



Trends and Impacts in Conflict Settings No. 7

Climate, peace and security in the Arab region

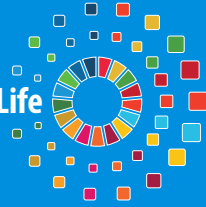


Shared Prosperity **Dignified Life**





Shared Prosperity **Dignified Life**



VISION

ESCWA, an innovative catalyst for a stable, just and flourishing Arab region

MISSION

Committed to the 2030 Agenda, ESCWA's passionate team produces innovative knowledge, fosters regional consensus and delivers transformational policy advice. Together, we work for a sustainable future for all.



Trends and Impacts in Conflict Settings No. 7

Climate, peace and security in the Arab region



UNITED NATIONS
Beirut



© 2023 United Nations

All rights reserved worldwide.

Photocopies and reproductions of excerpts are allowed with proper credits.

All queries on rights and licenses, including subsidiary rights, should be addressed to the United Nations Economic and Social Commission for Western Asia (ESCWA),
email: publications-escwa@un.org.

The findings, interpretations and conclusions expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations or its officials or Member States.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Links contained in this publication are provided for the convenience of the reader and are correct at the time of issue. The United Nations takes no responsibility for the continued accuracy of that information or for the content of any external website.

References have, wherever possible, been verified.

Mention of commercial names and products does not imply the endorsement of the United Nations.

References to dollars (\$) are to United States dollars, unless otherwise stated.

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

United Nations publication issued by ESCWA, United Nations House,

Riad El Solh Square, P.O. Box: 11-8575, Beirut, Lebanon.

Website: www.unescwa.org

2301010E

Acknowledgements

This report is the seventh in the “Trends and Impacts in Conflict Settings” publication series of the Economic and Social Commission for Western Asia (ESCWA). It is the result of a team effort between the Governance and Conflict Prevention Cluster, led by Tarik Alami, and the Climate Change and Natural Resource Sustainability Cluster, led by Carol Chouchani Cherfane. The publication was developed under their guidance.

The authors also wish to thank the participants of the expert group meeting “Climate-related security risks in the Arab region” held for this publication on 23 May 2023. The discussions contributed greatly to enhancing the content, especially the recommendations.

Report coordinator: Youssef Chaitani, Senior Project Coordinator on Risk Prevention (ESCWA).

Primary authors: Julie Bryhn (ESCWA), Sara Hess (ESCWA), Joaquin Salido Marcos (ESCWA) and Pattile Nahabedian (ESCWA).

Reviewers and contributors: Sumaya Almajthoob (ESCWA), Raffaele Bertini (ESCWA), Halvard Buhaug (Peace Research Institute Oslo), Melani Cammett (Harvard University), Stephanie Chaban (ESCWA), Lana El Skafi (ESCWA), Mey Eltayeb Ahmed (University of Khartoum), Nadim Farajalla (American University of Beirut), Florence Gaub (Furata Institute), Martina Jaskolski (Alliance Bioversity/CIAT), Ziad Khayat (ESCWA), Kyungmee Kim (Stockholm International Peace Research Institute), Florian Krampe (Stockholm International Peace Research Institute), Erin McFee (UKRI Future Leaders Fellow, London School of Economics), Walid Saleh (Food and Agriculture Organization of the United Nations), Johan Schaar (Stockholm International Peace Research Institute), Maha Skah (United Nations Department of Political and Peacebuilding Affairs), Pietro Tornese (ESCWA), Paola Vesco (Uppsala University), Leah Zamore (New York University) and Marlene Ann Tomaszewicz (ESCWA).

Research support: Jala El Akoum (ESCWA).

Administrative support: Nancy Zreik (ESCWA).

Contents

Acknowledgements	3
Introduction	7
1. Overview of the potential links between climate, peace and security	9
2. Contextualizing climate, peace and security in the Arab region	13
A. The presence of fragility, governance challenges, insecurity and conflict	14
B. Climate change and vulnerability	19
3. Manifestations of climate-related security risks	25
A. Loss of income and livelihoods	26
B. Resource competition	29
C. Food insecurity	30
D. Migration	32
4. Addressing climate-related security risks in the Arab region	37
A. Policy considerations	38
B. Recommendations	39
5. Concluding remarks	45
References	46
Endnotes	54

List of figures

Figure 1. Potential linkages between climate and conflict risks	10
Figure 2. Overview of particularly fragile and vulnerable countries in the Arab region	14
Figure 3. Number of fatalities in the Arab region	15
Figure 4. People in need of humanitarian aid in the Arab region	15
Figure 5. Relative perceptions of political stability and absence of politically motivated violence, 2021	16
Figure 6. Relative perceptions of government effectiveness, 2021	16
Figure 7. Relative perceptions of the rule of law, 2021	17
Figure 8. Relative perceptions of regulatory quality, 2021	17
Figure 9. Number of demonstrations in the Arab region	17
Figure 10. Relative perceptions of voice and accountability, 2021	17
Figure 11. Central government debt	18
Figure 12. GDP per capita	18
Figure 13. Mean temperature change for 2025	19
Figure 14. Number of people affected by natural disasters in the Arab region	20
Figure 15. Mean change in the number of summer days	20
Figure 16. Seasonal change in annual number of days when daily precipitation exceeds the 90 th percentile precipitation	21
Figure 17. Mean change in the maximum length of dry spells	22
Figure 18. Employment in agriculture, 2019	27
Figure 19. Change in water available for crops	31
Figure 20. Displaced people, 2022	33
Figure 21. New internal displacements in the Arab region	33

List of boxes

Box 1. Overpopulation, droughts and desertification as drivers of conflict in Darfur	26
Box 2. Climate change, livelihood loss and piracy in Somalia and East Africa	28
Box 3. Natural resource management challenges in host communities	34



Introduction

As temperatures rise, more frequent and intense extreme weather is impacting the lives and livelihoods of people around the world. Traditionally, the climate and security discourse has focused on how the effects of climate change exacerbate national and regional insecurity with implications for the maintenance of international peace and security. However, the effects of climate change go beyond their impact on the outbreak and intensity of hostilities. In areas already affected by conflict, climate-related impacts can become a game changer and exacerbate existing economic, social or political drivers of insecurity, further exposing already vulnerable populations to multiple and intersecting crises.

The Arab region¹ is no exception as it experiences increasing and more intense climate hazards, including prolonged droughts in Iraq, Somalia and the Syrian Arab Republic, extreme flooding in the Sudan and Yemen, as well as sea-level rise in Egypt and sand and dust storms in the Gulf States. At the same time, the region is suffering from protracted conflicts, insecurity and fragility. Despite conflict-intensity having decreased overall since 2014, humanitarian needs, the number of displaced people and governance challenges remain high.

Responding to such compounding challenges is both an imperative and an opportunity to identify entry points that can boost peace and prosperity across the region. In 2018, the climate security mechanism (CSM) was established to help the United Nations system analyse and address the impacts of climate change on peace and security. The United Nations Security Council has recognized the adverse impacts of climate change on stability in relation to several different regional and country-specific situations. This includes four special political missions active in the Arab region (United Nations Assistance Mission in Somalia (UNSOM), United Nations Integrated Transition Assistance Mission in Sudan (UNITAMS), United

Nations Assistance Mission for Iraq (UNAMI) and United Nations Office for West Africa and the Sahel (UNOWAS). The UNSOM was moreover the first field mission to have a full-time climate security and environmental adviser, with several others following. In 2021, a draft Security Council resolution aiming to integrate climate security as part of the conflict prevention strategies of the United Nations was co-sponsored by 113 Member States.²

The complex interplay between climate, peace and security intersects with other essential development priorities. Effectively implementing the 2030 Agenda and its Sustainable Development Goals (SDGs) necessitates addressing these interconnected issues. Recognizing that climate change, conflict and insecurity also have different impacts on different groups, such as women, youth, persons with disabilities and other traditionally marginalized groups, the topic is widely recognized in different global frameworks.³ The women, peace and security agenda, for example, recognizes climate change as an important consideration for the peace and security of women and girls.⁴

The objective of this report is to provide an overview of climate security risks in the Arab region and provide recommendations for policymakers, multilateral agencies and relevant stakeholders to mitigate these risks. To do this, the report draws on an analysis of the potential linkages and pathways between climate change, conflict and insecurity. The following sections will first outline relevant regional trends, in relation to insecurity, conflict and fragility (chapter 2 (A)) and climate change (chapter 2 (B)), before diving into the pathways for climate security risk (chapter 3). The report concludes by outlining the key policy considerations (chapter 4 (A)) and providing a set of recommendations and associated action points (chapter 4 (B)).



1. Overview

of the potential links between climate, peace and security



● The relationship between climate change, peace and security is complex and interrelated with several other trends and factors.



● Conflict-affected and fragile contexts are likely to be the most vulnerable to climate impacts, since fragility is related to the susceptibility to crises, instability and potentially conflict, through weak or insufficient capacity to manage, absorb or mitigate risks.

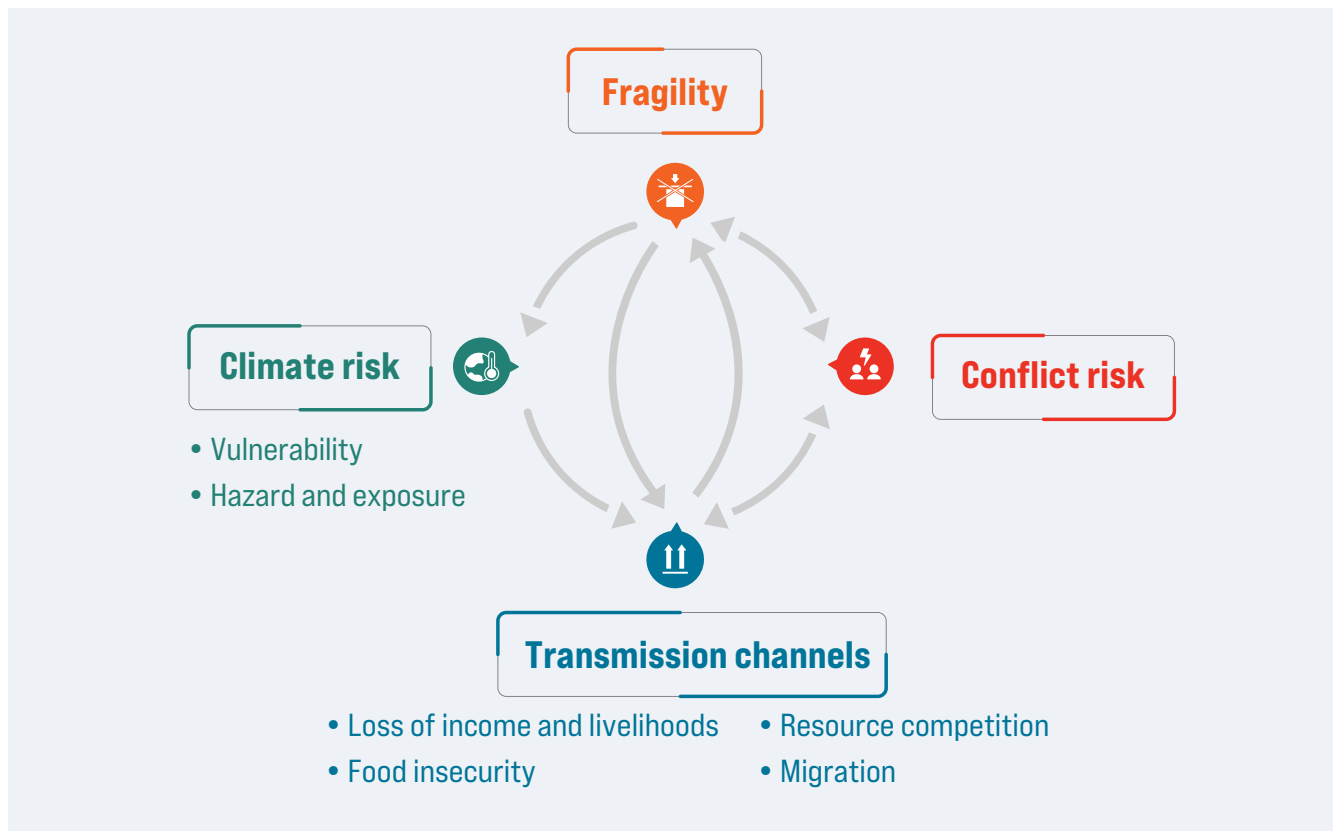


● The quality of governance and efficacy of institutions affect the capacity to respond to, adapt to and cope with climate risk, and have the potential to moderate insecurity and tensions arising through the different transmission channels.

The relationship between climate change, peace and security is complex and interrelated with several other trends and factors. The cascading effects of climate change have the capacity to affect well-known sociopolitical, economic and demographic drivers of (in) security and conflict risk. This affects people in different ways, due to, among other factors, gender norms, disability, access to resources and power dynamics that condition different levels of exposure to hazards, vulnerabilities and capacities to cope with, manage or mitigate risks.

Therefore, to understand the relationship between climate change, peace and security, identifying the channels through which they might be connected is key. Building on the framework developed by Uppsala-PRIO and Economic and Social Commission for Western Asia (ESCWA),⁵ four key channels have been identified for the transmission from climate risk to conflict risk, notably loss of livelihoods and incomes, resource competition, food insecurity and migration (figure 1). These are all affected by climate change and may contribute to an increased risk of conflict. Other megatrends such as demographic changes, urbanization and technological change may also affect these channels.

Figure 1. Potential linkages between climate and conflict risks



Source: Authors adapted from Uppsala-PRIO and ESCWA (2021).

Importantly, these mechanisms can also be sources of insecurity by and of themselves. Insecurity in this sense is grounded in the seven dimensions of human security (economic, food, health, community, environmental, personal and political) and can occur at multiple levels (personal, household, community, State or transnational).⁶ For example, food insecurity links directly to insecurity in the food dimension and loss of income or livelihoods and can lead to economic insecurity, while at the same time they can both also contribute to increased risk of conflict. This broad concept of (in)security reinforces the linkages between climate change, development, human rights, gender equality, and peace and security.

Conflict may also affect these transmission channels, exacerbate environmental degradation and increase fragility and vulnerability to climate change. The combined challenges may thus create “vicious vulnerability and conflict traps”.⁷ Conflict-affected and fragile contexts are thus exposed to intersecting and multiplying risks that have the potential to trigger downward spirals of climate disasters and conflict.⁸

Vulnerability is key to determining the extent to which exposure to climate hazards leads to adverse impacts. This relates to the ability of people, institutions and systems to adjust to, address, manage and overcome adverse climate impacts or, in other words, adaptive and coping capacity. The quality and efficacy of governance and institutions, socioeconomic development, infrastructure, inequality, gender roles, disability and more play an important role in this regard. As such, adaptive and coping capacity is closely related to and affected by fragility.

Broadly understood, fragility is related to the susceptibility to crises, instability and potential conflict, through weak or insufficient capacity to manage, absorb or mitigate risks. Fragility can be present to different extents and manifest through a combination of different dimensions, including the institutional, political, economic and social. Weak institutions, persistent social inequalities and political instability are thus some indications of fragility. At the same time, they are likely to affect adaptive and coping capacity among individuals, communities and Governments.

Countries that are the most fragile are thus also likely to be most vulnerable to climate impacts. Levels of vulnerability and fragility also vary across societies and communities. Different groups experience different levels of vulnerability due to structural inequalities, power dynamics, access to resources and more. This is primarily due to the impact of gender norms, disability and power dynamics, as well as discriminatory legal frameworks and the resulting differences in access, use and control of natural resources and economic assets, physical mobility and migration, digital accessibility, decision-making power, and household or community expectations. For example, women and men experience different levels of exposure to physical hazards and have varying capacities to cope with risks. Thus, understanding these differentiated impacts is also vital to creating more equitable and inclusive solutions to address the challenges posed by climate change to peace and security.

The quality of governance and the efficacy of institutions moreover affect the capacity to respond to, adapt to and cope with climate risk, and have the potential to moderate insecurity and tensions arising through the different transmission channels. Indeed, institutions can serve as the “immune system” of a society.⁹ The 2022 Intergovernmental Panel on Climate Change (IPCC) report on Impacts, Adaptation and Vulnerability (AR6) finds that poor institutional planning and responses are key determinants of violence and conflict in the context of climate impacts, with inequitable responses exacerbating known drivers such as marginalization, exclusion and disenfranchisement of groups.¹⁰ Institutions perform a variety of functions that determine a community’s adaptive

and coping capacity, including providing leadership, policy implementation, service delivery, resource mobilization and dissemination, and information gathering and dissemination. Good governance and effective institutions are thus key to reducing fragility and vulnerability, particularly when utilizing an intersectional lens that accounts for gender, disability, age and refugee status, among other factors. Furthermore, recognizing differentiated experiences can help minimize risks across the climate, peace and security spectrum and identify opportunities for building and sustaining a more inclusive peace. Consequently, the IPCC report states that “environmental peacebuilding through natural resource sharing, conflict-sensitive adaptation and climate-resilient peacebuilding offer promising avenues for addressing conflict risk”.¹¹

Whether, and to what degree, climate impacts cause insecurity and affect the risk of conflict depends on different moderating, or exacerbating, factors related to fragility, such as the quality of governance, effectiveness and capacity of institutions, social cohesion and the prevalence of inequalities. These have the potential to mitigate tensions and insecurity arising through the different risk transmission channels, though they can also exacerbate them. States experiencing conflict are likely to be fragile and lacking in economic, social and institutional resources, thus exposing them to greater climate risks with limited possibilities to adapt. Ensuring inclusive participation from all of society in the implementation of policies and projects is also essential to ensure the intersectional concerns, needs or grievances of different groups are addressed and may facilitate reduced tensions.



2. Contextualizing climate, peace and security in the Arab region



● The Arab region is challenged by compound risks, with climate change vulnerability and fragility largely overlapping.



● Governance, inequality and security challenges are especially prevalent in countries in conflict, but to a lesser extent also in other countries in the region.



● Climate impacts are already increasingly affecting the region and are only expected to worsen in the coming years with certain areas particularly exposed to extreme temperatures, flood risk and droughts.



● The diversity of the Arab region means that countries differ significantly in how they experience the climate, peace and security nexus.

While all countries in the region are affected by climate change, they are affected in different ways and within differing contexts. Indeed, the implications of a climate hazard depend on local circumstances. In places where physical, social, institutional and economic infrastructures have a high level of adaptive and coping capacity, impacts may be less severe and cause less insecurity or risk than in places where this capacity is lacking. The Arab region is socioeconomically diverse and includes countries at various stages of economic development, and with different endowments of natural resources. In terms of security and political stability, some countries enjoy relative stability and are among those with the highest incomes in the world. Others are fragile, low-income and suffer from protracted conflict. At the same time, the region is increasingly exposed to more severe, frequent and intense climate hazards. Considering these compound challenges, investigating the different trends and projections that may fuel increased risk from the climate-conflict nexus is particularly relevant.

