RESEARCH REPORT

Climate Justice

Bridging the gaps between governments and civil society

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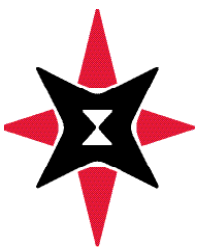
for the American Friends Service Committee



American Friends Service Committee

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List of Abbreviations and Acronyms

AFSC	American Friends Service Committee
AR4	Fourth Assessment Report
DEP	Dialogue Exchange Program
GHG	Greenhouse Gases
IPCC	Intergovernmental Panel on Climate Change
RCP	Representative Concentration Pathways
SDG	Sustainable Development Goal
SLR	Sea Level Rise
WASH	Water and Sanitation Hygiene

Executive Summary

Climate change is a driver of violence, socioeconomic disruption, and displacement, intersecting with conflict and injustice dynamics. As such, the American Friends Service Committee (AFSC) has identified climate justice as a priority issue in the Arab region, one of the regions most heavily affected by the climate crisis. The following study aims to present a comprehensive literature review on climate justice issues in the Arab region with a focus on eight selected countries: Algeria, Egypt, Iraq, Jordan, Lebanon, Morocco, Palestine, and Tunisia. One-on-one meetings were held with key experts from the selected countries to support the analysis and provide concrete feedback on climate justice priorities, major blockers to climate justice, and the recommendations needed to alleviate the gap between civil society organizations (CSOs) and governments on climate justice. Both the literature review and key expert interviews supported the implementation of the Dialogue and Exchange Program (DEP) titled "Bridging the gap between civil societies and governments" that was held in Amman, Jordan between March 6 and 9, 2023. This DEP aimed at exploring local civil society needs and lay the groundwork for AFSC's Middle East Regional Office to provide future support for affected communities by building resilience and promoting sustainability in the Arab region.

The study is divided into eight sections as follows:

- **Section 1** provides an overview of climate change and its correlation with the Sustainable Development Goals (SDGs). It also establishes the organization of the study.
- **Section 2** introduces the concept of climate justice and presents various aspects of climate injustice between and within countries. It highlights the fact that areas contributing the least to emissions are prone to being hit the hardest by climate change. In addition, this section discusses the effect of climate change on vulnerable groups that may be further pushed into the vulnerability zone.
- **Section 3** zooms in on the application of climate justice in the Arab region, with a focus on the eight selected countries. The section first describes climate change projections in the region such as changes in average temperatures, precipitation patterns, and sea-level rise. In addition, major issues that define climate justice or inhibit its achievement are highlighted as follows: (1) multidimensional poverty and economic inequality; (2) inadequate water supply and sanitation; (3) food insecurity and loss of livelihoods; 4) conflicts, political instability, and migration; and (5) generational inequality: youth, children, and elderly.
- **Section 4** summarizes strategies and action plans developed by governments focusing on climate change, water, agriculture, as well as other multi-sector strategies in each of the eight selected countries. The mapping of national strategies indicates that governments have not incorporated climate justice within their strategies and plans.
- **Section 5** lists key climate justice stakeholders in the eight selected countries. Five major groups of stakeholders in the selected countries were identified as follows: government/public sector, research/academia, civil society, private sector, and development groups.
- **Section 6** presents the findings of the one-on-one DEP meetings with key regional and national experts and activists. These meetings focused on the areas of climate and environmental justice, human rights, peace and conflict, food sovereignty, gender equality,

and youth empowerment. Experts provided their own definition of climate justice and identified the main issues under climate justice that they believe are top priority for the region. In addition, the experts also described the major blockers to climate justice, and the recommendations needed to alleviate the gap between CSOs and governments on climate justice. The section also provides an overview of challenges facing CSOs in the Arab region and opportunities that can bridge the gap between civil societies and governments on climate justice issues.

- **Section 7** summarizes the results of the DEP that included participants and activists from different backgrounds representing countries of the region, including Egypt, Jordan, Lebanon, Morocco, Palestine, and Tunisia. The DEP facilitated the following: (1) reframing of climate justice principles based on regional context, (2) identifying common challenges faced by CSOs and (3) presenting opportunities for bridging the gap between CSOs and governments. Participants also referenced their experiences in the field to highlight priority actions needed to reinforce climate justice and to distinguish between active and powerful stakeholders in the area. Most importantly, it allowed participants the chance to connect and discuss collaboration and partnership opportunities.
- **Section 8** identifies opportunities of work under climate justice. These opportunities are based on the literature and key expert discussions using goals identified in the AFSC Strategic Plan (2020-2030), which include: (1) just and sustainable peace, (2) just economies and (3) just response to forced displacement and migration. The research undertaken and recommendations provided by the DEP were used to plan the way forward and identify the best practices for effective change in the Arab region and the opportunities available to bridge the gap between national governments and CSOs.

