than 0.5% of the funds allocated to climate projects worldwide.

Given that authorities face challenges in accessing climate finance, capacity-building programmes are important for reducing the funding gap in conflict-affected countries. Between 2018 and 2020, the Green Climate Fund (GCF) Readiness Programme, which focuses on capacity-building and improved governance related to climate action,[67] was implemented in Iraq with a view to strengthening national capacities. In 2019, two GCF readiness activities were also approved for Syria.[68] Such programmes can provide targeted support to improve access to climate finance in specific situations. However, a recent policy brief identified risk aversion on the part of climate actors, inflexible application and fiduciary requirements, disjointed responses, and institutional silos in both donor institutions and recipient states as obstacles preventing conflict-affected countries from accessing financing for climate adaptation. As a result, fragile and conflict-affected states lack adequate adaptation funding, particularly from multilateral climate funds.[69]

Local, small-scale adaptation in situations of armed conflict

Given the challenges to state-led adaptation caused by diminished institutional capacity, local, small-scale initiatives play an important role in building community resilience. Evidence from the World Bank in Yemen found, for example, that community-based project outcomes were more resilient to the disruption caused by armed conflict than those of state-run projects.[70]

At the local level, adaptation to climate change and environmental degradation often means changing or diversifying livelihoods and ways of living. Strategies for doing this can be scarce and more challenging to implement in situations of armed conflict, as patterns of violence often limit livelihood opportunities, complicate access to resources and exacerbate displacement. Local, small-scale initiatives usually focus on building individual and community resilience, rather than specifically engaging in climate adaptation. In the Near and Middle East, such initiatives also tend to focus on livelihood diversification and food security.

However, local, small-scale initiatives have extremely limited access to structured climate

65 Overseas Development Institute (ODI), International Committee of the Red Cross (ICRC), Red Cross Red Crescent Climate Centre. Peters, K., Mayhew, L., Slim, H., van Aalst, M. & Arrighi, J. Double vulnerability: The humanitarian implications of intersecting climate and conflict risk, 2019. https://odi.org/en/publications/double-vulnerability-the-humanitarian-implications-of-intersecting-climate-and-conflict-risk/

66 The Climate Funds Update database collates information from 27 multilateral climate funds. See https://climatefundsupdate.org/.

67 Green Climate Fund (GCF). Readiness and preparatory support programme guidebook, 2020. https://www.greenclimate.fund/sites/default/files/document/readiness-guidebook_2.pdfCF, 2020.

68 Green Climate Fund (GCF). NDA strengthening and country programming support for Syrian Arab Republic through FAO, 2019. https://www.greenclimate.fund/document/nda-strengthening-and-country-programming-support-syrian-arab-republic-through-fao; Green Climate Fund (GCF). Strategic frameworks support for the Syrian Arab Republic through CTCN and UNIDO, 2019. https://www.greenclimate.fund/document/strategic-frameworks-support-syrian-arab-republic-through-ctcn-and-unido

69 ICRC, ODI, ICVA, Mercy Corps, RCCC, UNHCR, WFP.Embracing Discomfort: A Call to Enable Finance for Climate-Change Adaptation in Conflict Settings. 2022.

70 World Bank. Implementation completion and results report on a Global Environment Facility grant (GEF-TF096330) in the amount of US$4.0 million and on a Japanese Social Development Fund grant (JSDF-TF098754) in the amount of US$2.78 million to the Republic of Yemen for a Agro-Biodiversity and Climate Adaptation Project and associated Piloting Coping Strategies for Rainfed Farmers Project, 2015. https://publicpartnershipdata.azureedge.net/gef/GEFDocuments/f8adf3b7-de7c-e811-8124-3863bb2e1360/TE/TerminalEvaluationTE_3267%20TE.pdf

finance mechanisms for two reasons. First, there is an overall lack of international climate finance for local action, which affects wider community-led climate initiatives.[71] Second, local action may be excluded if it is located in conflict-intense areas or in areas under the control of non-state armed groups, as funding agencies often consider these to be high-risk areas.[72]

Humanitarian aid can be an alternative source of funding. For example, a locally led flood-adaptation project in northern Yemen was made possible thanks to the material support provided by the ICRC. Including adaptive elements in such projects is particularly warranted if damaged infrastructure can be rebuilt to be more climate resilient. Close collaboration with local communities allows humanitarian organizations to address the needs of communities and build on existing initiatives to improve local ownership and build local capacities that can translate into longer-term adaptive outcomes. However, humanitarian actions alone are not enough to meet people's needs and fill the gaps in climate financing.