There is a significant overlap between countries that are considered fragile and countries that are particularly vulnerable to climate change and lacking readiness to improve resilience, as shown in figure 2. This also illustrates the interlinkages between the terms, as discussed in chapter 1.

Figure 2. Overview of particularly fragile and vulnerable countries in the Arab region

	Syrian Arab Republic	Iraq	Yemen	Sudan	Somalia	Djibouti	Mauritania	Comoros	State of Palestine	Libya	Lebanon	Egypt	Bahrain	Algeria	Jordan	Qatar	United Arab Emirates	Kuwait	Saudi Arabia	Oman	Tunisia	Morocco
Vulnerability																						
Low readiness																						
Fragility																						

Source: Authors based on World Bank (2022b), Organisation for Economic Co-operation and Development (OECD) (2022) and ND-GAIN.

Note: A country is marked as fragile if either the World Bank or OECD classifies it as fragile. A country is marked as particularly vulnerable if it is in the upper left or right quadrant of ND-GAIN's matrix (highest vulnerability), while it is marked as lacking readiness if it is in the bottom or top left quadrant. There is no data on vulnerability or readiness for the State of Palestine.

Fragile and conflict-affected countries are among the most vulnerable due to a low capacity to adapt to and cope with climate impacts and ability to moderate the potential for increased risk of conflict. Eleven countries are considered “fragile” either by the World Bank or the Organisation for Economic Co-operation and Development (OECD).¹² While definitions vary between the two organizations, they both include a focus on institutional and social challenges. According

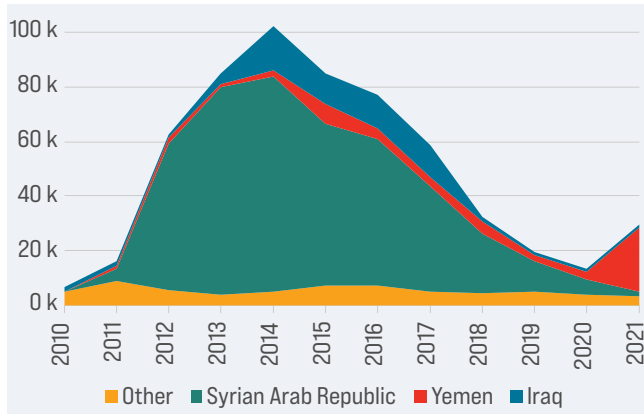
to the World Bank, “fragile” countries are those with the weakest institutional and policy environment, or that have other indications of instability and insecurity, while OECD also includes additional dimensions to determine fragility.¹³ The fact that half of all Arab countries are considered to be struggling with fragility according to at least one definition is indicative of the multitude of challenges facing the region, particularly related to governance, institutions and insecurity.

A. The presence of fragility, governance challenges, insecurity and conflict

Fragility, insecurity and governance challenges are prevalent within the Arab region. Countries in conflict are all particularly fragile and vulnerable to the impacts of climate change while lacking in readiness to improve resilience. These countries face the greatest challenges in addressing climate-related security risks. However, countries that are not presently classified as fragile may still struggle with governance challenges, inequality, availability of resources and capacity, which in turn could affect their vulnerability to climate impacts and fragility with time. As such, a more thorough examination of key differences and challenges related to fragility in the region is warranted.

1. Violence: a legacy of conflict and insecurity

The conflict landscape in the Arab region is dominated by intra-State conflicts, including those with transboundary dimensions.¹⁴ These conflicts are generally characterized as being fluid, protracted and complex. Around 30 per cent of people in the region live with conflict, making it the second-highest share in the world behind sub-Saharan Africa.¹⁵ In 2021, seven Arab countries were in conflict or experiencing fatal political violence, with several of the conflicts being protracted in nature.¹⁶ Nevertheless, battle deaths in the Arab region have decreased since their peak in 2014 and largely occur in

Figure 3. Number of fatalities in the Arab region

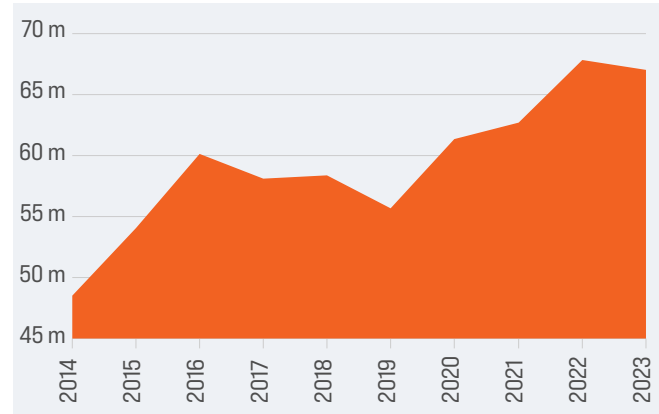
Source: Uppsala Conflict Data Program (UCDP), Georeferenced Event Dataset (GED).

Note: The total is the sum of all League of Arab States member States, excluding the State of Palestine. The “k” stands for thousand.

a small number of countries. The three deadliest conflicts in 2021, namely the ones in the Syrian Arab Republic, Somalia and Yemen, represented more than 80 per cent of all fatalities that year.¹⁷

Despite the decline in absolute fatalities since 2014, fragility and insecurity prevail in several Arab States. Beyond immediate deaths and injuries that damage social and productive infrastructure, conflict has diverted resources away from productive sectors, disrupted livelihoods, forced people to flee their homes and eroded essential infrastructure to support sustainable development. In the Syrian Arab Republic and Yemen, conflict has led to a vicious cycle of deteriorating governance, human rights and intensifying conflict.¹⁸ Large-scale conflict has moreover affected overall development in Iraq, Libya, the Sudan, the Syrian Arab Republic and Yemen.¹⁹

The number of people in need of humanitarian assistance and the number of forcibly displaced people due to conflict remain high (chapter 3 [D]). This indicates that the conditions for return are unfavourable, due to unresolved socioeconomic and political ramifications of conflict, as well as the threat of violence and persecution. In 2022, the Arab region hosted more than 9.4 million refugees and 20.4 million internally displaced people. Relief agencies play an important role in providing humanitarian aid to such vulnerable groups. As seen in figure 4, approximately 67 million people in the region are in need of humanitarian assistance. In 2023, the highest number of people in need of humanitarian aid are concentrated in

Figure 4. People in need of humanitarian aid in the Arab region

Source: Office for the Coordination of Humanitarian Affairs (OCHA).

Note: Countries included are Iraq, Lebanon, Libya, the State of Palestine, Somalia, the Sudan, the Syrian Arab Republic and Yemen. Regional Refugee Response Plans have not been included. The “m” stands for million.

Yemen (21.6 million), the Sudan (15.8 million), the Syrian Arab Republic (15.3 million) and Somalia (8.25 million), which are also among the countries that are most vulnerable to climate-related impacts.

Other forms of violence are also present within the region, including increased gender-based violence against women and girls, as well as against other marginalized groups. The United Nations Special Rapporteur on violence against women and girls, its causes and consequences, has noted that “climate change and biodiversity loss aggravate all types of gender-based violence against women and girls, which are exacerbated by discriminatory legal systems and governance structures and unequal power distribution, resulting in limited avenues of participation, public services and infrastructure”.²⁰ When adding conflict to the equation, the risk of experiencing gender-based violence or conflict-related sexual violence increases exponentially. The World Health Organization (WHO) estimates that 31 per cent of women in the Eastern Mediterranean region, which includes the Arab region, have experienced some form of intimate partner violence at least once in their lifetime.²¹ Instances of child marriage in the region have decreased significantly in recent decades; however, rates in areas experiencing increased conflict, displacement and insecurity have seen an upturn with 1 in 5 girls in the Arab region having been married under the age of 18.²² Female genital mutilation is prevalent in several Arab States, namely Djibouti, Egypt, Somalia, the Sudan and Yemen.²³

2. Governance challenges

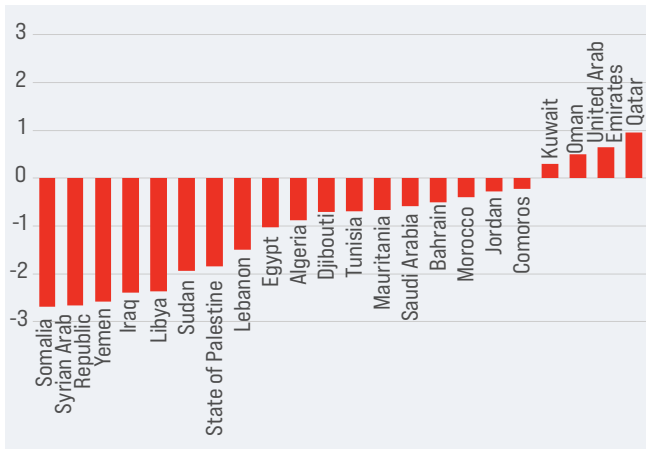
Perceptions of the risk of political instability and politically motivated violence remain relatively negative in most of the Arab region, as seen in figure 5, and unsurprisingly, particularly in countries suffering from conflict. Institutions and governance have, among others, been weakened due to protracted conflict and may be characterized by corruption, weak rule of law and limited capacity, challenging their ability to facilitate adaptation, alleviate insecurity and grievances faced by the population due to climate impacts and reduce the risk of violence. Indeed, conflict affects all aspects of society, including institutions, which can be weakened as government resources are diverted towards military and conflict-related spending.

There are significant governance challenges within the region.²⁴ This is also reflected in perceptions about different aspects of governance. Government effectiveness (figure 6), regulatory quality (figure 8) and rule of law (figure 7) are all seen as relatively negative in most Arab countries compared to other countries in the world, indicating challenges in ensuring good governance and efficient institutions. Perceptions are particularly negative in Libya, Somalia, the Syrian Arab Republic and Yemen, all of which are suffering from conflict. Other countries in conflict also score especially low on the different governance indicators, in addition to the Comoros, while only

Gulf Cooperation Council (GCC) countries and Jordan perform slightly better than the global average.

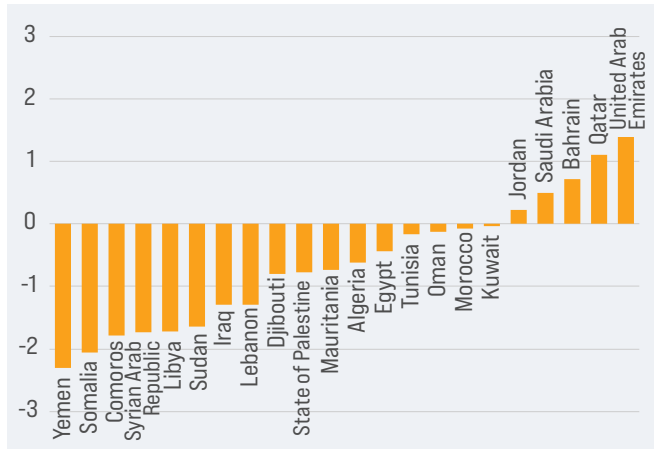
Voice, accountability and inclusive participation in policy processes, programming and decision-making are all important in promoting policies that are fair, effective, sustainable and that address the needs of all people. Consequently, representation of different genders and traditionally marginalized groups, such as persons with disabilities, in policymaking processes is important. Insufficient progress on structural governance issues such as legal discrimination, unfair social norms and attitudes and low levels of political participation are at the root of gender inequality and undermine the ability to advance towards more prosperous societies. Women’s political participation is particularly low in the Arab region, where they hold only 18.3 per cent of seats in parliament. This is the second lowest among world regions.²⁵ Similarly, persons with disabilities are largely excluded from decision-making processes and have little to no representation in parliament or political bodies in the Arab region. Ensuring that people have the opportunity and ability to voice their opinions and hold policymakers to account is another aspect where the region performs particularly weakly. Perceptions of voice and accountability are relatively negative in most countries in the Arab region compared to the global average (figure 10); negative perceptions are present throughout the region and not limited to countries in conflict.

Figure 5. Relative perceptions of political stability and absence of politically motivated violence, 2021



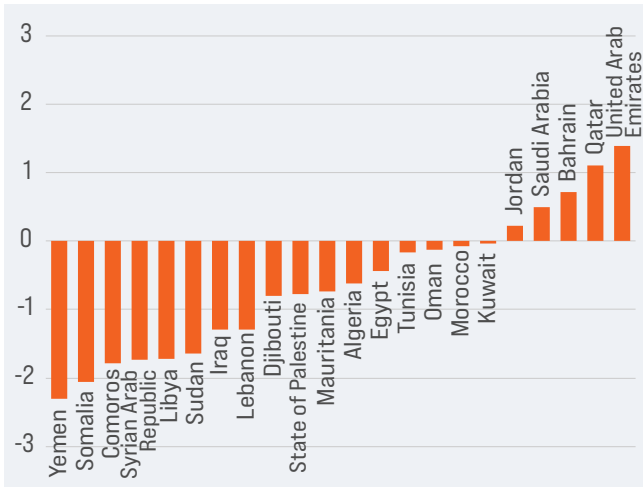
Source: World Bank’s Worldwide Governance Indicators (WGI).
Note: The countries’ scores are provided in units of a standard normal distribution. Estimates range from approximately -2.50 (weak) to 2.50 (strong), with 0 representing the global mean. The whiskers represent the standard error.

Figure 6. Relative perceptions of government effectiveness, 2021



Source: World Bank’s WGI.
Note: The countries’ scores are provided in units of a standard normal distribution. Estimates range from approximately -2.50 (weak) to 2.50 (strong), with 0 representing the global mean. The whiskers represent the standard error.

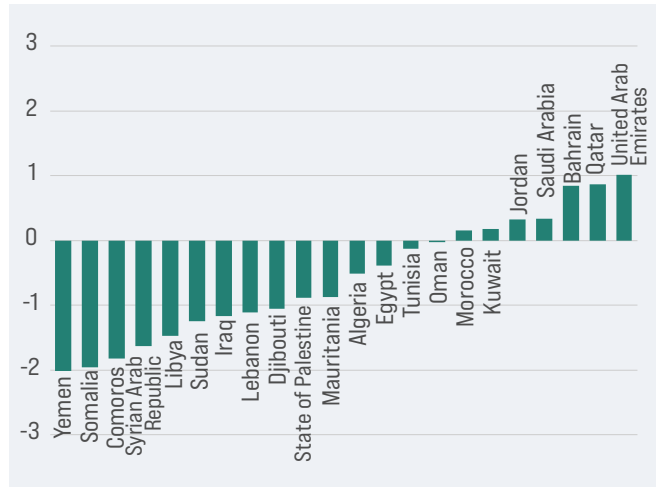
Figure 7. Relative perceptions of the rule of law, 2021



Source: World Bank's WGI.

Note: The countries' scores are provided in units of a standard normal distribution. Estimates range from approximately -2.50 (weak) to 2.50 (strong), with 0 representing the global mean. The whiskers represent the standard error.

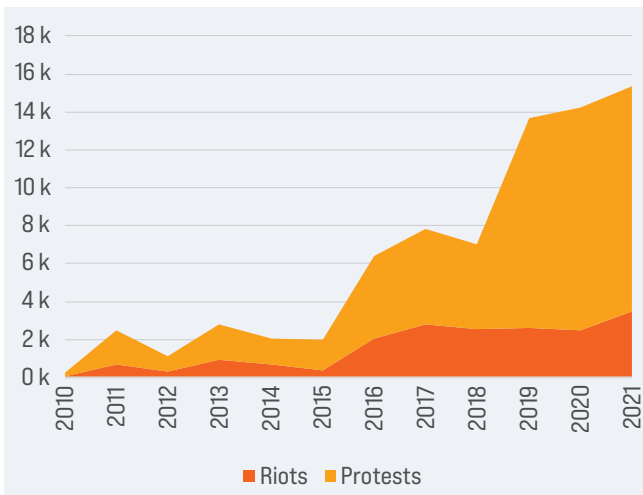
Figure 8. Relative perceptions of regulatory quality, 2021



Source: World Bank's WGI.

Note: The countries' scores are provided in units of a standard normal distribution. Estimates range from approximately -2.50 (weak) to 2.50 (strong), with 0 representing the global mean. The whiskers represent the standard error.

Figure 9. Number of demonstrations in the Arab region

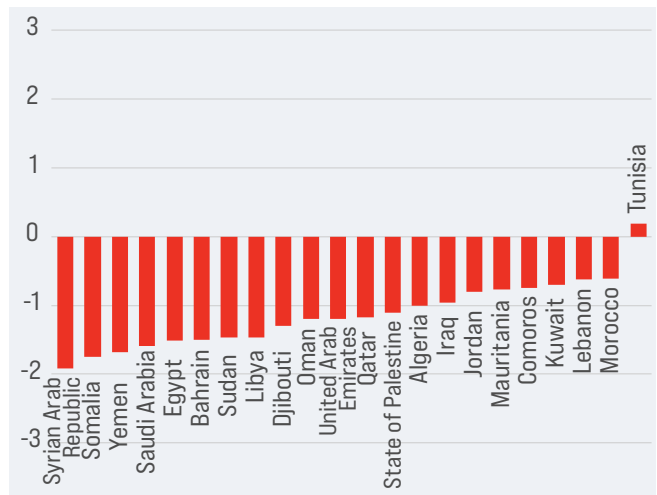


Source: Armed Conflict Location & Event Data Project (ACLED).

Note: The aggregate represents the total for all 22 Arab countries. Protests refer to non-violent demonstrations while riots refer to violent demonstrations.

The start of 2011 brought to the fore the weaknesses of the region's governance arrangements in the face of political and economic challenges. Protests have become more frequent within the Arab region in recent years, as shown in figure 9, indicating growing expressions of discontent. The 2019 surge was largely driven by an eruption of large-scale protests in

Figure 10. Relative perceptions of voice and accountability, 2021



Source: World Bank's WGI.

Note: The countries' scores are provided in units of a standard normal distribution. Estimates range from approximately -2.50 (weak) to 2.50 (strong), with 0 representing the global mean. The whiskers represent the standard error.

Lebanon, Algeria, Tunisia and the Sudan. Mass protests in fragile contexts are expressions of and further contribute to political instability and have the potential to affect national and local institutional capacity²⁶ and possibly even escalate to violence, especially when Governments use force against protesters.