1 Introduction

The Intergovernmental Panel on Climate Change (IPCC) has indicated in its latest report (IPCC, 2022) that the adverse impacts of climate change on human systems, including water security and food production, health and well-being, and cities, settlements and infrastructure, are already having a serious impact. The UN's 2030 Agenda for Sustainable Development identifies climate change as one of the greatest challenges currently facing the world. The adverse impacts of climate change undermine the ability of nations to achieve the Sustainable Development Goals (SDGs). This is concerning as, due to the interlinked nature of the different SDGs, climate change will therefore affect the achievability of goals relating to material and physical well-being. This includes such goals as poverty eradication, employment, prosperity and welfare, health, and peace and justice (Fuso Nerini et al., 2019).
Box 1-1 provides examples of interlinkages between climate change and several SDGs.

Box 1-1: Impacts of Climate Change on the Achievement of the SDGs

Climate change poses challenges and hampers efforts to achieve justice and equality across the world. There is evidence that climate change affects the most poor, both within and between countries, aggravating inequality and hindering poverty reduction (SDG 1: No Poverty targets 1.1–1.5, SDG 10: Reduced Inequalities targets 10.1–10.2). In addition, the stresses on resources including on water, agricultural crops, or other biotic resources that is caused by climate change could exacerbate competition and conflict, thus threatening the peace and inclusivity of societies, and undermining social justice (SDG 12: Responsible Consumption and Production target 12.1 and SDG 16: Peace, Justice and Strong Institutions target 16.1). It is also proven that climate change related impacts and disasters are considered key drivers of human displacement and mass migrations (SDG 8: Decent Work and Economic Growth target 8.8 and SDG 10: Reduced Inequalities targets 10.7). Climate change can also worsen gender inequalities, where girls are the first to be removed from schooling in response to drought or other climate-related shocks (SDG 4: Quality Education target 4.1–4.2, 4.5). In addition, climate-related disasters can lead to increased vulnerability of girls and women to violence in cases where disasters cause a shift in family power relations or lead to girls and women being vulnerably housed. Women's unfair access to economic resources can also intensify their vulnerability to negative climate impacts (SDG 5: Gender Equality targets 5.1–5.2, 5.4–5.5, 5.a–5.c).

Climate change is a driver of violence, socioeconomic disruption, and displacement, intersecting with conflict and injustice dynamics. The American Friends Service Committee (AFSC) is implementing the Dialogue and Exchange Program (DEP) to explore local civil society needs and lay the groundwork for the AFSC Middle East Regional Office to provide future support for affected communities through building resilience and promoting sustainability. This work will strengthen an intersectional movement for sustainable peace, economic justice, and climate justice for communities in the region. AFSC aims to do this by bringing together actors concerned about the consequences of climate change and seeking to bring these issues to

the forefront of civil society and governmental priorities in the Arab region[1]. AFSC's approach to dialogue and exchange is rooted in the belief that solutions can be found within a group's history, knowledge, culture, and resources. With that in mind, AFSC provides a safe space for discussion and learning while bringing together grassroots organizers, youth leaders, women representatives, and other active CSOs. For this DEP, "Bridging the gap between civil societies and governments", AFSC has identified climate justice as a priority issue for discussion in the Arab region and especially in the eight selected countries.

The current assessment aims at informing work before the DEP through a comprehensive literature review on climate justice issues in the Arab region with a focus on eight selected countries: ***Algeria, Egypt, Iraq, Jordan, Lebanon, Morocco, Palestine, and Tunisia.*** In addition, one-on-one meetings were held with key experts in the selected countries and the Arab region. These experts offered analytic support and provide concrete feedback on climate justice priorities, major blockers to climate justice, and the recommendations needed to alleviate the gap between CSOs and governments on climate justice.

Section 2 of this report provides a global overview of the climate justice concept. Section 3 defines vulnerability to climate change as well as highlights vulnerable areas and communities in the Arab region. Climate change projections in the region are presented, after which a thorough literature review is provided regarding the aspects of climate injustice in the selected countries. Sections 4 and 5 map relevant strategies and stakeholders related to climate justice. Section 6 provides an overview of opportunities that can bridge the gap between civil societies and governments on climate justice issues. This section incorporates findings from meetings conducted with key experts of the identified countries. Section 7 provides a summary of the outputs of the DEP, which was held in Amman, Jordan between March 6 and 9, 2023. It was informed by the current analysis and key expert discussion. Finally, Section 8 identifies the way forward. This section examines best practices for effective change in the Arab region and opportunities to bridge the gap between national governments and CSOs.

[1] The Arab region includes the 22 countries: Algeria, Bahrain, the Comoros Islands, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Mauritania, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, and Yemen.

2 Climate Justice Concept

It is undeniable that our world is interconnected; what happens in one place has impacts on the other. A complex relationship and feedback system exists between climate change impacts, mitigation, and adaptation. The lifestyles and actions of some can determine the environmental conditions, livelihood, and wellbeing of others. The unequal contribution and distribution of greenhouse gas (GHG) emissions is accompanied by unequal distribution of the associated climate risks. Areas that contribute the least to emissions are prone to be hit the hardest by climate change. From this issue, the concept of climate justice arises.

Addressing climate change issues raises questions related to justice and equity between and within nations and generations. Applying a rights-based approach for climate change adaptation and mitigation highlights the principles of universality and non-discrimination. This then safeguards equity for all, especially the most vulnerable, thus serving as a catalyst to achieve a just and sustainable future (OHCHR, n.d.).