Mobility-related adaptation strategies

Displaced people living in camps and informal settlements have often lost their livelihoods and resources and face restrictions to their rights (including freedom of movement) and security-related risks. This severely limits their adaptive capacity and makes them particularly vulnerable to climate risks. There are a few examples of innovative ways in which displaced individuals and communities have adapted to climate change impacts, but examples of structured adaptation projects in camp settings are rare.[73]

In many cases, humanitarian interventions are designed to provide short-term relief and ensure that people can can remain where they are for the time being, even in contexts where climate change is expected to make an area inhospitable or even uninhabitable. Humanitarian planning in such circumstances must be complemented with up-to-date information on climate trends and adaptation pathways, and allow people to make informed decisions about possible adaptation strategies, including whether to stay or go.[74] The chances of success of mobility-related adaptation strategies can be increased through the adoption of policies and practices that facilitate regular internal and cross-border population movements and through the provision of support to vulnerable communities before they exhaust alternative adaptation approaches or are displaced by extreme events. Populations already on the move or in host areas need to be supported as well.[75]

71 International Institute for Environment and Development (IIED), Soanes, M., Rai, N., Steele, P., Shakya, C. & Macgregor, J. Delivering real change: Getting international climate finance to the local level, 2017. https://pubs.iied.org/sites/default/files/pdfs/migrate/10178IIED.pdf; IIED, Holland, E., Patel, S., Roe, D. & Sakya, C. Money where it matters for people, nature and climate: Driving change through support for local level decision making over resources and finance', 2022. https://pubs.iied.org/sites/default/files/pdfs/2022-05/20966iied.pdf

72 Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC), Cao, Y., Alcayna, T., Quevedo, A. & Jarvie, J. Exploring the conflict blind spots in climate adaptation finance: Synthesis report, 2021. https://www.sparc-knowledge.org/sites/default/files/documents/resources/exploring-the-conflict-blind-spots-in-climate-adaptation-finance.pdf; Sitati, A., Joe, E., Pentz, B., Grayson, C., Jaime, C., Gilmore, E., Galappaththi, E., Hudson, A., Alverio, G.N., Mach, K. J., van Aalst, M., Simpson, N., Schwerdtle, P.N., Templeman, S., Zommers, Z., Ajibade, I., Chalkasra, L.S.S., Umunay, P., Togola, I., . . . Coughlan de Perez E. 'Climate change adaptation in conflict-affected countries: A systematic assessment of evidence', Discover Sustainability, 2(1), 42, 2021. https://doi.org/10.1007/s43621-021-00052-9

73 Red Cross Red Crescent Climate Centre. Easton Calabria, E., Jaime, C. & Shenouda, B. Anticipatory action in refugee and IDP camps: Challenges, opportunities and considerations, 2022. https://www.climatecentre.org/wp-content/uploads/Anticipatory_Action_in_Refugee_and_IDP_Camps.pdf

74 International Committee of the Red Cross (ICRC). When rain turns to dust: Understanding and responding to the combined impact of armed conflicts and the climate and environment crisis on people's lives, 2020. https://shop.icrc.org/when-rain-turns-to-dust-pdf-en

75 Cissé, G., McLeman, R., Adams, H., Aldunce, P., Bowen, K., Campbell-Lendrum, D., Clayton, S., Ebi, K.L., Hess, J., Huang, C., Liu, Q., McGregor, G., Semenza, J. and Tirado, M.C. 'Health, Wellbeing, and the Changing Structure of Communities'. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge and New York: Cambridge University Press, pp. 1171–1274. Available at: https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter07.pdf

The ICRC and the Syrian Arab Red Crescent contribute to the repair works of the pumping station in order to increase access to water for Hasakeh residents.

Photo: Diman Ameen/ICRC

5.3 Challenges to adaptation in settings affected by armed conflict

Different cross-cutting challenges to designing and implementing adaptation strategies in situations of armed conflict have been identified and discussed in varying degrees throughout this report. These challenges include:

- changing, unstable and often unpredictable situations that prevent adaptation action from being effectively implemented
- lack of data and evidence to inform adaptation in conflict-affected areas
- practical, legal and institutional barriers to addressing the needs of displaced populations, even though they are disproportionally vulnerable to climate-related shocks and stresses.