3. Inequalities between and within countries

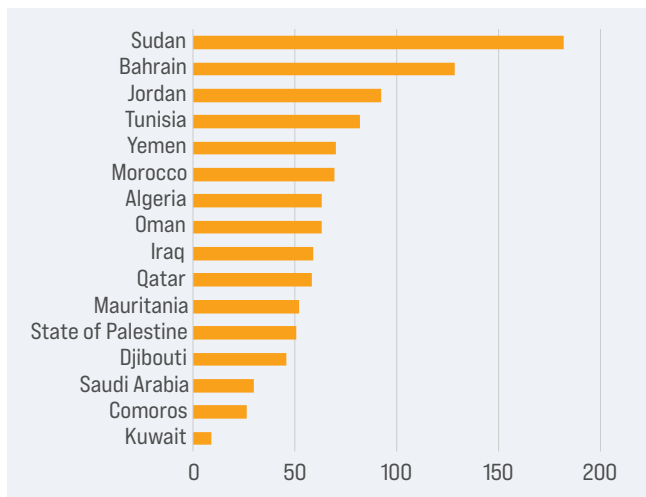
The Arab region is one of wide disparity in terms of income and resources, both within and between countries. Indeed, it is the region that is the most unequal globally in terms of income distribution, with the richest 1 per cent holding 24 per cent of total income and the poorest half only 9 per cent.²⁷ It also has the second-widest gender gap in the world after South Asia, as measured by the gender inequality index (GII), with women lagging behind particularly in work participation and income. At below 20 per cent, the Arab region has the lowest female labour force participation globally. Gender, location and disability have a great impact on inequality and access to education and employment. Women with disabilities face double discrimination, while women with disabilities in rural areas always have the lowest rates of literacy, educational attainment and school attendance.²⁸

The wide gaps in income between countries are illustrated in figure 12. While the oil-producing Gulf States are high-income, Djibouti, the Comoros, Mauritania, Somalia, the Sudan and Yemen are considered least developed countries (LDCs). Illustrating this, the gross domestic product (GDP) per capita of Qatar, which is the highest in the region, is almost 150 times higher than that in Somalia. Such stark differences in income provide indications about the different economic capacity and resources available. Nine Arab countries are considered lower-middle income and

may thus also face challenges in mobilizing sufficient financial and other resources. There are also wide regional differences when it comes to public debt, with the central government debt of Kuwait accounting for less than 9 per cent of GDP, while in the Sudan it amounts to almost 182 per cent of GDP.²⁹ Nevertheless, the ability to manage the debt influences whether it negatively affects public resources and capacity.

National income and public spending are moreover significantly affected by the presence of armed conflict. For example, the GDP of the Syrian Arab Republic shrank by more than half from 2010 to 2018, and the country was reclassified as low-income.³⁰ Similarly, it is estimated that the economy of Yemen in 2021 would have been twice as large in the absence of conflict.³¹ While poverty rates have increased overall in the Arab region, from 6.9 per cent in 2010 to 12.4 per cent in 2019, this has been most dramatic in conflict-affected countries.³² Indeed, in 2021, 15.6 million people in Yemen were estimated as living in extreme poverty (less than \$1.90 a day) due to the conflict.³³ In the Syrian Arab Republic, the number of people living in extreme poverty rose to around 40 per cent of the population in 2019 compared to less than 1 per cent in 2010.³⁴ Even larger shares live in poverty in the two countries. This is also coupled with diversion of public funds from social expenditure to military and security expenditure, weakening public investment in social spending that could help lift people out of poverty and increase their resilience. Overall, the Arab region spends more on military and security and less on health than any other region.³⁵

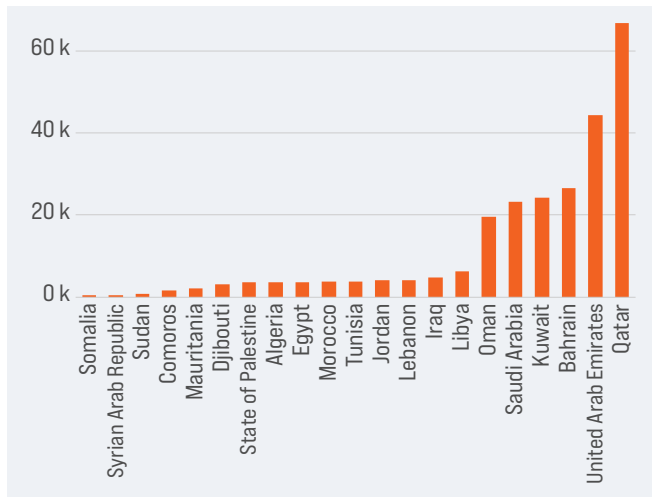
Figure 11. Central government debt (Percentage of GDP)



Source: International Monetary Fund (IMF).

Note: All values are for 2021. No data for Egypt, Lebanon, Libya and the Syrian Arab Republic.

Figure 12. GDP per capita (Current dollars)



Source: World Bank's WDI.

Note: All values are for 2021, except for Kuwait and the Syrian Arab Republic, which reflect 2020 statistics.

B. Climate change and vulnerability

While there are significant environmental and climatic differences within the region, most Arab States are generally affected by challenging climatic conditions, such as high temperatures, scarce groundwater and changing precipitation patterns, which are likely to be made worse by climate change. Many countries in the region also share common challenges in terms of vulnerability.

Extreme temperatures, floods and droughts are the climate hazards that tend to impact the most people in the region.³⁶ Thus, a deep dive into the trends and projected risks of these hazards is provided below. Particular emphasis is placed on how these climatic events manifest in conflict-affected countries in the region. This section concludes with a discussion on current efforts to address climate change challenges through adaptation, highlighting the need for future action, particularly with respect to climate finance for adaptation.

1. Rising temperatures: a harbinger of natural disasters

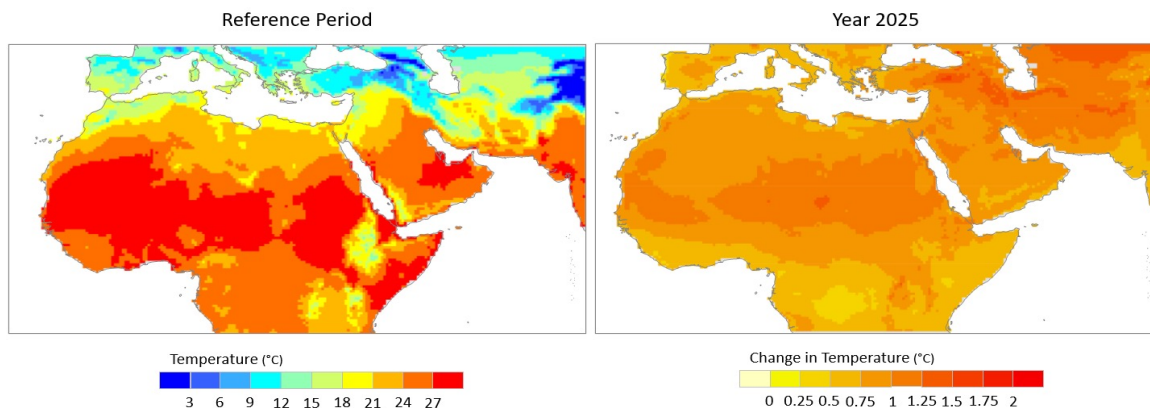
According to projections by the Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR), average temperatures in the region may increase 0.5°C to 0.75°C between 2016 and 2035, with a midpoint in 2025, compared to the

reference period (1986–2005). Some areas within the Sudan, Iraq and the Syrian Arab Republic may see temperature increases as high as 1°C to 1.25°C (figure 13).

Rising average surface temperatures increase the probability of extreme weather events such as droughts, wildfires, heat waves and strong storm systems. Indeed, extreme weather events have already become more common and destructive, and are expected to continue to increase in frequency, duration and intensity as a result of global warming.³⁷ When there is high exposure and vulnerability to such extreme weather events, they can have particularly severe impacts and contribute to humanitarian disasters. Indeed, the last 10 years have recorded the highest number of people affected by natural disasters in the region (figure 14). This may also be partly due to demographic changes in the form of population growth and rapid urbanization, which may imply that more people and assets are in disaster-prone areas, as well as improvements in disaster reporting mechanisms.

During the past decade, the highest share of people impacted by natural disasters were concentrated in Iraq, Somalia and the Sudan, all of which struggle with weakened institutions and significant numbers of forcibly displaced and humanitarian aid-dependent people due to protracted conflict. These fragile countries are facing the dual challenges of conflict and climate change, thus reducing their ability to respond or adapt to such climate hazards.

Figure 13. Mean temperature change for 2025 (Midpoint for 2016–2035 projection)

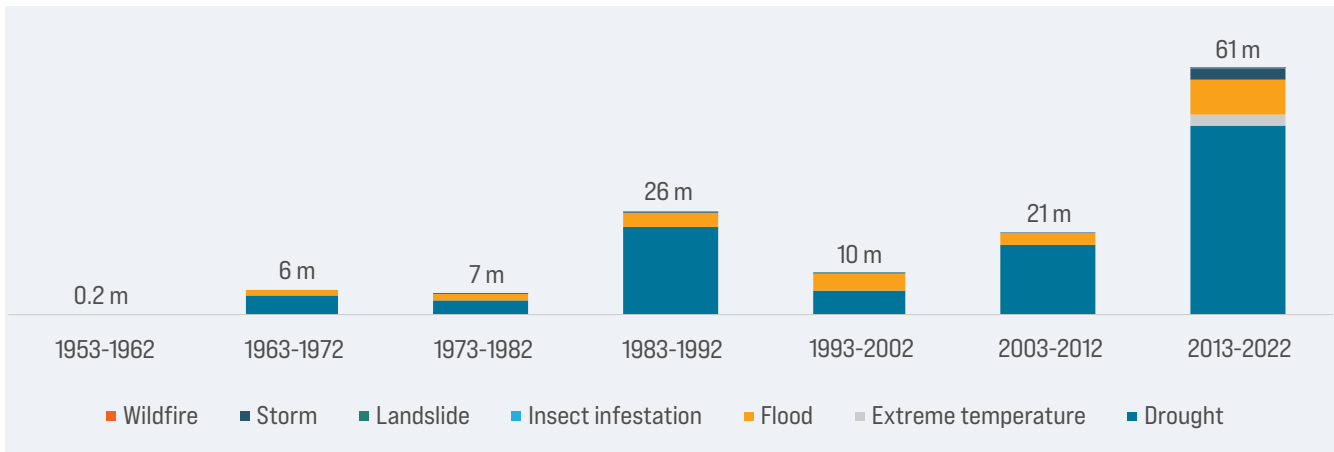


Source: Authors based on Economic and Social Commission for Western Asia (ESCWA) and others, 2017.

Note: Mean temperature change for 2016–2035 based on ensemble of three representative concentration pathway (RCP) 8.5 projections compared to the reference period (1986–2005) in the Arab Domain, 50 km resolution.

RCPs are modelled scenarios that consider different levels of greenhouse gas emissions. RCP 8.5 refers to a high emissions scenario, which is considered the upper boundary of the projection range for policymakers.

Figure 14. Number of people affected by natural disasters in the Arab region (Millions)



Source: EM-DAT.

Note: Geological natural disasters and epidemics have been excluded. For an event to be included in the data set, at least one of the following criteria needs to be met: (a) 10 or more people reported killed; (b) 100 or more people reported affected; (c) declaration of a state of emergency; (d) call for international assistance. The total is the sum of all League of Arab States member States.

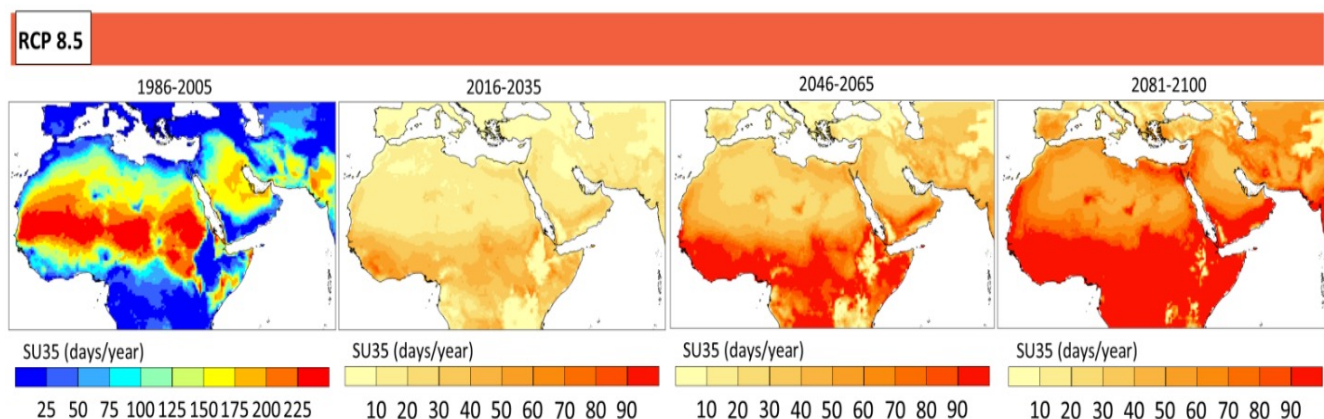
2. Extreme temperatures: fatal heat waves

The number of summer days (SU35) in which temperatures exceed 35°C has historically been high in certain areas of the Arab region (the Sahara, the Sahel and the Arabian Peninsula) – ranging from 175 to more than 225 days annually during a reference period of 1986–2005 (figure 15). The Mediterranean coast exhibits a more moderate frequency of summer days of approximately 25 days annually.

Looking towards the mid- and end-term, strong increases in the annual number of summer days of up to 90 days are

projected, particularly along the Mediterranean coast, the Sahara and the southern Arabian Peninsula. Such an increase in extreme temperatures will have a ripple effect across the transmission channels identified in the framework, impacting outdoor work such as construction and agriculture – and, in turn, food security and livelihoods. It may also induce outmigration from areas where liveability is severely impacted by high temperatures.

Figure 15. Mean change in the number of summer days (Days/year)



Source: Authors based on ESCWA and others, 2017.

Note: These projections are based on an ensemble of three RCP 8.5 (high emissions scenario) projections as compared to the reference period (1986–2005).

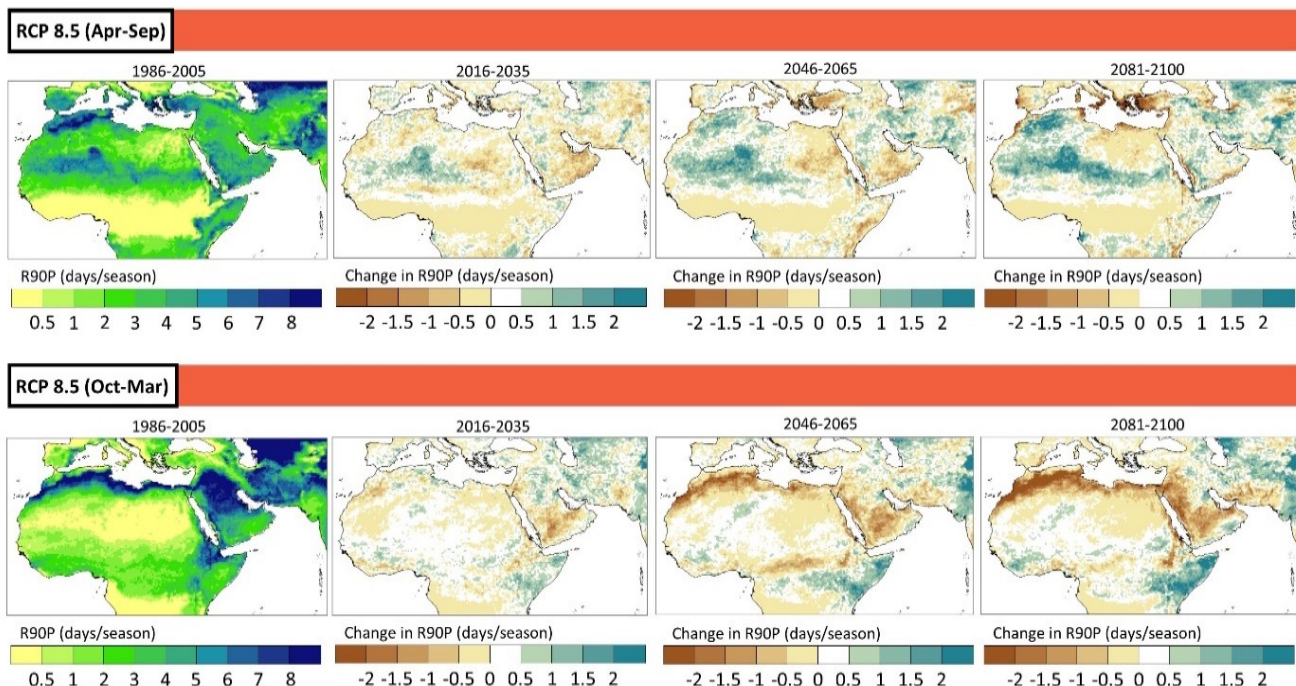
3. Floods: a primary source of displacement

Floods have historically been the hazard that causes the most displacement in the Arab region.³⁸ In 2021, according to EM-DAT, 13 different flood disaster events occurred within the Arab region, with over 1 million people impacted.³⁹ Flood risks, including flash floods, vary significantly between countries. Egypt is one of the countries with the highest exposure to flood risk globally, both in terms of total number of people and share of population exposed. This is due to a significant portion of the population living in the Nile river basin and Delta area, which is particularly exposed to sea-level rise and flooding. Several countries in the region that suffer from protracted violence also have a large share of the population exposed to high flood risk, particularly Iraq (36.8 per cent), as well as the Sudan (20.6 per cent), Somalia (16.6 per cent) and the Syrian Arab Republic (13.4 per cent), often leading to continuous displacement among populations that may have already suffered internal displacement due to conflict.⁴⁰ Flooding in the Sudan has been particularly severe in the last several years. As of September 2022, 349,000 people across

the country have been affected by floods, with at least 24,800 homes destroyed and 48,200 damaged in 16 out of 18 States.⁴¹

Looking to the future, RICCAR data projects areas where increased precipitation could lead to flooding. In comparison to a reference period of 1986–2005, by mid-term the number of days where daily precipitation will exceed the 90th percentile for precipitation will in particular increase in areas of Somalia during the dry season (April to September) in a high emissions scenario (figure 16). While at the time of writing this report Somalia was confronting a multi-year drought, it is important to note that floods can happen (and can be particularly catastrophic) during drought conditions due to the inability of the dry earth to absorb precipitation and thus high levels of runoff. Somalia and other countries in conflict and post-conflict settings face a particularly concerning flood risk given the compound challenges of conflict and low adaptive capacity. Prior RICCAR studies show that urban centres like Mogadishu and Nouakchott are prone to flood impacts.⁴² Even higher income cities, such as Jeddah in Saudi Arabia, are impacted by flash floods, as extreme precipitation overloads drainage networks.⁴³

Figure 16. Seasonal change in annual number of days when daily precipitation exceeds the 90th percentile precipitation (R90P)



Source: Authors based on ESCWA and others, 2017.