The UN Special Rapporteur on extreme poverty and human rights recently warned about a future of climate apartheid. This would involve the wealthy paying to shield themselves from the detrimental impacts of climate change while those living in poverty suffer immensely (UN General Assembly, 2019). In fact, the world's most vulnerable are paying the price of a climate crisis they are least responsible for creating. Simultaneously, the main contributors to the climate crisis have reaped the economic benefits.

Data analysis for the period 1990-2019 highlights global carbon inequality. This research indicates that the wealthiest 1% emitted 23% of the total emissions whereas the most impoverished 50% emitted just 16% of all emissions (Chancel, 2022). Another study referred to the process of atmospheric colonization through demonstrating that as of 2015, the Global North (United States, Canada, Europe, Israel, Australia, New Zealand, and Japan) produced 92% of excess emissions whereas the Global South was responsible for 8% of excess emissions (Hickel, 2020). Accordingly, the Global North and those who have historically profited from the status quo, have a responsibility to mitigate the harms of climate change.

The IPCC indicated that "people who are socially, economically, culturally, politically, institutionally, or otherwise marginalized are especially vulnerable to climate change". Although at risk, these people also have the potential to contribute to climate solutions when empowered to do so (OHCHR, n.d.). Accordingly, climate justice begins by recognizing that countries, communities, and people are affected by climate change in various ways and levels.

Those who are not equipped with adaptation mechanisms to respond to the detrimental impacts of change are the first to suffer from its current and projected impacts. This is despite the fact that they are neither major emitters nor central to the political discussions/decisions on climate mitigation and adaptation. Often, communities experiencing climate injustice are also affected by conflicts, political instability, low levels of economic development, and human rights abuses (AFSC, 2022). Climate justice issues also intersect with gender, age, race,

ethnicity, and disability. This creates greater vulnerability to climate impacts. Vulnerable groups include children and youth, the elderly, local and rural communities, refugees and those displaced by natural disasters, people with limited economic capacities, and women and girls. With this in mind, climate justice shifts the focus from an economic perspective to an ethical and political view. This shift safeguards the human rights of those most affected by climate change while highlighting the importance of equality, environmental health and sustainable development.

The IPCCC has for the first time included the term "colonialism" in its sixth report's summary. This summary states that colonialism has increased the vulnerability of specific people and places to the effects of climate change. In fact, AFSC has identified colonialism as a driver of the climate crisis. Unjust political and economic systems have rendered the least contributing countries to GHG to be the most affected by climate change. As such, the antithesis of colonialism means centering climate change solutions based on the equitable distribution of resources and decentralization of power. Furthermore, AFSC describes the use of a justice lens to address climate change. This centers the most affected in the decision-making processes to identify solutions, thus emphasizing self-determination and sovereignty. AFSC has also indicated that the call for climate justice means calling for demilitarization. Demilitarization is another opportunity to make different investments and fund solutions to climate change as well as systems that enable sustainable peace, open civic space, and prioritize human dignity and rights. Climate justice also reinforces the need for accountability and responsibility (AFSC, 2022). In that regard, AFSC's work on climate justice has involved:

- Promoting food sovereignty and sustainable economy projects led by local partners and indigenous communities. Projects have included training, dialogues, and the construction of community greenhouses.
- Advocacy alongside land-based people, rebuilding appropriate scaled food systems that are in harmony with nature and feeding local communities. This includes protecting access to land and water, supporting small-scale, sustainable approaches to growing food, and significantly increasing access to healthy food.
- Supporting redistribution of resources through debt cancellation advocacy for countries where a major roadblock to building peace and security is national debt owed to wealthier nations.

3 Climate Justice in the Arab Region

The Arab region faces a plethora of challenges. These include poverty, loss of livelihoods, unemployment, severe water scarcity, degradation of natural resources and desertification, rising population and unsustainable consumption patterns, food insecurity, gender inequality, inequitable social conditions, political instability, conflicts, and displacement[2]. With these extant challenges, climate change is expected to further worsen conditions. Climate change is often referred to as a "threat multiplier" (Werrell and Femia, 2015), exerting more pressure on systems and reinforcing pre-existing threats. Climate change is projected to have a catalytic impact on human rights through threatening and violating the rights to life, health, food, water and sanitation, a healthy environment, an adequate standard of living, housing, property, self-determination, development and culture (UN, 2019).

Although the Arab region contributes less than 5% of world GHG emissions, it is extremely vulnerable to the effects of climate change (AFED, 2009). When addressing the vulnerability of the Arab region to climate change, the IPCC definition is used as proposed in its Fourth Assessment Report (AR4). Identifying vulnerability requires incorporating three components: exposure, sensitivity, and adaptive capacity (Figure 3-6) (AFED, 2009).