The contributing causes and consequences of the above challenges are summarized in Annex 1.

6 Conclusion and recommendations

The Near and Middle East is heavily affected by environmental degradation and climate change, with impacts including water stress, declining agricultural production and increasing public health challenges linked to high temperatures, increased air pollution and decreasing water quality and availability. Current and previous armed conflicts in the region have further exacerbated the situation and increased vulnerabilities, due to their impacts on three different levels:

- **Weakened governance systems,** as authorities may lose capacity, resources and organizational knowledge, get cut off from international efforts, and be unable to include civil society and private-sector groups in the management of common resources because security is prioritized over other issues, or because of a lack of trust.

- **Damage to the environment and infrastructure** as a direct consequence of the conflict or as a result of harmful coping mechanisms or mismanagement, which can undermine the livelihood sources and ecosystem services that underpin healthy societies.

- **Detrimental impact on human security** due to the damage caused to health, livelihood systems and the infrastructure and ecosystems that support them.

The combined impacts of armed conflict, climate change and environmental degradation cannot be averted through humanitarian action alone.

Humanitarian, development, environmental and peacebuilding actors need to work together to help lay the foundations for long-term sustainability and community resilience before, during and after a crisis. We call upon these actors to advocate for urgent action to reduce greenhouse gas emissions and work together to strengthen in-country climate action for people affected by armed conflict by:

- **Making it easier for conflict-affected countries and communities to access financing for climate adaptation.** There is a need to ensure that populations affected by the combined impact of conflict, climate change and environmental degradation receive the support they need. The findings in this report support experts' call for policymakers in states, multilateral financial institutions and climate funds to approach risk differently, support action at multiple scales and with diverse actors, improve coordination across the international aid structure, and address silos that hinder action.

- **Investing in adaptation programmes that address needs across sectors, including by building health system resilience.** Alongside adaptation in food and water systems, there is an acute need to invest in health system resilience in conflict-affected countries, so that they can respond to the combined impact of environmental degradation, climate and conflict on lives and health. Health systems should be better equipped to deal with the increased health burden, by enhancing their preparedness to respond to diseases with epidemic potential and the increased burdens of chronic disease (including mental health) and malnutrition. Taking a holistic approach to health that recognizes the intrinsic links between human, animal and environmental health will help countries to address these compounding impacts.

- **Providing humanitarian and adaptation support to displaced people and people**

at risk of displacement in conflict-affected countries. Displacement can be prevented by providing environmental management and climate adaptation support to vulnerable communities already bearing the consequences of armed conflict before they exhaust existing adaptation options or are exposed to extreme weather events; this will help to strengthen their resilience. Similarly, adaptation initiatives geared towards displaced people can help to prevent further displacement, especially for those living for protracted periods in camps or informal settlements originally built for short-term stays and thus particularly vulnerable to climate risks. At the same time, it is essential to recognize that both in-country and cross-border mobility can be an important adaptation, coping and even survival strategy for people facing the combined effects of climate change, environmental degradation and armed conflict. As such, mobility-related considerations should be integrated into adaptation support strategies and approaches, taking into account the priorities and concerns of those affected.

- **Supporting locally led adaptation, tailored to conflict-affected context.** Including local communities as key agents in adaptation efforts enhances adaptive outcomes and reduces the risk of maladaptation. People and communities on the front lines of climate change – including displaced people – are often in the best position to identify the most pressing risks and issues and to contribute to finding solutions. The priorities for all organizations, including humanitarian organizations and donors, should be to enable devolved decision-making, to ensure direct access for legitimate community-led structures without reference to central governments, to address structural inequalities, and to invest in local capabilities and flexible programming. Accountability towards the people humanitarian organizations seek to assist is a critical component of humanitarian engagement within adaptation and resilience-building processes.