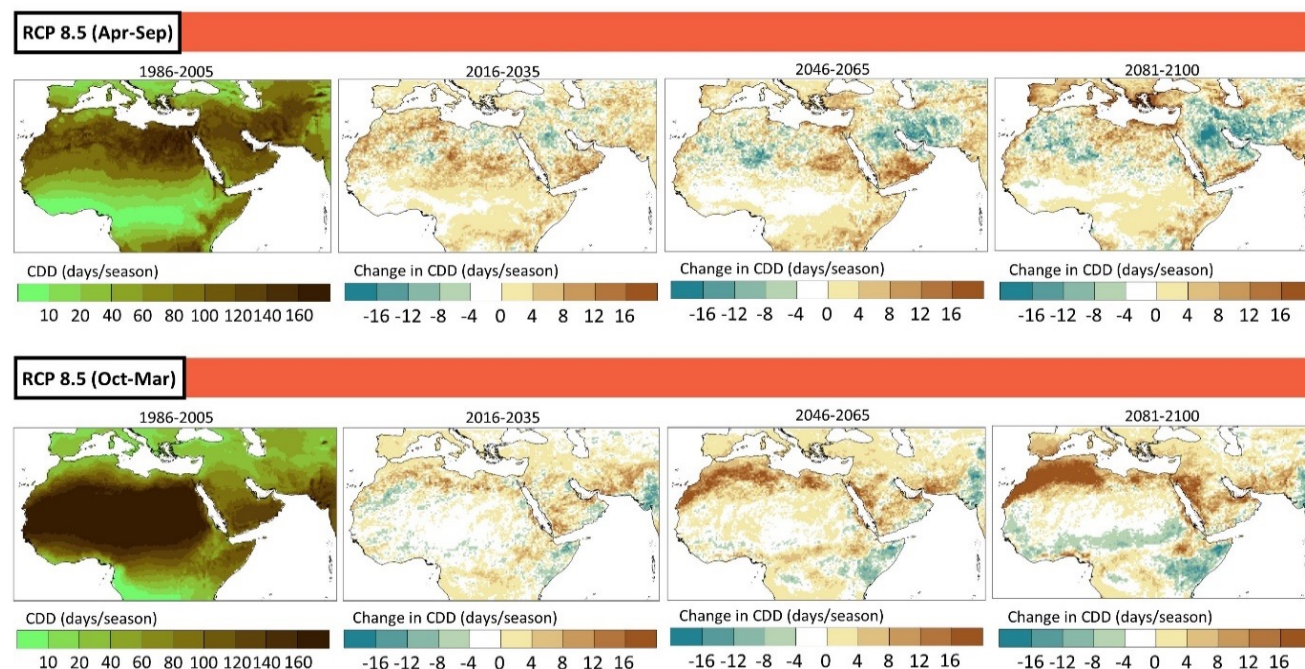
Note: These projections are based on an ensemble of three RCP 8.5 (high emissions scenario) projections as compared to the reference period (1986–2005).

4. Droughts: affecting the largest portion of the population

In 2021 alone, three droughts in Iraq, Somalia and the Syrian Arab Republic affected 16.6 million people in the region and were the driver behind the record number of people impacted by natural disasters that year.⁴⁴ Through their ability to affect agricultural output and food supply, droughts have the potential to impact particularly large numbers of people and settlements.

According to RICCAR projections, droughts are likely to worsen through the mid-term. Figure 17 indicates that the mean change in the maximum length of dry spells will increase by 3 to 12 days across the region during the dry season (April to September). In Iraq, the Syrian Arab Republic and the Arabian Peninsula, there will be increases in the length of dry spells in both the rainy and dry seasons. This will impact access to drinking water, irrigation and, in turn, growing seasons and livelihoods across the region.

Figure 17. Mean change in the maximum length of dry spells (CDD) (Days/year)



Source: Authors based on ESCWA and others, 2017.

Note: Ensemble for six RCP 8.5 scenarios (high emissions scenario).

5. State of adaptation policy and finance

Increasing adaptive capacity is key to reducing the impact of climate change outlined herein, by moderating its adverse impact, capitalizing on new opportunities that result due to climate change, or both.⁴⁵ Implementation of adaptive actions can thus reduce adverse impacts from exposure to climate hazards and, as such, reduce the transmission of climate risk to conflict risk through the related transmission channels. For example, investment in adaptation may create

job opportunities in adaptation-related infrastructure projects, which may have a positive impact on livelihoods in addition to improving adaptation and thus moderating the impacts of climate hazards.⁴⁶

Several countries in the region have some type of adaptation policy, plan, strategy or law either in place or in progress.⁴⁷ Nevertheless, only three countries in the region have submitted their national adaptation plan (NAP) to the United Nations Framework Convention on Climate Change (UNFCCC), specifically Kuwait, the State of Palestine and the Sudan.⁴⁸ Disaster risk reduction capacities in the region are generally

weak, with a lack of warning or best practices communicated to rural communities, and limited hydro-meteorological equipment and weather stations.⁴⁹ Improved early warning systems for extreme weather events could play a pivotal role in increasing adaptive capacity in the region if coupled with response mechanisms with adequate capacity.

Adaptive capacity and vulnerability to climate change are importantly affected by economic, social and institutional resources.⁵⁰ Adaptive capacity depends on income level, access to technological advances, education and infrastructure, and thus tends to be much higher in wealthier countries than in low-income countries.⁵¹ As such, adaptive capacities are closely linked to and enabled by good governance and socioeconomic factors, as discussed in chapter 2 (A).

How to finance such adaptation policies remains a challenge, especially for the lower- and middle-income countries in the region that do not have sufficient resources available to invest and implement, and often are affected by the dual challenges of conflict and climate risk. These nations may struggle to find or attract the funding needed to implement adaptation and other policies. In this regard, international finance and other forms of assistance are key. However, globally, conflict-affected countries receive only one third of the amounts of adaptation finance per capita, adjusted for purchasing power, as non-conflict affected countries.⁵²

While funding for adaptation in the region has increased in recent years, flows remain significantly below the funding targeting mitigation activities and the estimated amounts needed for adaptation.⁵³ Indeed, while 2020 saw both the

highest amount and share of public international adaptation finance to the region, with slightly below \$1.8 billion or 42 per cent of overall climate-finance going towards adaptation, it nevertheless remains below parity with mitigation finance. The almost \$9.3 billion in adaptation finance received over the last decade is also significantly below the over \$140 billion of costed needs of 11 countries in the region. Importantly, these funding flows mainly go to only a few countries. Four countries – Morocco, Jordan, Egypt and Tunisia – have received most of the adaptation finance in the region (67 per cent of adaptation finance flows over the last decade).⁵⁴

It is important to note that only 11 States in the Arab region have costed their climate finance needs. In this regard, there is a clear need for capacity development and technical assistance to the LDCs in the region in order to define their needs and to create salient projects that are eligible for international funding. This is particularly true for LDCs that are confronting the compound challenges of conflict, climate change and weak State capacity. In these cases, innovative approaches to financing that go beyond lending to national governments need to be explored.

Further, the type of financing instrument matters. Most adaptation financing to the region is in the form of debt instruments, the majority of which are non-concessional loans. This is a challenge when many States already have very limited fiscal space to contract additional debt. Funding from the Green Climate Fund (GCF) to the Arab region is insignificant, totalling \$90 million annually from 2016–2020. The GCF funds less than two national projects annually in the Arab region, on average.⁵⁵



3. Manifestations of climate-related security risks



Climate change is affecting the peace and security landscape. Its far-reaching effects can contribute to known drivers of conflict and insecurity such as loss of income and livelihoods, food insecurity, competition over resources, or migration, among others.



Within the Arab region, there is already evidence of climate change affecting insecurity and contributing to tensions, such as through the destruction of crops and reduction of arable land, thereby affecting livelihoods, incomes, food security and competition.



At the same time, conflict can also affect these drivers and increase vulnerability to climate impacts, potentially leading to a vicious cycle of vulnerability and insecurity.



Conflicts within the region are also affecting vulnerability to climate impacts, for example through driving the displacement of people.

Climate impacts have the potential to have significant effects on known drivers of insecurity and conflict, such as loss of livelihoods and income, food security, migration and resource competition. Given the heterogeneity of the Arab region in terms of income levels, the role of the agricultural sector, social cohesion and State fragility, such impacts are likely to materialize in different ways, depending on the context. Notably intersecting dimensions such as gender, age and other dynamics also determine how impacts are distributed. This section explores in a non-extensive manner some of the ways in which climate change is expected to exacerbate these drivers of insecurity.

Box 1. Overpopulation, droughts and desertification as drivers of conflict in Darfur

The conflict in Darfur represents a case where linkages to climate change have been debated extensively in academic and policy discussions.^a The common argument is that the combination of changes in precipitation, overpopulation and overgrazing caused desertification, which in turn increased conflict risk through increased resource competition. However, studies using satellite data show that from the mid-1980s to the escalation of the Darfur conflict in 2003, precipitation and vegetation cover increased.^b

While this has led some analysts to reject the role of climate hazards in the Darfur conflict,^c there are several arguments that point to climate change impacts as exacerbating factors. First, the lowest point of the precipitation trend in the mid-1980s contributed to the famine, fighting and cattle raiding that featured in the tribal conflicts in Darfur and that could be exploited by political entrepreneurs later.^d Second, the motivation of combatants might be influenced by increased resource stress and decreased resource availability.^e Finally, long-term environmental change might have triggered a market collapse, which reduced the synergies of coexistence between farmers and pastoralists.^f

The case of Darfur supports the idea that adverse environmental shocks can systematically affect the dynamics of conflict. However, the relative importance of socioeconomic and political factors is still the dominant element in the outbreaks of conflicts. For example, governance solutions can be put in place to address droughts or other climate impacts that affect food and water resources, but in their absence, tensions may escalate.

^a Mandami, 2007; De Juan, 2015.

^b Gray and Kevane, 2008; Brown, 2010.

^c Selby and Hoffmann, 2014.

^d Bromwich, 2018.

^e De Juan, 2015.

^f Olsson, 2016.

A. Loss of income and livelihoods

1. How can livelihoods be affected by climate change?

Climate change can affect livelihood and income loss in various ways. Agriculture is particularly vulnerable, as changes in temperature and precipitation patterns can lead to reduced crop yields and a decline in agricultural productivity, or even a loss of biodiversity and specific species. Additionally, extreme weather events such as floods, droughts and storms can damage crops, livestock and infrastructure, leading to sudden and significant economic losses. This can be particularly devastating for small-scale and subsistence farmers and those living in poverty who lack the resources to recover from these shocks.

Beyond the agricultural sector, climate change impacts can disrupt value chains and damage essential infrastructure, leading to reduced economic activity, financial losses and unemployment. For example, rising sea levels and coastal flooding can damage ports, transportation networks and other critical infrastructure, disrupting trade and economic activity. The increase in frequency and severity of extreme heat events associated with climate change also threatens productivity in sectors such as tourism or construction. Climate change can also affect social and environmental determinants of health (e.g., air quality or safe drinking water) that impact people's well-being and overall ability to support themselves and their families.

A further, more indirect impact of climate change on livelihoods in the region is how the global transition to renewable energy and reducing emissions may influence fossil fuel markets. Declining revenue in oil-producing countries such as Algeria, Iraq or the GCC countries could, especially in the absence of economic diversification, reduce their ability to uphold social contracts and maintain intraregional financial aid to low- and middle-income countries, thus challenging the provision of social protection schemes in the form of food, fuel and other subsidies that contribute to household income.

2. How does this relate to peace and security?

Livelihood loss and falling incomes can be a significant source of insecurity, especially in contexts where there are no or insufficient social protection schemes. With reductions or loss of income, food security might also be threatened. In addition, this can reduce the opportunity costs of violent behaviour, including participating in collective violence.⁵⁶ Worsening socioeconomic situations can also increase frustration with political structures and thereby the inclination to support revolts and regime change.⁵⁷ In conflict-affected areas, livelihood loss due to climate change may be compounded by

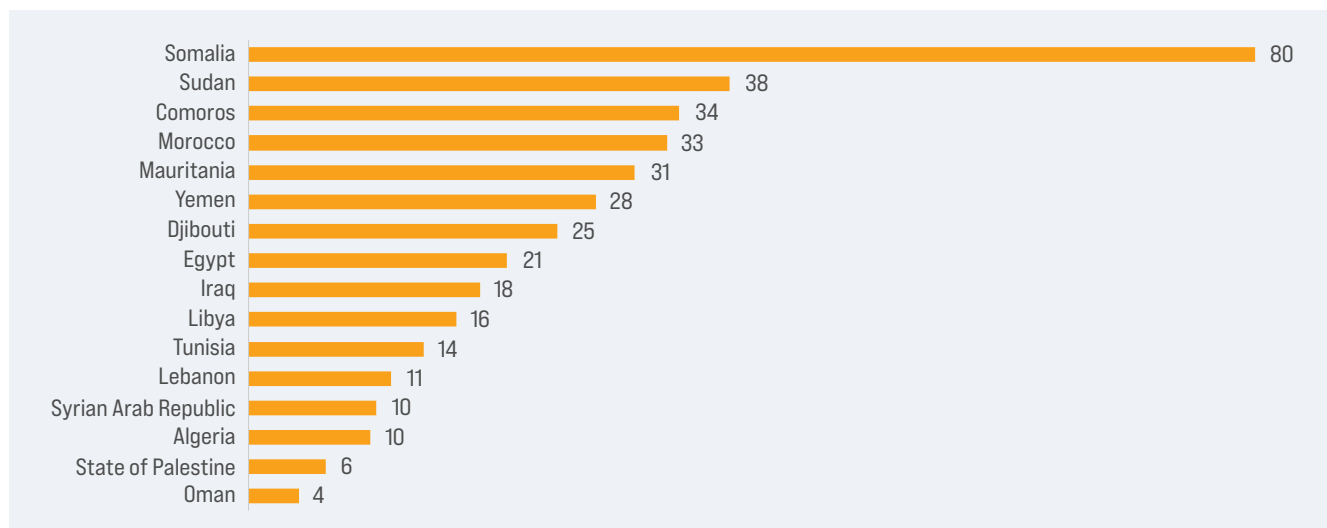
disruptions to infrastructure and markets, displacement and increased insecurity.

Disruption of livelihoods can also have a serious gendered impact. When male livelihoods are compromised or eliminated by environmental deterioration or conflict, this creates greater insecurity in the home and “may detrimentally affect their identities and social relations and, in some cases, may contribute to domestic violence against their partners”.⁵⁸ When women’s livelihoods are impacted by environmental degradation or conflict, they may use positive and negative coping strategies. A negative coping strategy may entail altering their consumption of food or eating less nutritious food to prioritize children or working males. Positive coping strategies may include relying more heavily on social networks, bartering or relying on indigenous or local knowledge to produce limited amounts of food.⁵⁹

3. How does it manifest in the Arab region?

Given the direct impact of extreme climate and weather events on agricultural activities and outcomes, the effects of climate change on livelihoods, through the destruction of yields and damages on permanent crops, are amplified in countries where agriculture is an important economic sector and source of livelihoods.

Figure 18. Employment in agriculture, 2019 (Percentage of total employment) (Modelled ILO estimate)



Source: World Bank WDI.

Note: Countries <3 per cent have been excluded (Bahrain, Qatar, United Arab Emirates, Kuwait, Saudi Arabia, Jordan).

The share of employment in agriculture varies significantly across the region, as shown in figure 18, with the sector accounting for over a fifth of total employment in several countries (Somalia, the Sudan, the Comoros, Morocco, Mauritania, Yemen, Djibouti and Egypt) and below 5 per cent in others, mainly the GCC countries. Somalia stands out with over 80 per cent of the workforce employed in agriculture. However, this also varies between rural and urban populations and has an important gender dimension. In four Arab countries, notably Somalia, the Sudan, Morocco and Yemen, agriculture is an especially important source of female employment, with the sector responsible for over 40 per cent of female employment.⁶⁰ Moreover, in Yemen, 73 per cent of the rural population relies on agriculture for their livelihoods and 87 per cent of rural women engage in agricultural production and/or livestock keeping activities.⁶¹ Similarly, in Iraq the agricultural sector is an important source of employment for women, accounting for 30 per cent of female employment nationally and 40 per cent in rural areas.⁶² Notable areas of cropland in Algeria, Iraq, Morocco, the Syrian Arab Republic, the Sudan or Tunisia are rainfed and thus particularly exposed to climate impacts like decreased or more sporadic rainfall.⁶³

Climate change impacts also make locust plagues more likely.⁶⁴ The worst locust outbreak in almost a quarter of a century took place in Somalia in 2019–2020, leading to a loss of a fifth of all crop yields at a national level.⁶⁵ Prolonged drought in the Syrian Arab Republic from 2006 to 2010 led to 800,000 people seeing their livelihoods affected.⁶⁶ In Iraq, during the 2020–2021 cropping season, a survey by the Norwegian Refugee Council found that 37 per cent of wheat farmers and 30 per cent of barley farmers had suffered crop failures of at least 90 per cent of their anticipated harvests. This has resulted in a significant decrease in incomes and a lack of employment opportunities for daily labourers.⁶⁷

Going forward, addressing climate security challenges with respect to livelihoods in the Arab region will entail mitigating climate impacts on the agriculture sector, diversifying employment, as well as developing a better understanding of how livelihood loss can translate into security risks through channels such as increased recruitment opportunities for armed groups and conflict over scarce resources. Therefore, policy options should be cultivated to interrupt the transmission of climate to security risks.

Box 2. Climate change, livelihood loss and piracy in Somalia and East Africa

In the case of Somalia, there is evidence that the impact of climate change on livelihoods has generated security concerns, such as increased risk of livestock raiding and recruitment to armed groups, such as Al-Shabaab.^a In addition, prior research has hypothesized that droughts impacting livelihoods in the agriculture sector resulted in more young men turning to piracy.^b

A 2023 study comparing incidents of piracy in the South China Sea with incidents of piracy in East Africa found that an increase in sea surface water temperatures lowered fish production in East Africa, which, in turn, increased the risk of fishermen turning to piracy. Further, decreases in fish production were correlated with a greater number of successful piracy attacks in East Africa. Conversely, in the South China Sea, where higher sea surface temperatures are associated with increased fish production, there has been a decrease in piracy and fewer successful piracy attacks.^c The researchers note that in Southeast Asia, the pirates engage in this criminal behaviour on a part-time basis, keeping fishing nets on their boats to fish when there are no potential piracy victims in sight.^d

The connection between climate change, livelihoods and security risk is a burgeoning field of research that requires more in-depth study and empirical analysis given the complexities at hand. For example, some prior studies have also shown that food insecurity resulting from droughts reduces the risk of piracy, as there is a limitation on resources to be able to carry out attacks.^e More work must be done to understand the impact of climate change on livelihoods and the varying potential domino effects with respect to security risks.

^a NUPI and SIPRI, 2022a.

^b Climate Diplomacy, n.d.

^c Jiang and LaFree, 2023.

^d Tangalakis-Lippert, 2023.

^e Shortland, 2010.