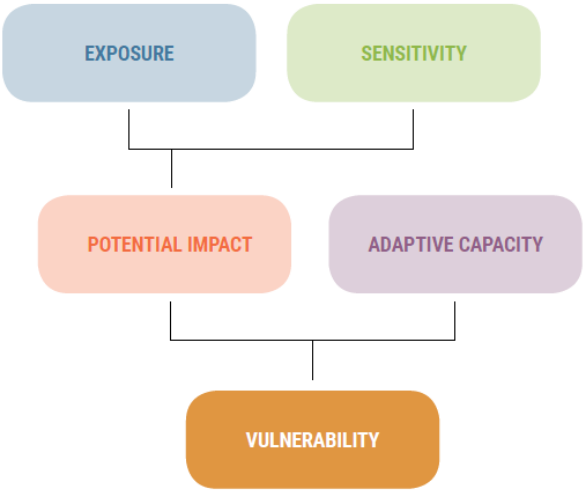


Figure 3-1: Components of Vulnerability Based on IPCC AR4 Approach

Within this context, exposure refers to the quantifiable indicators of climate change, such as changes in temperature and precipitation. Sensitivity describes the natural and physical environment, as well as differing population groups that are most susceptible to climate change. Coupling both exposure and sensitivity describes the potential impact. Countering potential impact is the adaptive capacity, which describes the ability to cope, mitigate and adapt to climate change. The net difference between potential impact and adaptive capacity defines vulnerability.

[2] Annex 1 provides snapshots of the current status of the selected countries in terms of knowledge and awareness, economic resources, access to water and food, infrastructure, and stability.

Recent work conducted by ESCWA identified vulnerability areas in the Arab 5egion based on sector and using different climate change projection scenarios (ESCWA, 2017a). This analysis has identified the following points:

- The lower Nile River Basin towards the Mediterranean exhibits the highest population density in the Arab region, thus projecting high sensitivity.
- Although the Euphrates and Tigris rivers face challenges due to demographic pressures, hydro-infrastructure developments, and water quality degradation, socioeconomic vulnerability to climate change is found to be moderate relative to other parts of the region.
- For the agricultural sector, increasing vulnerability is more evident in the Maghreb due to decreasing rainfall and runoff. Very high vulnerability regarding agricultural water availability could mean the collapse of the sector unless strong adaptive capacity measures are taken for its survival.
- For the infrastructure and human settlements sector, vulnerability is expected to increase in the region, particularly in urban areas, if there is insufficient improvement in poverty reduction, disaster preparedness, and building standards.

This section presents climate change projections in the Arab region to highlight the exposure component of vulnerability. This section then presents the various aspects of climate injustice present in the region and within countries. This is done through highlighting the fact that "Populations with highest vulnerability include individuals and communities living in areas of highest exposure to climate change and that lack the needed technical, institutional, and financial resources to adapt to changes or cope with shocks related to climate change" (ESCWA, 2017a). These include rural communities, agriculture dependent households, low-income households, women, youth, children, the elderly, persons with disabilities, refugees and internally displaced persons, as well as other societal groups that may be further pushed into the vulnerability zone.

3.1 Climate Change Projections

Climate in the Arab region is predominantly semi-arid to arid with generally dry and hot summers and mild winters (Donat et al., 2014). It is affected by oceanic forcing related to heat, humidity and winds coming from surrounding oceans (Almazroui, 2019). The annual total precipitation exhibits significant spatial and temporal variability and most land areas receive less than 300 mm of annual precipitation (Waha et al., 2017). Over the Arabian Peninsula, spatial variability of precipitation is high due to the Mediterranean climate, Indian monsoon, and orographic variations (Bucchignani et al., 2016). Precipitation exceeds 900 mm in temperate zones, such as the western part of Jordan, Lebanon, and Palestine. Annual mean temperature ranges from less than 10 °C to more than 30 °C with the highest values located over the desert lands, characterized by very high daily fluctuations and hot summers (reaching 40 °C to more than 50 °C). The temperature is moderated by elevation and by proximity to the sea (ESCWA, 2017a).

The Arab region has had its share of climate change related challenges and is considered one of the most climate-vulnerable regions. Increased average temperatures, changes in precipitation

patterns, sea-level rise, and changes in water supply are being exacerbated in a region that already suffers from aridity, recurrent drought, and water scarcity. Climate projections for the region are based on the outcomes of the Arab Climate Change Assessment Report that presents regional climate modelling and regional hydrological modelling projections for mid-century (2046-2065) and end-century (2081-2100) periods, based on Representative Concentration Pathways (RCP) adopted by the IPCC:

- RCP 4.5 – generally describes a moderate-emissions scenario.
- RCP 8.5 – generally describes a high-emissions or "business as usual" scenario.

The main conclusions of the report are as follows (ESCWA, 2017a):

- The average mean change in temperature for RCP 4.5 shows an increase of 1.2°C to 1.9°C at mid-century and 1.5°C to 2.3°C by end-century. For RCP 8.5, temperature increases from 1.7°C to 2.6°C for mid-century and 3.2°C to 4.8°C towards end-century (Figure 3-4). The upper Nile River Valley is projected to experience a more significant increase in mean temperature between 1.5°C and 2.0°C at mid-century and between 1.8°C and 3.6°C by end-century, under RCP 4.5 and RCP 8.5, respectively.
- The change in mean temperature for the Tigris and the Euphrates headwaters is also notable with a projected increasing trend towards end-century. Mean temperature changes for the RCP 8.5 are projected to reach an increase of 4.5°C and 4.8°C for the Tigris headwaters and the Euphrates headwaters, respectively.
- By the end of the century, both scenarios project a reduction of the average annual precipitation reaching 90–120 mm/year in the coastal areas (Figure 3-5). This is mainly projected around the Atlas Mountains and in the upper Euphrates and Tigris basin.
- The projections show that the number of very hot days (over 40°C) will increase significantly across the Arab region until the end of the century. The number of consecutive dry days will increase to a more moderate extent.
- The projections for the maximum length of dry spells suggest trends towards drier conditions specifically for the Mediterranean, as well as the western and northern parts of the Arabian Peninsula, by the end of the century.