- **Collaborating across sectors to strengthen the adaptive capacity of people and communities and the evidence base concerning successful adaptation work in conflict-affected settings.** Operational collaboration across the humanitarian-development-peacebuilding nexus can help to harness the complementary nature of these organizations' mandates and expertise with a view to helping the most vulnerable communities adapt to a changing climate and environmental degradation. Humanitarian and peacebuilding actors can help to sharpen the conflict and risk analysis of development and climate actors in order to 'de-risk' and contextualize action in conflict settings, thereby supporting climate adaptation activities that meet the needs of conflict-affected communities. Investment in environmental and climate services, especially in remote areas and informal settlements, will enable anticipatory action and better responses, while empirical studies on successful and unsuccessful adaptation measures in conflict-affected areas are critical to ensure informed decision-making and programming. Drawing on traditional and historic knowledge of climate patterns when systematizing climate information will also be necessary in places where hostilities and resource constraints have rendered climate data infrastructure inoperable.

Annex 1. Summary of cross-cutting challenges to climate adaptation in situations of armed conflict, as identified during the course of this research

Challenges	Causes	Contributing factors	Outcomes
Changing, unstable and often unpredictable situations that prevent adaptation action from being effectively implemented	Conflict-affected countries and communities are unable to access climate finance for adaptation	• Global imbalance between mitigation and adaptation financing • Insufficient funds for adaptation granted and disbursed from bilateral donors and multilateral climate funds • Difficulties meeting eligibility requirements of climate funds due to issues such as lack of eligibility, institutional capacity, and donor risk aversion • General difficulty of accessing climate finance for small-scale, local initiatives	In the absence of support for adaptation, climate change impacts on people and communities already affected by compounding risks continue to worsen – leading to increasing humanitarian needs. Increased risk of maladaptive outcomes. Missed opportunities for making humanitarian response climate-smart with adaptive outcomes.
	Impacts of armed conflict on security situation, the environment and key infrastructure	• Disruptions to planned and ongoing projects and loss of key personnel to injury or brain drain • Pressures on environment and ecosystems services accelerating environmental degradation • Damage to and destruction of key agricultural, water and environmental infrastructure	
	The capacities of the domestic authorities are weak, absent or not robust	• Managing impacts of armed conflict prioritized over longer-term environmental and adaptation measures • Institutional capacity erosion, and damage or destruction of facilities and equipment • Siloed ways of working in governments, including ministries managing international aid and climate finance	
	Disjointed responses among international actors	• Disjointed approaches, between humanitarian and development actors • Lack of coordination and knowledge sharing between organizations • Siloed ways of working in donor institutions and in recipient state structures • Differential access to communities located in areas under the control of non-state armed groups	

Challenges	Causes	Contributing factors	Outcomes
Lack of data and evidence to inform adaptation in conflict-affected areas	Lack of reliable, high-quality weather and climate information (including historical, current and prospective information) in countries and areas affected by armed conflict	• Absence of or damage to weather stations in many areas • Insufficient resources • Lack of qualified technical staff • Lack of resources to systematize available data, and absence of mechanisms to incorporate local knowledge and historical data	Adaptation measures are not evidence-based and may be ineffective or inadvertently contribute to maladaptation
	Lack of information about and learning from successful adaptation measures in areas affected by armed conflict	• Lack of information sharing between actors with access and actors without access • General lack of data collection on adaptation strategies and initiatives • Lack of documentation of successful examples	
	Lack of information about particularly vulnerable people	• Lack of disaggregated population data • Lack of information about specific groups, including displaced people	
Practical, legal and institutional barriers to addressing the needs of displaced populations, even though they are disproportionally vulnerable to climate-related shocks and stresses	Lack of information about climate risks in areas under the control of non-state armed groups	• Limited access to communities in areas controlled by non-state armed groups • Absence of or damage to weather stations • Lack of information sharing between actors with access and actors without access	High levels of exposure to hazards and unmitigated vulnerability to climate-related shocks and stresses contribute to making displaced people progressively more impoverished and adversely affect their health
	Limited legal and humanitarian space for meaningful adaptation to address the specific needs of displaced people	• Contested ownership of plots on which camps and settlements are located • Short-term humanitarian planning and intervention cycles	
	Lack of planning for communities and groups at risk of protracted displacement due to climate risks and environmental degradation	• Lack of community access to climate information and information on adaptation pathways • Lack of planning to facilitate relocation of worst-affected communities • Disjointed approaches between humanitarian and development actors or organizations • Lack of coordination and knowledge sharing between organizations	

ICRC

Norwegian **Red Cross**