B. Resource competition

1. How can resource competition be affected by climate change?

Climate change can increase competition over resources by exacerbating pressures in areas with scarcity of natural resources, such as water or arable land. In addition to natural resource competition, climate change can also lead to increased competition for economic opportunities, particularly in sectors that are sensitive to environmental conditions, such as agriculture, fisheries and tourism. In the Arab region, climate change can exacerbate existing water stress and intensify competition between communities, agricultural sectors and industries. As a result, conflicts can arise over access to water resources, leading to tensions and instability. Conflicts over renewable resources made scarcer by climate change have a greater potential for escalation if the situation coincides with larger fault lines in society or if the institutions regulating ownership, access and dispute settlement are politicized.⁶⁸ Even in areas with limited State presence, there is little evidence of conflicts that are triggered solely by resource scarcity.⁶⁹

2. How does this relate to peace and security?

Competition over natural resources can arise within regions experiencing acute scarcity or when climate-affected individuals seek relocation, potentially resulting in conflicts with host communities.⁷⁰ Conflicts stemming from the scarcity of renewable resources, intensified by climate risks, carry a higher risk of escalation when politicized or coinciding with existing societal fault lines.⁷¹ The politicization of institutions governing resource ownership, access and dispute settlement can further contribute to escalating tensions in contexts of resource scarcity.⁷²

Gender-differentiated roles related to access to land and resources place women and girls in a more vulnerable position to gender-based violence exposure while managing the household, such as during firewood and water collection. Conflict and climate change can intensify environmental

degradation, food insecurity and displacement. Ensuing tensions and competition over resources in and between persons, households, communities and industries amplify gender-based inequalities resulting in different types of gender-based violence. Women's limited access to resources, coupled with their limited participation in formal decision-making arenas, may limit their capacity to adapt to and mitigate the impacts of climate change in conflict settings. For example, women across the region have limited property rights and access to land. According to data from the Food and Agriculture Organization of the United Nations (FAO), only 3 per cent of agricultural land is held by women in Jordan, 4.4 per cent in Morocco and 6.4 per cent in Tunisia.⁷³ Notably, in settings affected by both climate change and conflict, women and girls may also face compounding risks given that they are often in charge of household water management; this includes a heightened risk of sexual and gender-based violence when seeking out water sources and other natural resources away from home.⁷⁴

3. How does it manifest in the Arab region?

As temperatures rise and rainfall patterns shift, these resources may become scarcer or less predictable. In a context where the region's population is expected to reach just over 600 million people by 2050, this can lead to increased competition for resources particularly in areas with already short supplies. In 2021, 19 out of 22 Arab States were already considered water scarce and, as surface water resources are becoming more stressed, the overuse of groundwater resources has become more common.⁷⁵ Water scarcity made worse by climate change can affect livelihoods in the agricultural sector and in other economic sectors, such as forestry, fisheries, and water supply and sanitation.⁷⁶ Among the many climate events affecting agricultural production, the Arab region is particularly affected by drought, which can have devastating impacts on livelihoods. In Somalia, pastoralists' livelihoods have been impacted by historical droughts resulting in the death of over 3 million livestock from 2021 to 2022.⁷⁷ For GCC countries, the depletion of non-renewable deep aquifers is estimated at more than 300 per cent renewable volume.⁷⁸

Climate change is projected to worsen this trend since droughts and changing rainfall patterns will likely reduce available freshwater resources. Fourteen out of 22 Arab States share a surface water body and two thirds of freshwater resources originate from outside of the region, adding complexity to water management and highlighting potential cross-border competition for these resources.⁷⁹

Availability of arable land, which is already affected by land degradation and desertification, is only likely to become more limited as rainfall patterns shift and droughts become more frequent and severe. In two thirds of the countries in the region, less than 5 per cent of the total land area is arable, while some countries (Saudi Arabia, Lebanon, Tunisia, Morocco, Yemen, Mauritania and the Syrian Arab Republic) have large pastures for livestock grazing.⁸⁰ Land rights and tenure systems may not be well developed, thus contributing to generating tensions around use and access. For example, in Somalia, diminishing availability of arable land, due to climate change, has led to increasing competition over land in the country, where land rights and governance are complicated by a lack of legal and land management systems.⁸¹

Demographic shifts such as urbanization can alter traditional livelihoods and result in increased competition for limited resources. Conflict itself may worsen resource scarcity. For example, only half of the water and sanitation systems in the

Syrian Arab Republic function properly due to damage related to violence.⁸² In Somalia, the presence of conflict and armed groups has also affected people's access to water. It is documented that Al-Shabaab uses control over water as a tactic by restricting physical access to the Juba and Shabelle rivers, destroying infrastructure or even poisoning wells.⁸³

Scarcity of natural resources, coupled with poor management and unequal access to these same resources, can create or exacerbate security challenges. For example, competition for access to, use of and ownership of resources, such as fertile land and water, has erupted in isolated incidents of violence between pastoralists and farmers in areas of the Sudan, such as the Blue Nile and Nuba Mountains.

Competition for scarce resources is likely to become more severe in the future. According to the upper bound emission projections (RCP 8.5) by RICCAR for the mid-term (2046–2065), 57 per cent of the region will experience high vulnerability in terms of water availability. Climate change will have a medium to high impact on water availability in parts of the Sudan and Yemen – areas that are already exposed to conflict and fragility. It should be noted that these projections do not consider water quality, which may be impacted by climate change through increased runoff, warmer waters that can lead to algal blooms, and saltwater intrusion in coastal aquifers because of sea-level rise.

C. Food insecurity

1. How can food insecurity be affected by climate change?

The impacts of climate change challenge food security in all its dimensions: availability, access, utilization and stability.⁸⁴ The availability of food can be affected by changes in temperature and rainfall patterns, which can lead to reduced crop yields and lower agricultural productivity. Loss of biodiversity and changes in the distribution and abundance of fish and livestock can also affect the availability of food for communities that rely on these resources. Climate change-induced shocks and disruptions in global food chains can affect the accessibility and availability of food by hikes in prices. Also, extreme weather events can

damage infrastructure and disrupt supply chains. If food is too expensive, or if it is physically difficult for people to access food, particularly in areas that are already food insecure, food security is diminished.

With increasing temperatures, and associated extreme weather events, this is only likely to worsen as agricultural yields suffer from changing climates, rainfall variability and climate hazards. Rainfed agriculture, which is prevalent in low- or middle-income Arab countries, is particularly exposed to climate risks.⁸⁵ Climate change may also affect the incidence of insect infestation and pests due to higher temperatures and extreme weather events potentially facilitating and triggering outbreaks.⁸⁶ For example, an upsurge in desert locusts in 2020, as a result

of floods, created favourable conditions for breeding and severely threatened livelihoods and food security in several Arab countries, including Somalia, Yemen and the Sudan, where insecurity made transboundary locust control difficult.

2. How does this relate to peace and security?

When food insecurity occurs, its effect on social stability is heavily impacted by factors such as low economic development, limited social safety nets, unemployment, demographic pressures and political grievances. It is, therefore, often seen as an additional burden and thereby contributes to the outbreak of social unrest. Food riots tend to concern a broad range of socioeconomic issues, where increasing food prices are the last straw that leads to unrest.⁸⁷ Thus, weather-driven fluctuations in local food production play an important role in food security in the Arab region. At the same time, since many Arab States are net importers of food, vulnerability to food security is determined by global food prices, food policies (including price subsidies) and the vulnerability of the population to food price shocks. If food prices increase, it has the potential to result in food riots and wider unrest, especially in combination with other socioeconomic grievances.⁸⁸ Nevertheless, whether such unrest materializes into organized violence is highly contingent on the respective government's policies.

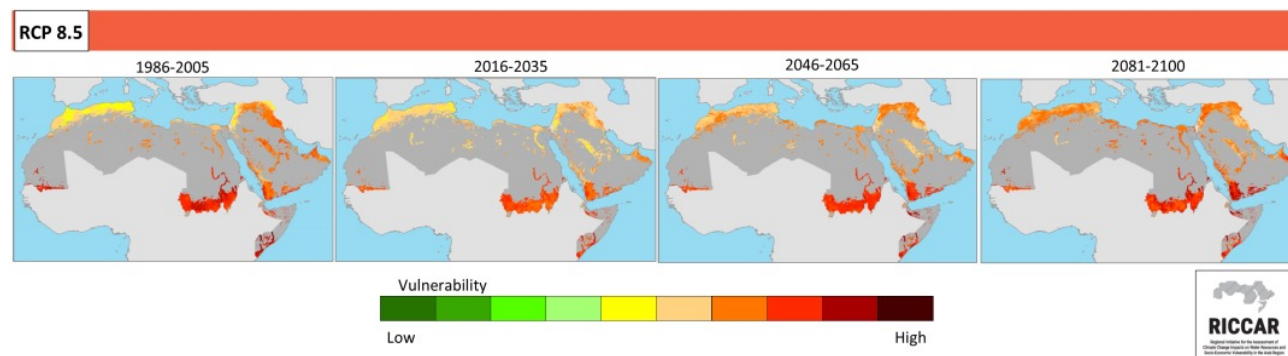
The following four factors are central in gauging a population's vulnerability to global food price increases: (a) the purchasing power of the population, in particular the share of income spent

on food for the poorest sections; (b) a government's ability to buffer its population against increasing food prices through subsidies or social protection, among other avenues; (c) the extent to which the country is a net food importer, particularly the import status for commodities; and (d) the extent to which the country is a net importer of agricultural goods.⁸⁹

3. How does it manifest in the Arab region?

In countries that are already fragile or affected by conflict, food insecurity is the result of the collapse of all the dimensions of food systems. The Syrian Arab Republic has suffered declines in both the quantity and quality of wheat produced due to the combination of drought, destruction of crops and agricultural infrastructure and disruption of agrifood chains.⁹⁰ In Somalia, historical droughts, other climate shocks, and persistent instability and insecurity have contributed to 6.5 million people experiencing acute food insecurity between May and June 2023.⁹¹ Food insecurity is also notable in the Sudan, mainly driven by the interplay of climatic and non-climatic factors. Accordingly, drops in yields and the inflation in food prices, in combination with the removal of food and fuel subsidies and the interruption of social protection programmes, have exacerbated food insecurity in the country. For example, in Eastern Sudan, 38.2 per cent of children under the age of 5 are impacted by stunting, higher than the average for Africa (29.1 per cent), a clear indication of malnutrition.⁹²

Figure 19. Change in water available for crops



Source: Authors based on ESCWA and others, 2017.

Note: These projections are based on an ensemble of three RCP 8.5 (high emissions scenario) projections as compared to the reference period (1986–2005). This measure is a combination of indicators of exposure (change in temperature, runoff, evapotranspiration, number of hot days and max length of dry spell), sensitivity (share of water consumption in agriculture, share of agriculture in GDP, among other indicators) and adaptive capacity (areas served by dams, access

to improved water, area equipped for irrigation, among other indicators).

According to RCP 8.5 projections by RICCAR, by mid-term, sections of the Sudan, Yemen and Somalia, which are already affected by conflict and fragility, are projected to experience high risk in terms of water available for crops. A series of studies conducted by RICCAR and the Arab Centre for the Studies of Arid Zones and Drylands (ACSAD) on the impacts of climate change on water and food security in the region

project decreasing yields for select crops in several countries. However, the yields of some crops, such as wheat, may increase, as higher levels of carbon dioxide in the atmosphere speed up the photosynthesis process.⁹³ Exploring the ways more climate-resilient crops can be used to ensure food security will be both a challenge and an opportunity for the Arab region.

D. Migration

1. How can migration be affected by climate change?

Climate change can contribute to migration and displacement both directly and indirectly. Sudden-onset climate hazards, such as floods, may for example displace people directly and temporarily. Slower onset hazards and changes in temperatures and weather patterns can, however, induce migration and displacement through their impacts on other transmission mechanisms, such as food insecurity or loss of livelihoods and income.⁹⁴ Migration may also be a coping mechanism for the impacts of climate change, as recognized in the Global Compact for Migration. However, those that are most vulnerable and living in or near areas of conflict may have a reduced ability to migrate safely, due to the lack of resources and access to safe routes.

Forcibly displaced people are particularly vulnerable to climate impacts. They often reside in temporary shelters or tented settlements that are not suitable to withstand climate hazards. Their vulnerability is closely connected to their uprootedness, being deprived of land or other assets, and cut off from the social networks of their communities of origin, as well as often lacking access to support mechanisms. As such, already uprooted people might become secondarily displaced if climate hazards occur.

2. How does this relate to peace and security?

If poorly managed, migration can serve as a factor that exacerbates grievances of host communities, as the arrival of

displaced people may trigger tensions. This can be the case if resources are diverted towards newcomers or competition over resources arises.⁹⁵ Contestation can also occur when host communities feel threatened by the sudden influx of displaced people and changes in the ethnic settlement pattern.⁹⁶ Nevertheless, whether climate-driven migration materializes into an increased risk of conflict is dependent on the socioeconomic and political context in the receiving area.

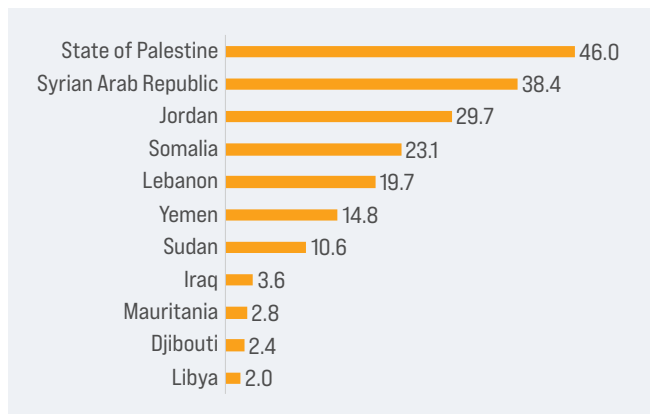
3. How does it manifest in the Arab region?

In some countries, the number of displaced people relative to the overall population is large (figure 20). In the State of Palestine, displaced people represent close to half of the population, while in the Syrian Arab Republic they represent over a third and in Jordan slightly less than a third. Somalia, Lebanon, Yemen and the Sudan also have relatively high shares of displaced people. The high prevalence of displaced people in a country signifies that a considerable portion of the population is particularly vulnerable to climate impacts, as they possess limited capacities to cope with and mitigate the impacts of climate change and extreme weather events. Gender also influences adaptation strategies.⁹⁷ For example, migrant or internally displaced women may experience additional insecurities when they are on the move as they tend to be at higher risk of sexual and gender-based violence, human trafficking and exploitation, child marriage and other forms of violence. Persons with disabilities face additional barriers in migration and displacement where there are physical, environmental and social barriers to access relief, humanitarian assistance and support.

While conflict is the main driver of displacement in the region, disaster-related internal displacement is becoming an increasingly important driver.⁹⁸ This can be seen in figure 21, where the number of new disaster-induced displacements has increased since 2010, most notably in 2020, with more than 1.7 million new displacements resulting from natural disasters, and 2022, with more than 1.5 million. Somalia, the Sudan and Yemen were among the countries that recorded the

highest numbers of disaster-induced displacements. However, beyond displacement when it comes to migration, there are no reliable estimates of the number of people migrating due to environmental factors. Many of the locations that are affected by climate change are also experiencing political instability, conflict, human rights abuses and low economic development; thus, unravelling the root causes of migration becomes difficult.⁹⁹

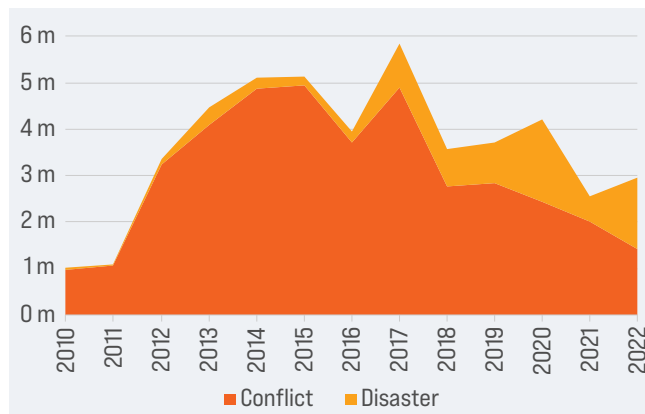
Figure 20. Displaced people, 2022 (Percentage of total population)



Sources: Refugees: UNHCR Refugee Data Finder; IDP "stock": IDMC database; and population: UNFPA.

Note: Displaced people are comprised of UNHCR and UNRWA refugees, and disaster- and conflict-induced IDPs. Countries where it is less than 0.5 per cent have been excluded.

Figure 21. New internal displacements in the Arab region



Source: IDMC database.

Note: The total is the sum of new internal displacements as of the end of the reporting year for all League of Arab States countries.



Box 3. Natural resource management challenges in host communities

Access to scarce natural resources, which may become even more scarce due to climate change, can drive tension between host communities and displaced persons. This has been the case in areas of Lebanon, for example, as it is the country that hosts the largest number of refugees per capita in the world, primarily due to conflict in neighbouring States.

Efforts to address and alleviate tensions between host communities and displaced persons can happen at both the national and community levels. In the case of Lebanon and Jordan, UN-Habitat, together with ESCWA and UNICEF, is in the process of implementing a project funded by the Adaptation Fund, which aims to build resilient water solutions in urban areas of the two countries that are facing the dual challenges of climate change impacts on water scarcity and large influxes of displaced persons. With collaboration from the two countries' national ministries of water and environment, the project deliverables include climate change and gender-mainstreamed municipal master plans as well as concrete interventions to expand the available water supply. The latter includes expanded wastewater treatment operations and the installation of rooftop rainwater harvesting technologies on public buildings.

While the diversity of stakeholders and components involved in projects of this nature can make implementation a challenge, the overall aim to address water scarcity over the mid- to long-term has positive implications for maintaining peace and stability in communities confronting the challenges of neighbouring conflict and climate change.

Instead, climate change may be part of a complex interplay of different drivers of migration. There is some evidence that climate impacts are among the reasons for migration. Iraq is an example of how conflict-induced migration compounds with other drivers such as water scarcity, the absence of cooperation around the management of limited water resources, lack of economic opportunities and environmental degradation.¹⁰⁰ In 2021, there were about 20,000 Iraqis displaced who identified water scarcity, poor water quality and high salinity, among other adverse aspects, as important driving factors.¹⁰¹ In addition, many of the IDPs in Iraq seek refuge in regions experiencing water and food insecurity.¹⁰²

Estimates about future migration vary widely and depend on assumptions about climate scenarios, as well as adaptive and coping capacities. For example, the Internal

Displacement Monitoring Centre (IDMC) estimates that an average of 392,000 people may be displaced due to riverine floods every year in the region, largely from urban and peri-urban areas.¹⁰³ The World Bank, on the other hand, estimates that by mid-term, there will be between 4.5 million and 13 million internal climate migrants in Northern Africa, depending on the climate scenario and the degree of inclusive development, mainly due to reduced water availability and sea-level rise.¹⁰⁴ Hotspots for outmigration include important coastal areas, such as Alexandria, rural coastal areas, as well as certain inland areas expected to face increasing water scarcity, such as the Atlas Mountains in Morocco, where croplands are largely rainfed, highlighting the interlinkages between the transmission mechanisms.¹⁰⁵ Among the Mashreq countries, climate change may add to existing drivers of mobility with further water scarcity, land degradation and heat stress pushing people to migrate.