At the national level, climate change projections also indicate severe changes in temperature and precipitation. Annex 1 provides a summary of national climate change projections for the selected countries.

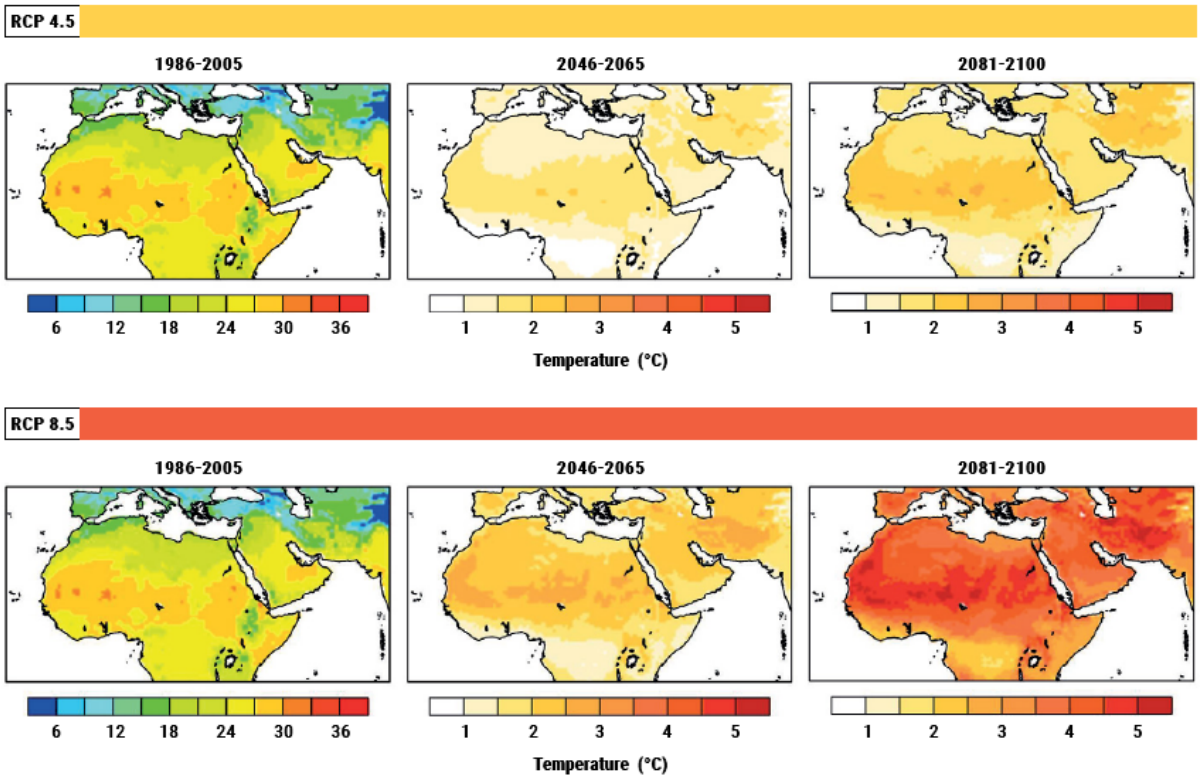


Figure 3-2: Mean Change in Annual Temperature for Mid- and End-Century for RCP 4.5 and RCP 8.5 Projections Compared to Reference Period