In sum, both slow and sudden-onset climate hazards play a role in the propensity to migrate due to their interplay with livelihood and incomes' decline. Factors affecting habitability, such as sea-level rise and extremely high maximum temperatures, can create motives for outmigration. Adaptation to such conditions is sometimes possible, but if it is unfeasible, then outmigration is the most likely coping mechanism. However, the negative changes that affect

the motivation to move also affect the ability to relocate, creating two countervailing mechanisms with unknown net effects. Even though migration is one of the most frequently suggested mechanisms linking climate risk with conflict, cross-country evidence is too sparse to pinpoint anything with certainty at the current stage. What is quite clear is that migration is also an adaptation option and should not be seen as uniformly negative.





4. Addressing climate-related security risks in the Arab region



- Good governance, social cohesion and inclusivity are key to strengthening resilience against shocks and reducing the risk of insecurity and tensions arising.



- Integrated approaches are needed to address the complex challenges, and opportunities, related to the climate, peace and security nexus within the region.



- The differences, and similarities, across the region in terms of resources, vulnerability and fragility necessitate context-sensitive policies and approaches, though they also provide opportunities for cooperation over shared resources and joint challenges.

Given the increasing frequency and severity of climate impacts, combined with the fragility of several countries in the region, the climate, peace and security nexus will likely become more and more relevant. Arab States are vulnerable to climate change. Several armed conflicts in the region are ongoing and protracted in nature, which impairs countries' ability to respond to the challenge of climate change by consuming much-needed financial and other resources, as well as exacerbating environmental degradation. This decade is crucial for addressing climate change, peace and security issues. All Arab States must take action to mitigate and adapt to climate change, increase resilience and support sustainable development.

A. Policy considerations

To address the climate, peace and security nexus, a few cross-cutting principles must be considered when implementing the recommendations of this report, which have the potential to enhance positive outcomes of different actions.

First, good governance and effective institutions are essential building blocks to strengthen resilience and reduce fragility, as they can provide key services such as health care, education, social protection, infrastructure and emergency response. Building capacities is essential for effective governance. Institutions need sufficient expertise, resources and tools to be able to perform their functions effectively.¹⁰⁶ Due to the integrated and complex nature of the nexus, institutions need to be capable of advancing more integrated policies, breaking traditional silos and allowing many more actors to tackle increasingly complex and interconnected problems. Improving transparency, inclusivity and accountability is moreover important both to build trust in State institutions, improve their effectiveness, as well as to strengthen the social contract between State and citizens.

Second, social cohesion is important for managing shocks and stressors that impact societies, including violent conflict and climate impacts. Strengthening social cohesion within and between groups, reducing inequalities and developing inclusive and effective governance systems can help mitigate the drivers of fragility and conflict and reduce the potential adverse impacts of climate change on people and communities.

Inclusive participation is important to promote policies and actions that are fair, effective, sustainable and that address the needs of all people, as well as to ensure that the concerns, needs or grievances of different groups are addressed. This may include ensuring the meaningful participation of women, youth, persons with disabilities, and other marginalized groups in nationally determined contributions (NDCs) and national adaptation plans (NAPs) and related climate change plans. Ensuring women's participation in political institutions and decision-making processes is important for peacebuilding and human security and is crucial to address gender inequality and discrimination and to improve protections against sexual and gender-based violence and conflict-related sexual violence.

Specific attention must be paid to issues of inequity and access in natural resource management and to the effects of climate

change for different groups. Weak and non-inclusive land and natural resource management can contribute to tensions and conflict, especially with increasing competition over scarcer renewable natural resources. Thus, sustainable, inclusive and fair management of natural resources is key, and may moreover create an opportunity for opposing groups to work together on technical issues regarding their use, which may lay the ground for improved understanding between the groups.

Third, studying the nexus between climate change, peace and security is important to explain how shocks, pressures and structural factors interact with actors to create different kinds of conflicts and fragility. Indeed, the associated risks are complex and interconnected. Therefore, for institutions to address them effectively, new ways of enhanced coordination and networked innovation are needed. A more integrated approach is critical to address the drivers of conflict, fragility and vulnerability holistically. This approach should encompass environmental and climate-related factors alongside other drivers of insecurity and socioeconomic and institutional fragility. Policymakers should focus on how certain drivers reinforce each other and can create vicious cycles of increasing fragility and vulnerability. In this regard, the political momentum created by the Egyptian COP 27 Presidency initiative Climate Responses for Sustaining Peace (CRSP) offers the opportunity to operationalize actions that fill existing gaps between climate action and developmental and peacebuilding approaches. This initiative also offers an opportunity to strengthen the capacities of humanitarian actors and civil society to participate in anticipatory action and advance preventive measures.

Fourth, the Arab region is a heterogenous group of countries, with great variety of contexts in terms of fragility and vulnerability. The region ranges from high-income to least developed countries (LDCs), with varying natural endowments and climatic conditions, as well as ones suffering from protracted conflict. Differences importantly also exist within countries. The selection of policy instruments must thus be made and aligned according to the national, or local, context. This also applies to policies and strategies that contribute to peacebuilding and conflict prevention, as local contexts, grievances and opportunities for peacebuilding vary. Local and indigenous experiences and knowledge can also be important in shaping such policies and actions, as they often have developed

context-specific adaptation and coping mechanisms that can help inform policy and programming and ensure more inclusive, effective and sustainable outcomes. In this regard, heterogeneity might act as an enabler to share experiences and capitalize on opportunities of transboundary cooperation.

Climate change, and the threat it poses for peace and security, knows no borders. This renders purely national or subnational initiatives to address associated challenges insufficient. Natural resources, particularly food and water resources, located in transboundary settings are already confronting scarcity. Moreover, the policies and actions of one country can affect its neighbours. For example, one State damming water upstream for use in irrigation could impact water availability on States downstream, indicating how adaptation actions may create challenges if developed without properly accounting for transboundary concerns.¹⁰⁷ In the Arab region, two thirds

of freshwater resources are transboundary and there are 24 transboundary aquifers.¹⁰⁸ Nevertheless, transboundary water agreements are relatively rare in the Arab region. Efforts to change this, however, include the work of ESCWA with the Arab Ministerial Water Council to develop guidelines for transboundary cooperation open to exploring opportunities for cooperation and expanding good practices to other domains of cooperation. Limiting rivalry and fostering regional integration and cooperation around these resource networks will help to maintain security and peace while promoting more effective climate adaptation. Focusing on climate and environmentally related issues, moreover, offers important entry points for engagement and regional collaboration, especially in situations where engagement might otherwise be limited, either because of larger conflict or country dynamics, or because of social barriers on specific issues such as social cohesion and women's empowerment.

B. Recommendations

With these considerations in mind, this section presents recommendations on promising approaches or practices that can be critical to advance the climate, peace and security nexus in the Arab region as well as steps to promote broader learning in this field. Just as the implications of the climate, peace and security nexus vary across countries, so do the policy options to address them. Nevertheless, a few key cross-cutting recommendations can be made and hold opportunities for the region. The following recommendations and associated measures focus on the multilateral, regional and national levels. National level recommendations may also include subnational, local or community implementation:

Recommendation 1

Mainstream the climate, peace and security nexus across policy, planning and programming. Due to the interlinked and complex nature of the climate, peace and security nexus, integrated and inclusive approaches across different policy areas are necessary to address associated challenges or opportunities.

Multilateral and regional level

- Ensure that climate considerations are contemplated in discussions, planning and theory of change of programming on conflict prevention, not only to highlight risks and vulnerabilities but also to highlight opportunities for addressing root causes of conflict. This may include efforts:
 - To integrate climate security considerations when applying the Humanitarian–Development–Peace Nexus.
 - To identify opportunities for and promote the use of natural resource management and adaptation as an entryway for cooperation and peacebuilding, including by supporting the role of women and other marginalized groups in peacebuilding.
 - To promote and provide guidance on the integration of climate and environmental risks in national policies and planning, such as within the NAPs under the women, peace and security agenda.

- Ensure that peace and security are considered in discussions, planning and theory of change of programming on climate change, especially in relation to adaptation, so that synergies and risks are identified and addressed. This may include efforts:
 - To assist and provide guidance on the inclusion of peace and security considerations in NAPs and other climate policy plans, as well as other policy documents such as Gender Action Plans (GAPs).
 - To support the mainstreaming of gender in climate policy and action, including the active participation of women in the design and implementation of regional climate response actions and implementation of gender-responsive actions included in the Sendai Framework for Disaster Risk Reduction 2015–2030.
 - To train climate change leaders, experts, advisers and other key stakeholders so that they understand the nexus and potential of climate action for peace and security.
- Partner across silos, with multilateral, regional, national and local actors, to ensure ownership and agency in addressing climate, peace and security considerations, working selectively in the areas that best harness institutional comparative advantage while cultivating partnerships with other actors across the humanitarian, development and peace spheres.
- Facilitate access to integrated and diverse early warning systems and analysis for risk-informed policymaking, and enable anticipatory action, effective emergency response mechanisms, and effective implementation of the Executive Action Plan for the Early Warnings for All, 2023–2027 initiative as well as related resilience initiatives such as the Action for Water Adaptation and Resilience (AWARe) initiative.

National level

- Integrate peace and security considerations into new and existing climate policies, which may include efforts:
 - To ensure that NAPs, National Adaptation Programs of Action and other climate policy and planning processes, such as the NDCs and sectoral policies are conflict sensitive, inclusive and do not lead to increased insecurities. This should include the meaningful participation of women and traditionally marginalized groups.
 - To assess peace and security implications of adaptation initiatives, minimize associated risks and take advantage of positive synergies, ensuring inclusivity by taking into account differentiated effects for different groups (e.g., women, youth, persons with disabilities, minorities and other marginalized groups).
- Ensure that the climate, peace and security nexus is integrated across socioeconomic and political policy and reforms. This can be done by:
 - Integrating it into existing rather than separate planning frameworks, making use of spaces where there is policy momentum and discursive energy, and guard against stand-alone processes that risk leading to fragmentation.
 - Integrating climate and environmental risks into national action plans on the women, peace and security agenda and other national-level policy and planning processes for the implementation of the agenda, and support women's formal and informal peacebuilding efforts to address climate-related security risks

Recommendation 2

Make inclusive social policy a pillar of risk reduction. Social policy and protection, if inclusive and well designed, provides potent instruments in bridging social cleavages and preventing deprivation. As such, social protection initiatives that are inclusive of women, youth, persons with disabilities and other traditionally marginalized groups can help increase resilience to shocks such as those brought by climate change.

Multilateral and regional level

- Provide guidance, technical assistance and resources for the development of social protection systems, including identifying and sharing best practices and lessons learned. For example, the Global Accelerator on Jobs and Social Protection for Just Transitions launched by the Secretary-General of the United Nations supports resource mobilization and provides technical support.
- For the Arab LDCs, materialize the food stockholding mechanism agreed upon as a key deliverable of the Doha Programme of Action for the Least Developed Countries for the decade 2022–2031.

- Explore and analyse experiences of social protection, including new systems that have come into use during the COVID-19 pandemic, giving special consideration to beneficiaries that have formerly been excluded, including those in the informal sector and migrant workers.

National level

- Provide inclusive, fair and non-discriminatory social protection schemes or other social benefits in order to strengthen the resilience of people and reduce their vulnerability. Depending on the context, this may include cash transfers or food vouchers, or universal social protection schemes, designed in a way that first targets those furthest behind.

Recommendation 3

Improve natural resource management. To reduce risks of insecurity and tensions arising from competition over resources and inequitable access and rights to natural resources, as well as slow or reduce environmental pressures, sustainable and inclusive natural resource management policies and mechanisms are needed. The management of shared natural resources can also support peace by bringing opposing groups together to discuss solutions and build trust.

Multilateral and regional level

- Promote a regional perspective to transboundary resource management:
 - Facilitate cooperation agreements on transboundary resources or resources for which there are shared management challenges or opportunities, especially transboundary water agreements, which are currently lacking. For example, this may include the development of guidelines, such as the attempt of ESCWA and the Arab Ministerial Water Council (AMWC) to develop guidelines for transboundary cooperation.
 - Assist in efforts to identify synergies, as well as recognize and limit potential unintended consequences that can have negative impacts on neighbouring countries within countries' natural resources-related

policies (e.g., NAPs). This may be particularly relevant for transboundary natural resources such as water.

- Enhance and facilitate technology transfers in areas that are critical for the Arab region, such as desalination and other technologies that increase access to unconventional water resources.

National level

- Create inclusive spaces for dialogue and cooperation around natural resource management by bringing communities together and ensure the inclusion of typically excluded groups, such as women and youth, and help ease competition over natural resources in areas such as through access to and/or control over land, pasture and water.

- Engage and cooperate with neighbouring States over shared natural resources and their management, or joint challenges, in order to take advantage of synergies. This may in particular be relevant in cross-border areas where addressing vulnerabilities will require collaboration with riparian States.
- Ensure fair and inclusive rights and access to natural resources, and clarify where different levels of systems (e.g., customary, national legal frameworks, etc.) may be overlapping. This may include promoting inclusive rights to land tenure and supporting equal access to historically marginalized groups, including women, persons with disabilities and youth.
- Set up dispute resolution mechanisms that are accessible to all people, or if dispute mechanisms already exist, ensure that they are inclusive, fair and accessible. In some cases, especially where there are circumstances that favour local resolution, this may include natural resource management committees that take into account climate security concerns and are inclusive.

Recommendation 4

Improve access to finance and technology. To facilitate investment in adaptation and building resilience, including social protection and peacebuilding, financing gaps need to be closed and technical capacity strengthened. Sufficient funding needs to be made available, accessible and predictable, especially for the countries most in need. For this to be done, the \$100 billion in adaptation finance needs to be met, as well as the operationalization of the loss and damage fund agreed on during COP 27. Capacity-building, such as provided by integrated national financing frameworks, is also vital to facilitate access to both funding and technology and ensure absorptive capacity across the region.

Multilateral and regional level

- Ensure financing is available for addressing the climate, peace and security nexus and is accessible also to the countries that are the most fragile and suffering from conflict. This may include adding peacebuilding considerations within lending assessments and ensuring that funding does not imply an additional debt burden.
- Support innovative ways to access climate finance, such as through climate debt swaps where indebted countries can swap interest and principal payments owed on external debts towards domestic climate investments. The ESCWA Climate/SDGs Debt Swap-Donor Nexus Initiative provides one such example. ESCWA and the League of Arab States also launched the Arab Initiative for Mobilizing Climate Finance for Water. Implemented in partnership with the Islamic Development Bank, Green Climate Fund, FAO and the Government of Sweden, and with collaborating institutions serving the region, the initiative will provide Arab States with tailored training and technical support to develop evidence-based project pipelines for financing water projects.
- Support and facilitate regional cooperation on financing, between lower income and higher income countries, by utilizing and leveraging existing cooperation frameworks and maximizing opportunities for intra-regional and extraregional South-South cooperation. For example, UNFCCC, the Council of Arab Ministers Responsible for the Environment, the League of Arab States and ESCWA are collaborating on the development of a new strategy to mobilize access to climate finance. This strategy aims to increase access to climate finance in the Arab region by strengthening institutional capacity to receive funding and by developing multi-country and transboundary projects.

National level

- Leverage synergies between climate adaptation, humanitarian, development and peacebuilding funding, incorporating ecosystem thinking, and strengthening local adaptive capacity in gender-sensitive ways.

- Assess the adaptation financing (costing) needs in order to clarify and advocate for accurate funding needs and facilitate access to funding from international and multilateral donors.
- Develop projects and programmes to access national and subnational funding opportunities such as the Local Climate Adaptive Living Facility (LoCAL) managed by the United Nations Capital Development Fund (UNCDF), which provides performance-based grants for climate adaptation together with capacity-building and technical assistance to subnational governments.

Recommendation 5

Improve research, knowledge and expertise on the climate, peace and security nexus. In order to best address the challenges and opportunities that arise from the climate, peace and security nexus and ensure that relevant actors have the necessary capacity and expertise, it is important to strengthen, build new and utilize existing local and traditional knowledge and expertise.

Multilateral and regional level

- Strengthen knowledge and evidence on areas that may merit further research, such as on the intersection of gender, disability, youth and other marginalized groups with the nexus, and through case studies of specific contexts (e.g., the impacts of the energy transition). This may include the development of regional research networks or promotion of existing ones.
- Explore how big data, frontier technologies and non-traditional sources of data can help increase knowledge and understanding of the nexus, including by providing more timely and frequent information, as well as disaggregated data that can help illuminate differences based on gender, age and disability status, among other characteristics.
- Promote and facilitate the inclusion of local and indigenous knowledge in research and analysis on the climate, peace and security nexus. Ensure involvement of these communities in the discussions to operationalize the COP 27 Presidency initiative Climate Responses for Sustaining Peace (CRSP).
- Provide consolidated knowledge products for risk assessments within the region, as a tool both for national authorities in developing risk-informed policymaking and for informing work at the multilateral level, such as RICCAR, the Violence Early-Warning System (ViEWS) and others.
- Continue to further the momentum for research and discussions around the climate, peace and security nexus, including through initiatives such as the Climate Responses for Sustaining Peace (CRSP) initiative launched by the Egyptian COP 27 Presidency.
- Provide capacity-building and training for Governments and local authorities to integrate a climate, peace and security nexus approach in planning and policymaking, including how to manage early warning systems and reach communities through preventive actions.
- Build capacity within the United Nations system and other multilateral actors in the region to address climate-related security risks as part of conflict-prevention programming in the region, as well as conflict and insecurity aspects of climate adaptation and natural resources policy.

National level

- Improve institutional understanding of the climate, peace and security nexus and capacity to address associated challenges and opportunities, including capacity-building in water diplomacy, intersectional gender analysis and other relevant topics.
- Disseminate information and educate about climate change, peace and security, drawing from scientific research, in order to enhance public understanding of associated issues and enable individuals and communities to take appropriate

actions. This may include public information campaigns, inclusion in educational curricula, etc. To ensure inclusivity and that all groups are reached, adapting communication to local or specific contexts is key.

- Share best practices and lessons learned from implementing adaptation, peacebuilding or other actions

that relate to the nexus, including at the local level where context-specific and traditional methods can provide key lessons for how to address specific challenges.

- Identify, include and share traditional or local knowledge and experience that can help inform climate security policy, programming or actions.

5. Concluding remarks



Fragility, insecurity and conflict arise from complex interactions between social, political, economic and environmental factors. In most cases, climate change is just one variable among others that aggravate and compound existing stressors, which may drive conflict and insecurity, such as political instability, displacement, poverty and hunger.



The pervasiveness of challenges related to armed conflict, fragility, insecurity, governance and development limits the ability of Arab States to adapt to, respond to and cope with the climate impacts to which they may be exposed, and reduce their ability to mitigate risk transmission through the climate-conflict nexus. Many of the countries that are affected by conflict are also among the most exposed to climate hazards, creating additional strain and challenges for these countries. As such, countries in conflict or post-conflict settings are particularly vulnerable to risks from the climate-conflict nexus.