Source: ESCWA, 2017a

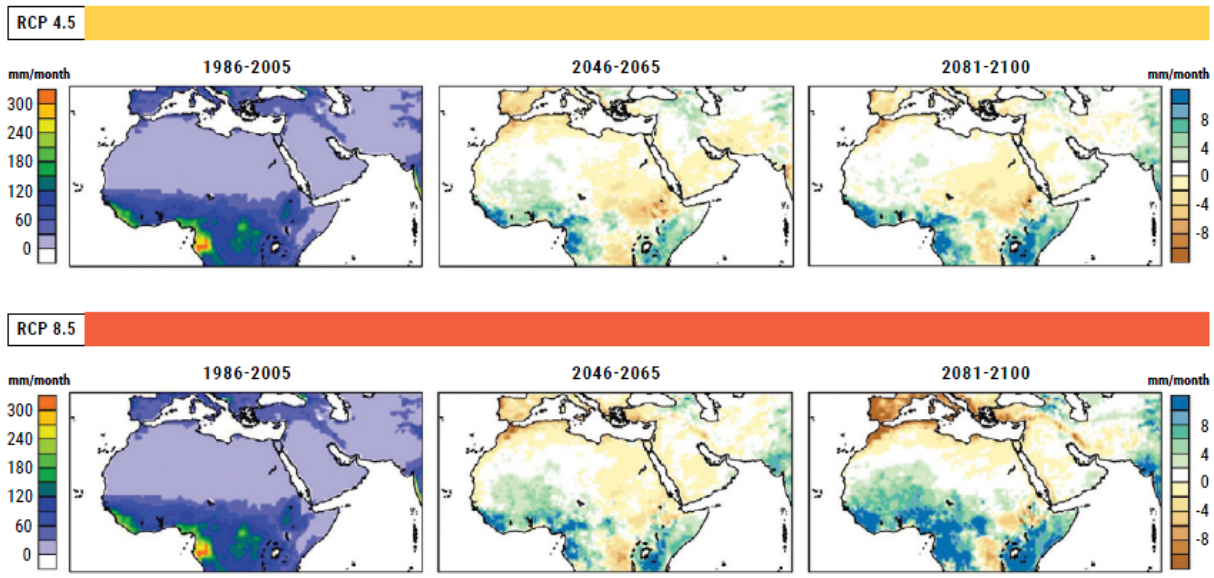


Figure 3-3: Mean Change in Annual Precipitation for Mid- and End-Century for RCP 4.5 and RCP 8.5 Projections Compared to Reference Period

Source: ESCWA, 2017a

3.2 Faces of Climate Injustice

Climate change impacts in the Arab region have disproportionately affected the most vulnerable populations. These populations lack the means to cope with changes, have less capacity to recover, and are usually more exposed. The Arab region is also plagued by a multitude of challenges that have made it harder to recuperate from the impacts of climate change and have prolonged the road to climate justice.

Currently, there is a lack of a common set of principles or rules to identify whether climate justice is achieved or not. Therefore, this section zooms in on the application of climate justice in the Arab region. There is a focus on the eight selected countries, through highlighting major issues that define climate justice or inhibit its achievement, in other words, the "Faces of Climate Injustice". These include the following dimensions: multidimensional poverty and economic inequality; inadequate water supply and sanitation; food insecurity and loss of livelihoods; conflicts, political instability, and migration; and generational inequality (youth children and elderly).

It is crucial to point out that the climate crisis is not "gender neutral". Women and girls experience the greatest impacts of climate change. This amplifies existing gender inequalities in employment, education, access to information and finances, and ownership rights (UN Women, 2022). As such, this analysis highlights the gender divide under climate justice within each dimension.

3.2.1 Multi-dimensional Poverty and Economic Inequality

Globally, climate change has increased economic inequality between the Global North and Global South by 25% since 1960 (US Global Leadership Coalition, 2021). Economic inequality is built into the current global capitalism model and in the Arab region it is prominently visible. In 2020, 58% of national income in the Arab region was accrued by the top 10% of the population, while only 8% was accumulated by the bottom 50% (ESCWA, 2022). Economic inequality thus deepens the gap regarding ability to adapt and mitigate climate change impacts and recuperate climate induced loss and damage.

Climate change could push an additional 100 million people in the Arab region below the poverty line by 2030 (US Global Leadership Coalition, 2021). Poverty is defined internationally using a monetary value of $1.90 as income per day. A more recent definition of the term includes the lived experiences of people and the multiple deprivations they face (UNDP, 2020a). For instance, the UNDP global multidimensional poverty index examines an individual's deprivations across 10 indicators in three equally weighted dimensions. These dimensions include health (nutrition, child mortality), education (years of schooling, school attendance), and standard of living (cooking fuel, sanitation, drinking water, electricity, housing, assets). Individuals are counted as multidimensionally poor if they are deprived in one third or more of the 10 indicators (UNDP, 2020a).

Individuals identified as multidimensionally poor suffer the most from climate change impacts. This is often because these individuals are highly dependent on natural resources and ecosystem services for their livelihood, employment and well-being. As such, the degradation of the natural environment puts their livelihood further at risk. Impacted individuals can face a lack of clean water and sanitation, sufficient nutrition, and housing of acceptable quality (UNDP, 2020a).

In addition, individuals experiencing poverty are more exposed to climate-related disasters such as floods and droughts and they do not have the financial capacities to recover. Most often, they live in flood-prone areas and poorly built housing and have limited access to sanitary infrastructure. Furthermore, they have limited to no access to energy sources and struggle to preserve food and access the internet. They have limited access to adequate healthcare services and are highly impacted by increasing temperatures that exacerbate the spread of vector-borne diseases, such as malaria, yellow fever, and dengue fever.

For example, informal workers, such as street vendors, are highly impacted by heat waves. These can cause health problems and even death. Similarly, the rural poor suffer from inadequate housing and infrastructure. Their livelihoods mainly rely on water for agriculture, which is highly impacted by climate change.

Figure 3-4 shows the percentage of multidimensionally poor individuals in the Arab region[3]. We can see a significant difference exists between rural and urban areas, wherein 25.8% of the rural population are multidimensionally poor compared to 5.8% in urban areas. It is estimated that 7% of the Arab population lives in severe multidimensional poverty and 9.4% are vulnerable to multidimensional poverty (UNDP, 2020b). The Arab region has the highest percentage of multidimensionally poor individuals living in households in which no female is educated (70.5%) and the highest percentage living In households in which at least one male is educated but no female is (21%) (UNDP/OPHI, 2021). Multidimensional child poverty is also witnessed where close to half of all children[4] suffer from moderate poverty (UNDP, 2020b).