A broader understanding of how climate, peace and security interact, anchored in a human security perspective, is necessary to acknowledge the complexity of the context in which it is possible to achieve sustainable peace and development. An integrated approach is needed to address the drivers of conflict, fragility and vulnerability holistically. This approach should encompass environmental or climate-related factors alongside other drivers of insecurity such as poor governance, inequity, exclusion, poor socioeconomic outcomes, and other sources of vulnerability or violence. Focusing on climate and environmentally related issues offers important entry points for engagement and regional collaboration, especially in situations where engagement might otherwise be limited, either because of larger conflict or country dynamics, or because of social barriers on specific issues such as social cohesion and women's empowerment.

References

- Al-Zubari, Waleed and others (2017). An Overview of the GCC Unified Water Strategy (2016–2035). *Desalination and Water Treatment*, vol. 81 (June), pp. 1–18. Available at <https://doi.org/10.5004/dwt.2017.20864>. As cited in: United Nations Economic and Social Commission for Western Asia (ESCWA) (2021). ESCWA Water Development Report 9: Groundwater in the Arab region. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/water-development-report-9-english.pdf>.
- Bezner Kerr, Rachel and others (2022). 2022: Food, Fibre, and Other Ecosystem Products. 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*, edited by H.-O. Pörtner and others. Cambridge, UK and New York, USA: Cambridge University Press, pp. 713–906. Available at https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter05.pdf.
- Boone, Catherine (2017). Sons of the Soil Conflict in Africa: Institutional Determinants of Ethnic Conflict Over Land. *World Development*, vol. 96, pp. 276–293. Available at <https://doi.org/10.1016/j.worlddev.2017.03.012>.
- Bromwich, Brendan (2018). Power, Contested Institutions and Land: Repoliticising Analysis of Natural Resources and Conflict in Darfur. *Journal of Eastern African Studies*, vol. 12, No. 1, pp. 1–21. Available at <https://doi.org/10.1080/17531055.2017.1403782>.
- Brown, Ian A. (2010). Assessing Eco-Scarcity as a Cause of the Outbreak of Conflict in Darfur: A Remote Sensing Approach. *International Journal of Remote Sensing*, vol. 31, No. 10, pp. 2513–2520. Available at <http://dx.doi.org/10.1080/01431161003674592>.
- Buhaug, Halvard and Nina von Uexkull (2021). Vicious circles: Violence, vulnerability, and climate change. *Annual Review of Environment and Resources*, vol. 46, pp. 545–568. Available at <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012220-014708>.
- Cherng, Sarah T. and others (2019). Social cohesion and passive adaptation in relation to climate change and disease. *Global Environmental Change*, vol. 58, 101960. Available at <https://doi.org/10.1016/j.gloenvcha.2019.101960>.
- Clement, Viviane and others (2021). *Groundswell Part 2: Acting on Internal Climate Migration*. Washington, DC: World Bank. Available at <http://hdl.handle.net/10986/36248>.
- Climate Diplomacy (n.d.). Piracy off the Coast of Somalia. Available at <https://climate-diplomacy.org/case-studies/piracy-coast-somalia>.
- Collier, Paul and Anke Hoeffler (2004). Greed and grievance in civil war. *Oxford Economic Papers*, vol. 56, No. 4, pp. 563–595. Available at <https://doi.org/10.1093/oep/gpf064>.
- International Crisis Group (n.d.). Giving Countries in Conflict Their Fair Share of Climate Finance. Accessed in April 2023. Available at <https://www.crisisgroup.org/content/fair-share-of-climate-finance>.
- De Juan, Alexander (2015). Long-Term Environmental Change and Geographical Patterns of Violence in Darfur, 2003–2005. *Political Geography*, vol. 45 (March), pp. 22–33. Available at <https://doi.org/10.1016/j.polgeo.2014.09.001>.
- ESCWA (2018). Disability in the Arab region. Available at https://www.unescwa.org/sites/default/files/pubs/pdf/disability-arab-region-2018-english_1.pdf.

_____ (2019). Water Action Decade 2018–2028: Water for Sustainable Development – Arab Region Engagement. E/ESCWA/SDPD/2019/BOOKLET.1. Available at <https://www.unescwa.org/sites/default/files/inline-files/water-action-decade-booklet-en.pdf>.

_____ (2020). Estimating the Cost of Child Marriage in the Arab Region. E/ESCWA/CL2.GPID/2020/TP.2. Available at <https://arabstates.unfpa.org/en/publications/estimating-cost-child-marriage-arab-region>.

_____ (2021a). Domestic conflict: a proposed index and its implications for Arab States. E/ESCWA/CL6.GCP/2021/TP.6. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/domestic-conflict-proposed-index-implications-arab-states-english.pdf>.

_____ (2021b). ESCWA Water Development Report 9: Groundwater in the Arab region. E/ESCWA/CL1.CCS/2021/2. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/water-development-report-9-english.pdf>.

_____ (2022a). Climate finance needs and flows in the Arab region. E/ESCWA/CL1.CCS/2022/Policy Brief.1. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/climate-finance-needs-flows-arab-region-english.pdf>.

_____ (2022b). Inequality in the Arab region: A ticking time bomb. E/ESCWA/CL2.GPID/2022/2. Available at https://www.unescwa.org/sites/default/files/pubs/pdf/inequality-arab-region-ticking-time-bomb-english_0.pdf.

_____ (2022c). World Development Challenges Report: Development from a broader lens. E/ESCWA/CL6.GCP/2022/1. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/world-development-challenges-broader-lens-english.pdf>.

_____ (2023). Arab Risk Monitor: A Conceptual Framework. E/ESCWA/CL6.GCP/2023/TP.2. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/arab-risk-monitor-conceptual-framework-english.pdf>.

ESCWA and ACWUA (2017). Climate Change Adaptation in Human Settlements Using Integrated Water Resources Management Tools. E/UNESCWA/SDPD/2015/Module.4. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/human-settlements-integrated-water-resources-management-english.pdf>.

ESCWA and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) (2013). Inventory of Shared Water Resources in Western Asia. E/ESCWA/SDPD/2013/Inventory. Available at https://www.unescwa.org/sites/default/files/pubs/pdf/e_escwa_sdpd_13_inventory_e.pdf.

ESCWA and FAO (2017). Arab Horizon 2030: Prospects for Enhancing Food Security in the Arab Region. E/ESCWA/SDPD/2017/1. Available at https://www.unescwa.org/sites/default/files/pubs/pdf/arab-horizon-2030-prospects-enhancing-food-security-arab-region-english_0.pdf.

ESCWA and University of St. Andrews (2020). Syria at War: 8 Years on. Available at <https://publications.unescwa.org/projects/saw/sdgs/pdf/en/Syria-at-War-8-years-on-Report-Final.pdf>.

ESCWA and others (2017). Arab Climate Change Assessment Report – Main Report. Available at <https://www.unescwa.org/publications/riccar-arab-climate-change-assessment-report>.

_____ (2021). The Attainment of SDGs in Conflict-affected Countries in the Arab Region. Available at <https://www.unescwa.org/publications/attainment-sdgs-conflict-affected-countries-arab-region>.

Food and Agriculture Organization of the United Nations (FAO) (n.d.a). FAO portal to monitor Water Productivity through Open access of Remotely sensed derived data (WaPOR). Available at https://wapor.apps.fao.org/home/WAPOR_2/2?theme=L2_LCC_A&dim=YEAR:%255B2021-01-01%252C2022-01-01.

_____ (n.d.b). Gender and Land Rights Database. Available at https://www.fao.org/gender-landrights-database/data-map/statistics/en/?sta_id=982.

Gadain, Hussein (2022). Leaving no one behind in Yemen: Steps towards better production, nutrition, environment and life. FAO. Available at <https://www.fao.org/countryprofiles/news-archive/detail-news/en/c/1609099>.

GBV AoR Helpdesk (2021). Climate Change and Gender-based Violence: What Are the Links? Available at <https://gbvaor.net/sites/default/files/2021-03/gbv-aor-helpdesk-climate-change-gbv-19032021.pdf>.

Global Migration Data Portal (n.d.). Environmental Migration. Available at [https://www.migrationdataportal.org/themes/environmental migration and statistics](https://www.migrationdataportal.org/themes/environmental%20migration%20and%20statistics).

Gray, Leslie and Michael Kevane (2008). Darfur: Rainfall and Conflict. Available at <https://ssrn.com/abstract=1147303>.

Grossman, Herschell I. (1991). A general equilibrium model of insurrections. *The American Economic Review*, vol. 81, No. 4, pp. 912–921. Available at <https://www.jstor.org/stable/2006650>.

Gurr, Ted Robert (1970). *Why Men Rebel*. Princeton, NJ, USA: Princeton University Press.

Hanna, Taylor and others (2021). Assessing the Impact of War in Yemen: Pathways for Recovery. United Nations Development Programme (UNDP). Available at <https://www.undp.org/publications/assessing-impact-war-yemen-pathways-recovery>.

Heslin, Alison (2021). Riots and resources: How food access affects collective violence. *Journal of Peace Research*, vol. 58, No. 2, pp. 199–214. Available at <https://doi.org/10.1177/0022343319898227>.

Integrated Food Security Phase Classification (IPC) (2021). Sudan Acute Food Insecurity Situation April 2021 – February 2022. Available at <https://reliefweb.int/report/sudan/sudan-ipc-acute-food-insecurity-analysis-april-2021-february-2022-issued-may-2021>.

_____ (2022). Somalia faces increased Risk of Famine as acute food insecurity, malnutrition, and mortality worsen. Available at https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/Somalia%20Updated%20IPC%20and%20Famine%20Risk%20Analysis%20Technical%20Release%20Final%20-%204%20Jun%202022.pdf.

Intergovernmental Panel on Climate Change (IPCC) (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Available at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf.

_____ (2022a). *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Available at https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FullReport.pdf.

_____ (2022b). Annex II: Glossary [Möller, V., R. van Diemen, J.B.R. Matthews, C. Méndez, S. Semenov, J.S. Fuglestedt, A. Reisinger (eds.)]. 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, UK and New York, USA: Cambridge University Press, pp. 2897–2930, doi:10.1017/9781009325844.029.

_____ (2022c). *Headline Statements from the Summary for Policymakers*. Available at <https://www.ipcc.ch/report/ar6/wg3/resources/spm-headline-statements/>.

Internal Displacement Monitoring Centre (IDMC) (2021). *A decade of displacement in the Middle East and North Africa*. Available at https://www.internal-displacement.org/sites/default/files/publications/documents/IDMC_MenaReport_final.pdf.

International Committee of the Red Cross (ICRC) (October 2021). *Syria water crisis: Up to 40% less drinking water after 10 years of war*. Available at <https://www.icrc.org/en/document/syria-water-crisis-after-10-years-war>.

- International Labour Organization (ILO) (2018). The employment impact of climate change adaptation: Input Document for the G20 Climate Sustainability Working Group. Available at https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_645572.pdf.
- International Organization for Migration (IOM) Iraq (2022). Migration, Environment, and Climate Change in Iraq. Available at <https://iraq.iom.int/sites/g/files/tmzbd11316/files/documents/Climate%20Migration%20in%20Iraq%20-%20Report.pdf>.
- IRIN News (2009). Drought Blamed for Food Scarcity. *The New Humanitarian*. 22 February. Available at https://bit.ly/NHum_22Feb2009. As cited in: Lyall, Nicholas and Karam Shaar. The Impacts of the Contemporary Drought in Syria and Its Implications for the Conflict. 28 June. Available at <https://opc.center/the-impacts-of-the-contemporary-drought-in-syria-and-its-implications-for-the-conflict/>.
- Jiang, Bo and Gary LaFree (2023). Climate Change, Fish Production, and Maritime Piracy. *Weather, Climate, and Society*, vol. 15, No. 2, pp. 289–306. Available at <https://doi.org/10.1175/WCAS-D-21-0147.1>.
- Koos, Carlo (2018). Which Grievances Make People Support Violence against the State? Survey Evidence from the Niger Delta. *International Interactions*, vol. 44, No. 3, pp. 437–462. Available at <https://doi.org/10.1080/03050629.2017.1369411>.
- Koubi, Vally and others (2018). The Determinants of Environmental Migrants' Conflict Perception. *International Organization*, vol. 72, No. 4, pp. 905–936. Available at <https://doi.org/10.1017/S0020818318000231>.
- Mamdani, Mahmood (2007). The Politics of Naming: Genocide, Civil War, Insurgency. *London Review of Books*. 8 March. <https://www.lrb.co.uk/the-paper/v29/n05/mahmood-mamdani/the-politics-of-naming-genocide-civil-war-insurgency>.
- Maystadt, Jean-Francois and others (2014). Does food security matter for transition in Arab countries? *Food Policy*, vol. 46, pp. 106–115. Available at <https://doi.org/10.1016/j.foodpol.2014.01.005>.
- Nadin, Rebecca and Erin Roberts (2018). Moving towards a growing global discourse on transboundary adaptation. ODI Briefing Note. London, UK: Overseas Development Institute. Available at <https://cdn.odi.org/media/documents/12139.pdf>.
- National Aeronautics and Space Administration (NASA) (2016). NASA Study: Rising Carbon Dioxide Levels Will Help and Hurt Crops. Available at <https://www.nasa.gov/feature/goddard/2016/nasa-study-rising-carbon-dioxide-levels-will-help-and-hurt-crops/#:~:text=Studies%20have%20shown%20that%20higher,water%20crops%20lose%20through%20transpiration>.
- Norris, Pippa (2006). Political protest in fragile states. *International Political Science Association World Congress*, pp. 1–31.
- Norwegian Institute of International Affairs (NUPI) and Stockholm International Peace Research Institute (SIPRI) (2022a). Climate, Peace and Security Fact Sheet: Somalia. Available at <https://www.nupi.no/en/news/climate-peace-and-security-fact-sheet-somalia2>.
- _____ (2022b). Climate, Peace and Security Fact Sheet: Iraq. Available at https://sipri.org/sites/default/files/NUPI_Fact_Sheet_Iraq_April2022_new%5B46%5D.pdf.
- Norwegian Refugee Council (NRC) (2021). Iraq's drought crisis and the damaging effects on communities. Available at <https://www.nrc.no/resources/reports/iraqs-drought-crisis-and-the-damaging-effects-on-communities/#:~:text=Children%20are%20eating%20less%2C%20>
- Organisation for Economic Co-operation and Development (OECD) (2022). States of Fragility 2022. Paris, France: OECD Publishing. Available at <https://doi.org/10.1787/c7fedf5e-en>.
- OECD and FAO (2018). The Middle East and North Africa: Prospects and challenges, in *OECD-FAO Agricultural Outlook 2018–2027*. Available at https://www.oecd-ilibrary.org/docserver/agr_outlook-2018-5-en.pdf?expires=1673512390&id=id&accname=ocid195767&checksum=02FB2942670A9CFF57596D5B2FBD7238.

Olsson, Ola (2016). Climate Change and Market Collapse: A Model Applied to Darfur. *Games*, vol. 7, No. 1, p. 9. Available at <https://doi.org/10.3390/g7010009>.

Peace Research Institute Oslo (PRIO) (2019). Trends in armed conflict, 1946–2018. Conflict Trends Policy Brief, No. 3. Oslo: Peace Research Institute. Available at <https://reliefweb.int/sites/reliefweb.int/files/resources/Strand%2C%20Rustad%2C%20Urdal%2C%20Nyg%C3%A5rd%20-%20Trends%20in%20Armed%20Conflict%2C%201946%E2%80%932018%2C%20Conflict%20Trends%203-2019.pdf>.

Rentschler, Jun and others (2022a). Flood exposure and poverty in 188 countries. *Nature Communications*, vol. 13, No. 3527. Available at <https://www.nature.com/articles/s41467-022-30727-4>.

_____ (2022b). Supplementary Information: Flood exposure and poverty in 188 countries. Accessible at https://static-content.springer.com/esm/art%3A10.1038%2Fs41467-022-30727-4/MediaObjects/41467_2022_30727_MOESM1_ESM.pdf.

Reuveny, Rafael (2007). Climate change-induced migration and violent conflict. *Political geography*, vol. 26, No. 6, pp. 656–673. Available at <https://doi.org/10.1016/j.polgeo.2007.05.001>.

Rudolfson, Ida (2020). Food price increase and urban unrest: The role of societal organizations. *Journal of Peace Research*, vol. 58, No. 2, pp. 215–230. Available at <https://doi.org/10.1177/0022343319899705>.

Salih, Abubakr A.M. and others (2020). Climate change and locust outbreak in East Africa. *Nature Climate Change*, vol. 10, pp. 584–585. Available at <https://doi.org/10.1038/s41558-020-0835-8>.

Selby, Jan and Clemens Hoffmann (2014). Beyond Scarcity: Rethinking Water, Climate Change and Conflict in the Sudans. *Global Environmental Change*, vol. 29, pp. 360–370. Available at <https://doi.org/10.1016/j.gloenvcha.2014.01.008>.

Seter, Hanne, Ole Magnus Theisen, and Janpeter Schilling (2018). All about Water and Land? Resource-Related Conflicts in East and West Africa Revisited. *GeoJournal*, vol. 83, No. 1, pp. 169–187. Available at <https://doi.org/10.1007/s10708-016-9762-7>.

Shortland, Anja (2010). The Business of Piracy in Somalia. *Weekly Report*, vol. 6, No. 23. Berlin: DIW. As cited in: *Climate Diplomacy* (n.d.). Piracy off the Coast of Somalia. Available at <https://climate-diplomacy.org/case-studies/piracy-coast-somalia>.

Smidt, M. and O.M. Theisen (2018). Climate change and conflict: agriculture, migration and institutions. In *Crisis and conflict in agriculture* (pp. 40–52). Wallingford, UK: CAB International.

Smith, Elizabeth S. (2022). Gender Dimensions of Climate Insecurity. *SIPRI Insights on Peace and Security*, No. 2022/4. Available at https://www.sipri.org/sites/default/files/2022-03/sipriinsight2204_gender_dimensions_of_climate_insecurity.pdf.

Tangalakis-Lippert, Katherine (2023). How do you stop a pirate? Put more fish in the sea. *Business Insider*. 20 May. Available at <https://www.businessinsider.com/climate-change-causes-increased-international-piracy-fish-supply-2023-5>.

United Nations (2021). Security Council Fails to Adopt Resolution Integrating Climate-Related Security Risk into Conflict-Prevention Strategies: Speakers Disagree on Text, Appropriate Forum to Tackle Climate Change Issues. *Meetings Coverage: Security Council 8926th Meeting (Am)*. SC/14732 13 December 2021. Available at <https://press.un.org/en/2021/sc14732.doc.htm>.

United Nations Children’s Fund (UNICEF) (2020). Female Genital Mutilation in the Middle East and North Africa. Available at https://www.unicef.org/mena/media/7096/file/FGM%20MENA%20Draft%202020_6_High%20Res.pdf.

United Nations Department of Political and Peacebuilding Affairs (DPPA) and others (2020). Climate Security Mechanism Toolbox: Briefing Note. Available at https://dppa.un.org/sites/default/files/csm_toolbox-1-briefing_note.pdf.

United Nations Development Programme (UNDP) (2018). Climate Change Adaptation in the Arab States. Available at <https://www.undp.org/publications/climate-change-adaptation-arab-states>.

_____ (2022a). New threats to human security in the Anthropocene: Demanding greater solidarity. Available at <https://hdr.undp.org/system/files/documents/srhs2022pdf.pdf>.

_____ (2022b). Human Development Report 2021/22: Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World. Available at <https://hdr.undp.org/content/human-development-report-2021-22>.

United Nations Economic and Social Council (ECOSOC) (2018). Committee of Experts on Public Administration: report on the 17th session (23–27 April 2018). Economic and Social Council Official Records, 2018 Supplement No. 24. E/2018/44-E/C.16/2018/8. Available at <https://digitallibrary.un.org/record/1628165>.

United Nations Environment Programme (UNEP) (2016). Three in Four Jobs in the Global Workforce Depend on Water says UN on World Water Day. Available at <https://www.unep.org/news-and-stories/press-release/three-four-jobs-global-workforce-depend-water-says-un-world-water>. Cited in: ESCWA (2021). Water Scarcity High Level Event within the 13th Session of the Arab Ministerial Water Council 17 November 2021: Background paper for Session 1: Economic Impacts of Water Scarcity in the Arab Region. Available at https://www.unescwa.org/sites/default/files/event/materials/Economic%20Impacts%20of%20Water%20Scarcity-Briefing%20Note_UNESCWA.pdf.

_____ (2021). Adaptation Gap Report 2021: The gathering storm – Adapting to climate change in a post-pandemic world. Available at <https://www.unep.org/resources/adaptation-gap-report-2021>.

_____ (2022). Adaptation Gap Report 2022: Too Little, Too Slow – Climate adaptation failure puts world at risk. Available at <https://www.unep.org/resources/adaptation-gap-report-2022>.

United Nations General Assembly (2009). Climate change and its possible security implications: Report of the Secretary-General. A/64/350 (11 September 2009). Available at <https://digitallibrary.un.org/record/667264?ln=en>.

_____ (2012). Resolution 66/290. Follow-up to paragraph 143 on human security of the 2005 World Summit Outcome. A/RES/66/290 (10 September 2012). Available at <https://digitallibrary.un.org/record/686296?ln=en>.

_____ (2022). Violence against women and girls, its causes and consequences: Note by the Secretary-General. A/77/136 (11 July 2022). Available at <https://www.ohchr.org/en/documents/thematic-reports/a75144-violence-against-women-its-causes-and-consequences-note-secretary>.

United Nations Interagency Framework Team for Preventive Action (2012). Toolkit and guidance for preventing and managing land and natural resources conflict: Renewable Resources and Conflict. Available at https://www.un.org/en/land-natural-resources-conflict/pdfs/GN_Renew.pdf.

United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (2022a). Horn of Africa Drought: Regional Humanitarian Overview & Call to Action (Revised 21 September 2022). Available at https://reliefweb.int/attachments/57c76e00-f0a6-4a5f-9dd2-6ffb8b95af62/HOA_Drought_Regional_Humanitarian_Overview_%26_call_to_action_rev_September2022.pdf.

_____ (2022b). Humanitarian Update: Syrian Arab Republic. Issue 1, June 2022. <https://reliefweb.int/report/syrian-arab-republic/humanitarian-update-syrian-arab-republic-issue-1-june-2022>.

_____ (2022c). Sudan: Flood Response Update No. 02 (25 September 2022). Available at <https://reports.unocha.org/en/country/sudan/card/TjQEjK9aMe/>.

United Nations Office for Disaster Risk Reduction (UNDRR) (2021). Regional Assessment Report on Disaster Risk Reduction in the Arab Region. Available at <https://www.undrr.org/2021-regional-assessment-report-arab-states>.

United Nations Security Council Resolution 2242 (13 October 2015). S/RES/2242 (2015). Available at https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_res_2242.pdf.

Uppsala – Peace Research Institute Oslo (PRIO) and ESCWA (2021). Understanding the potential linkages between climate change and conflict in the Arab region. E/ESCWA/CL6.GCP/2021/TP.9. Available at <https://www.unescwa.org/sites/default/files/pubs/pdf/understanding-potential-linkages-climate-change-conflict-arab-region-english.pdf>.

World Bank (2011). World Development Report 2011: Conflict, Security, and Development. Available at <https://elibrary.worldbank.org/doi/abs/10.1596/978-0-8213-8439-8>.

_____ (2021). Safeguarding Sudan's Vulnerable: Creating Economic Opportunity in Times of Crisis. Available at <https://www.worldbank.org/en/news/feature/2021/05/04/safeguarding-sudan-s-vulnerable-creating-economic-opportunity-in-times-of-crisis>.

_____ (2022a). Iraq Country Climate and Development Report. CCDR Series. Available at <https://openknowledge.worldbank.org/handle/10986/38250>.

_____ (2022b). FY23 List of Fragile and Conflict-affected Situations. Available at <https://thedocs.worldbank.org/en/doc/69b1d088e3c48ebe2cdf451e30284f04-0090082022/original/FCSList-FY23.pdf>.

_____ (n.d.). Classification of Fragility and Conflict Situations for World Bank Group Engagement. Available at <https://thedocs.worldbank.org/en/doc/5599ce291ebc38c333de754bfe96988f-0090082022/original/Classification-of-Fragility-and-Conflict-Situations-web-FY23.pdf>.

World Food Programme (WFP) (2023). Somalia emergency. Available at <https://www.wfp.org/emergencies/somalia-emergency>.

World Health Organization (WHO) (2021). Violence Against Women Prevalence Estimates, 2018: Global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women. Available at <https://www.who.int/publications/i/item/9789240022256>.

Young, William and others (2014). Spillover from the conflict in Syria: an assessment of the factors that aid and impede the spread of violence. Rand Corporation. Available at https://www.rand.org/pubs/research_reports/RR609.html.

Databases

Armed Conflict Location & Event Data Project (ACLED) (n.d.). Available at www.acleddata.com. Accessed on 11 October 2022.

EM-DAT, CRED/UCLouvain (n.d.). Brussels, Belgium. Available at www.emdat.be. Accessed in February 2023.

Internal Displacement Monitoring Centre (IDMC), Global Internal Displacement Database. Available at <https://www.internal-displacement.org/database/displacement-data>. Accessed in November 2022.

International Monetary Fund (IMF), Global Debt Database (December 2022). Available at <https://www.imf.org/external/datamapper/datasets/GDD>. Accessed on 27 March 2023.

Notre Dame Global Adaptation Initiative (ND-GAIN). Last Updated: July 2022. Available at <https://gain.nd.edu/our-work/country-index/>. Accessed in April 2023.

Office for the Coordination of Humanitarian Affairs (OCHA), The Humanitarian Data Exchange. Available at <https://data.humdata.org/>. Accessed in October 2022.

Office of the United Nations High Commissioner for Refugees (UNHCR), Refugee Data Finder. Available at <https://www.unhcr.org/refugee-statistics/>. Accessed in November 2022.

United Nations Framework Convention on Climate Change (UNFCCC), Interactive map of countries with NAPs as of 08/05/2023. Available at <https://napcentral.org/submitted-naps>.

United Nations Population Fund (UNFPA), Global Population Dashboard 2023. Available at <https://www.unfpa.org/data/world-population-dashboard>.

Uppsala Conflict Data Program (UCDP), Georeferenced Event Dataset (GED) Global version 22.1. Available at <https://ucdp.uu.se/downloads/>.

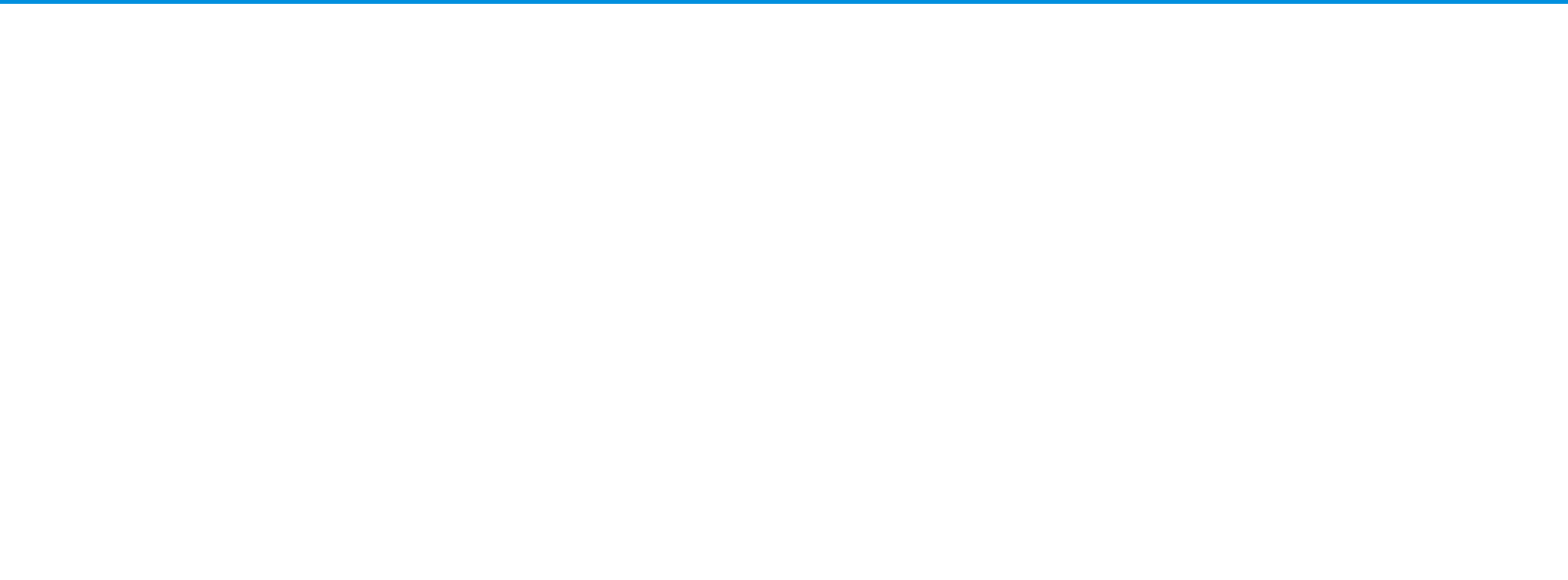
World Bank, World Development Indicators (WDI). Last Updated: 22 December 2022. Available at <https://databank.worldbank.org/source/world-development-indicators>. Accessed on 7 February 2023.

_____ Worldwide Governance Indicators (WGI). Last Updated: 23 September 2022. Available at <https://databank.worldbank.org/source/worldwide-governance-indicators/preview/on>. Accessed on 30 November 2022.

Endnotes

- 1 The Arab region is considered as comprising: Algeria, Bahrain, the Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, the State of Palestine, Qatar, Saudi Arabia, Somalia, the Sudan, the Syrian Arab Republic, Tunisia, the United Arab Emirates and Yemen.
- 2 United Nations, 2021.
- 3 Including: United Nations Framework Convention on Climate Change (UNFCCC) Lima Work Programme on Gender; the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW); the Convention on the Rights of Persons with Disabilities; and the Sendai Framework for Disaster Risk Reduction 2015–2030.
- 4 Security Council resolution 2242 (2015).
- 5 For further details on the linkages between climate change and conflict developed in the framework, see Uppsala-PRIO and the United Nations Economic and Social Commission for Western Asia (ESCWA), 2021.
- 6 United Nations General Assembly A/RES/66/290.
- 7 United Nations Development Programme (UNDP), 2022a; Buhaug and Von Uexkull, 2021.
- 8 United Nations Department of Political and Peacebuilding Affairs (UNDPPA) and others, 2020.
- 9 World Bank, 2011.
- 10 Intergovernmental Panel on Climate Change (IPCC), 2022a.
- 11 *Ibid.*, p. 1047.
- 12 Organisation for Economic Co-operation and Development (OECD), 2022; World Bank, n.d.
- 13 For the World Bank definition, see World Bank, n.d.; for the OECD definition, see OECD, 2022.
- 14 Peace Research Institute Oslo (PRIO), 2019.
- 15 UNDP, 2022a.
- 16 ESCWA, 2023.
- 17 Authors' calculations based on UCDP GED.
- 18 ESCWA, 2021a.
- 19 ESCWA, 2022c.
- 20 A/77/136, p. 7.
- 21 World Health Organization (WHO), 2018.
- 22 ESCWA, 2020.
- 23 United Nations International Children's Emergency Fund (UNICEF), 2020.
- 24 ESCWA, 2022c.
- 25 UNDP, 2022b.
- 26 Norris, 2006.
- 27 ESCWA, 2022b.
- 28 ESCWA, 2018, p. 8.
- 29 Authors' calculations based on IMF Global Debt Database (December 2022). Accessed on 27 March 2023.
- 30 ESCWA and University of St. Andrews, 2020.
- 31 Hanna and others, 2021.
- 32 ESCWA, 2022b.
- 33 Hanna and others, 2021.
- 34 ESCWA and University of St. Andrews, 2020.
- 35 ESCWA, 2022b.
- 36 EM-DAT, CRED/UCLouvain.
- 37 IPCC, 2021.
- 38 United Nations Office for Disaster Risk Reduction (UNDRR), 2021.
- 39 Authors' calculations based on data from EM-DAT.
- 40 Rentschler and others, 2022a; Rentschler and others, 2022b.
- 41 United Nations Office for the Coordination of Humanitarian Affairs (OCHA), 2022c.
- 42 ESCWA and others, 2017.
- 43 ESCWA and Arab Countries Water Utilities Association (ACWUA), 2017.
- 44 Authors' calculations based on data retrieved from EM-DAT.
- 45 IPCC, 2022b. Additionally, one may note that the inverse is possible: inappropriate or badly implemented adaptation policies may lead to maladaptation and increased vulnerabilities.
- 46 International Labour Organization (ILO), 2018.
- 47 United Nations Environment Programme (UNEP), 2022.
- 48 Based on the UNFCCC Interactive map of countries with NAPs.
- 49 UNDP, 2018.
- 50 IPCC, 2022c.
- 51 UNDP, 2022a.
- 52 International Crisis Group (n.d.).
- 53 UNEP, 2021.
- 54 ESCWA, 2022a.
- 55 *Ibid.*
- 56 Collier and Hoeffler, 2004; Grossman, 1991.

- 57** Gurr, 1970; Koos, 2018.
- 58** Smith, 2022, p. 8.
- 59** Ibid., p. 15.
- 60** Authors' estimation, based on data retrieved from World Bank's WDI.
- 61** Gadain, 2022.
- 62** World Bank, 2022a.
- 63** Food and Agriculture Organization (FAO), n.d.a.
- 64** Salih and others, 2020.
- 65** NUPI and SIPRI, 2022a.
- 66** IRIN News, 2009.
- 67** NRC, 2021.
- 68** Boone, 2017; Smidt and Theisen, 2018.
- 69** Reuveny, 2007.
- 70** Ibid.
- 71** Seter, Theisen, and Schilling, 2018.
- 72** Boone, 2017.
- 73** Data retrieved from national agricultural censuses: Jordan (1997), Morocco (1996) and Tunisia (2004–2005). See FAO, n.d.b.
- 74** GBV AoR Helpdesk, 2021.
- 75** ESCWA, 2021b. Water scarcity is defined as having less than 1,000 m³ of renewable water resources available annually per capita. The 19 States experiencing water stress are: Saudi Arabia, the State of Palestine, Jordan, Kuwait, Bahrain, Qatar, the United Arab Emirates, Oman, Yemen, Libya, Tunisia, Algeria, Djibouti, Lebanon, the Syrian Arab Republic, Egypt, the Sudan, Somalia and Morocco.
- 76** UNEP, 2016.
- 77** IPC, 2022.
- 78** Al-Zubari and others, 2017.
- 79** ESCWA, 2019.
- 80** OECD and FAO, 2018.
- 81** NUPI and SIPRI, 2022a.
- 82** International Committee of the Red Cross (ICRC), 2021.
- 83** NUPI and SIPRI, 2022a.
- 84** Bezner Kerr and others, 2022.
- 85** UNDP, 2022a; FAO, n.d.a.
- 86** Clement and others, 2021.
- 87** Heslin, 2021; Maystadt and others, 2014; Rudolfson, 2020.
- 88** Heslin, 2021; Rudolfson, 2020.
- 89** ESCWA and FAO, 2017.
- 90** OCHA, 2022b.
- 91** World Food Programme (WFP), 2023.
- 92** World Bank, 2021; IPC, 2021.
- 93** ESCWA and the Arab Center for the Studies of Arid Zones and Dry lands (ACSAD), 2021; National Aeronautics and Space Administration (NASA), 2016.
- 94** UNDP, 2022a; OCHA, 2022a.
- 95** Clement and others, 2021; Young and others, 2014; Koubi and others, 2018.
- 96** Koubi and others, 2018.
- 97** Smith, 2022, p. 9.
- 98** ESCWA and others, 2021.
- 99** Global Migration Data Portal, n.d.
- 100** NUPI and SIPRI, 2022b.
- 101** International Organization for Migration (IOM) Iraq, 2022.
- 102** NUPI and SIPRI, 2022b.
- 103** More than 3/4 of people at risk of displacement are in urban or peri-urban areas. See Internal Displacement Monitoring Centre (IDMC), 2021.
- 104** Clement and others, 2021.
- 105** Ibid.
- 106** United Nations Economic and Social Council (ECOSOC), 2018.
- 107** Nadin and Roberts, 2018.
- 108** ESCWA and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), 2013.



The Arab region is facing the dual challenges of climate change and conflict. Ongoing conflicts and fragility exacerbate environmental degradation, limit resources for climate action and increase vulnerability to climate impacts. Climate impacts, on the other hand, can affect known drivers of insecurity and conflict such as loss of livelihoods and income, food insecurity, competition for resources, and migration. These compounding challenges could lead to a vicious cycle of climate vulnerability, insecurity and conflict unless addressed. Responding to such challenges is thus an imperative, but it is also a window of opportunity to promote peace and prosperity across the region. To this end, this report draws on the latest data with respect to fragility, climate change projections and security risks in the Arab region in order to provide a regional overview of climate security risks. This analysis is used to inform recommendations for policymakers, multilateral agencies and relevant stakeholders to mitigate climate security risks in the region. The report concludes that attention must be paid to inequities, the experiences of different population groups and the specificities of local contexts. The quality of governance and capacity of institutions play a key role in strengthening resilience and moderating the risk of tensions and insecurity. Importantly, integrated and cooperative approaches are vital to effectively address the nexus between climate change, peace and security.