[3] Based on data from 11 Arab countries: Algeria, Egypt, Iraq, Jordan, Mauritania, Morocco, Palestine, Sudan, Syria, Tunisia, Yemen

[4] In the 11 countries considered in the study

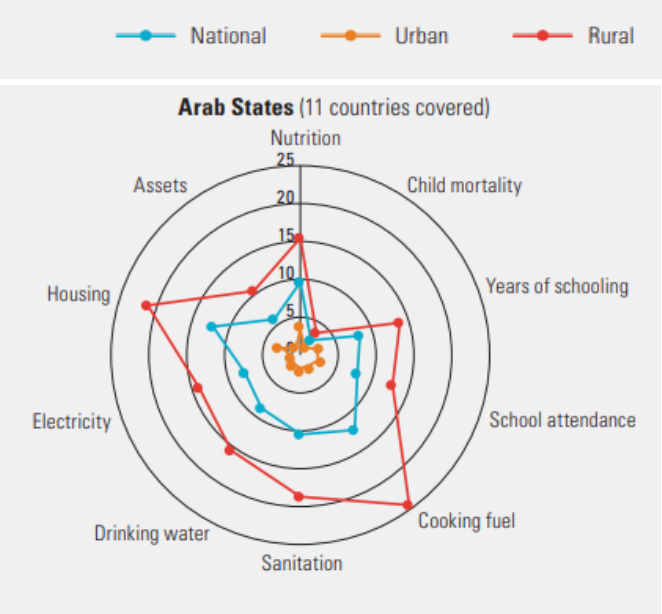


Figure 3-4: Percentage of Multidimensionally Poor Individuals in Arab States by Indicator and Setting

Source: UNDP, 2020a

Table 3-1 provides a summary of multidimensional poverty in the selected eight countries and shows disparities between areas. A country's economic crisis challenges all sectors and increases the vulnerability of people to climate change. For example, the Lebanese economic crisis has generated heavy water costs for households. According to UNICEF's estimates, the average cost of 1,000 L of trucked water increased by six-fold between 2019 and 2022. Families who relied on bottled water had to pay 3 to 5 times more than a year earlier. In fact, water tariffs currently represent 3% of the minimum wage and allowances (UNICEF, 2022). This has led to a continuous deterioration in terms of the ability of Lebanese households to access food, water, and other basic needs. More than four million people, including one million refugees, are at immediate risk of losing access to safe water in Lebanon (UNICEF/WHO, 2016).

In Iraq, the most recent poverty measurement data dates back to 2012, which is not representative of the current situation (ESCWA, 2018a). Iraq has since gone through a series of crises including war, displacement, climate crises, unemployment, and disruption to education, as well as the COVID-19 pandemic. In 2022, approximately 2.5 million people in Iraq still required humanitarian assistance due to difficulties associated with reintegrating into their communities.

About half of Iraq's population can be regarded as living in multi-dimensional poverty. Most children in Iraq suffer from at least one form of poverty deprivation. Women are more likely to be multi-dimensionally deprived than men, which is amplified by factors such as ethno-sectarian belonging, age, disability, beliefs, and perceived affiliations (MDPA, 2022).

In Algeria, Egypt, and Jordan inequality in multi-dimensional poverty between the highest and lowest wealth quintiles is sharp. This suggests a big gap in access to resources and capabilities between households (ESCWA, 2018b).

Table 3-1: Country Profile on Multi-dimensional Poverty

Country	Indicator	Description
Egypt (ESCWA, 2018c)	Acute poverty (%)	3
	Poverty (%)	27.2
	Most influential indicators	Education
	Vulnerability	22.6% vulnerable to falling into poverty and 6.8% vulnerable to falling into acute poverty.
	Geographic areas disparity	Rural Upper Egypt region has noticeably greater levels of poverty, particularly in floor/roof, sanitation, years of schooling, and overcrowding.
	Economic inequality	The poorest quintile of households is 22.6 times more likely to be acutely poor than the top quintile.
Algeria (ESCWA, 2017b)	Acute poverty (%)	0.62
	Poverty (%)	24
	Most influential indicators	Years of schooling, followed by overcrowding and assets.
	Vulnerability	35.7% vulnerable to falling into poverty and 4.2% vulnerable to falling into acute poverty.
	Geographic areas disparity	Significant rural and urban disparities
	Economic inequality	Households in the bottom quintile are 7.2 times more to be poor than the top quintile.
Iraq (ESCWA, 2018a)	Acute poverty (%)	6.5
	Poverty (%)	45.5
	Most influential indicators	Education
	Vulnerability	27.6% vulnerable to falling into poverty and 15.6% vulnerable to falling into acute poverty.
	Geographic areas disparity	Urban and rural regions, as well as among governorates.
Jordan (ESCWA, 2018b)	Acute poverty (%)	0.3
	Poverty (%)	11.7
	Most influential indicators	Lack of asset, overcrowding, education, and nutrition

Country	Indicator	Description
	Vulnerability	27.8% vulnerable to falling into poverty, and 2.2% vulnerable to falling into acute poverty.
	Geographic areas disparity	Less disparities in poverty distribution across rural and urban regions than the other Arab countries.
	Economic inequality	The poorest quintile of households is 24 times more likely to be poor than the top quintile.
Tunisia (ESCWA, 2017c)	Acute poverty (%)	0.6
	Poverty (%)	17.8
	Most influential indicators	Years of schooling followed by school attendance
	Vulnerability	31.9% vulnerable to falling into poverty, and 4.3% vulnerable to falling into acute poverty.
	Geographic areas disparity	Communities distant from the coast are more afflicted by poverty with significant difference between rural and urban populations.
	Economic inequality	Households in the poorest quintile are 17 times more likely than those in the top quintile to be multi-dimensionally poor.
Palestine	Poverty (%)	24
	Most influential indicators	Monetary deprivation accounting for 45% of total deprivation followed by unemployment, low education, personal freedom and asset safety.
	Geographic areas disparity	Poverty is four times more widespread in Gaza than it is in the West Bank.
Morocco (ESCWA, 2018d)	Acute poverty (%)	8.9
	Poverty (%)	36.6
	Most influential indicators	Education, nutrition and water/sanitation
	Vulnerability	34.6% are vulnerable to falling into poverty.
	Geographic areas disparity	Individuals in rural areas are 23 times more likely than to be acutely poor than those living in urban areas.
Lebanon (ESCWA, 2021a)	Acute poverty (%)	34
	Poverty (%)	82
	Most influential indicators	Health followed by public utilities, and unemployment.

Country	Indicator	Description
	Geographic areas disparity	Akkar, Baalbeck Hermel, Nabatieh, Bekaa are the most areas falling into poverty.

3.2.2 Inadequate Water Supply and Sanitation

More than 5% of the world's population lives in the Arab region, however, this region has less than 1% of the global water resources (IFAD, 2009). Water scarcity challenges are reflected in freshwater availability. This is determined in terms of quantity and quality, access to water services, infrastructure, financial resources, and institutional capacities.

Figure 3-5: Annual Renewable Water Resources per Capita in Selected Countries (2018) shows that Algeria, Jordan, Palestine and Tunisia fall below the absolute water scarcity threshold of 500 m^3 per capita per year (IFAD, 2009). Egypt, Lebanon and Morocco fall below the renewable water scarcity annual threshold of 1,000 m^3 per capita. This is exacerbated by water quality degradation, conflict, climate change, inefficient water use, and population rise.

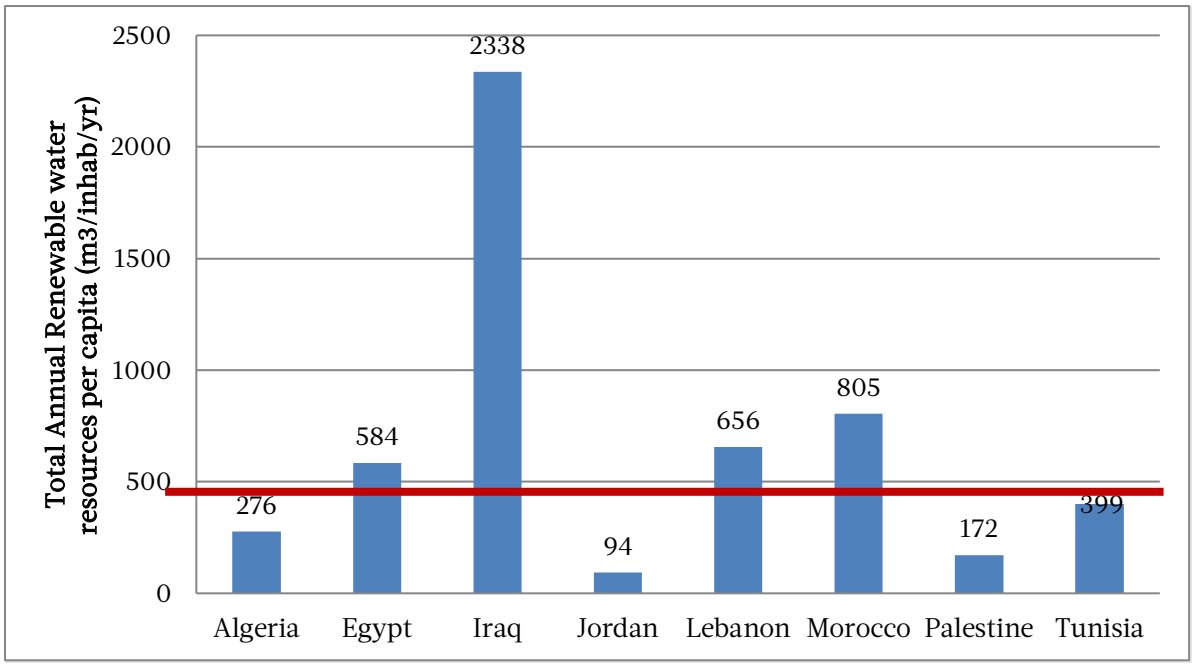


Figure 3-5: Annual Renewable Water Resources per Capita in Selected Countries (2018)

Source: FAO, 2018

Although access to safe drinking water and sanitation are considered basic human rights, nearly 55 million people in the Arab region do not have access to an improved drinking water source. Nearly 66 million people do not have access to improved sanitation (ESCWA, 2021b). Inequalities in access to water supply services and improved sanitation facilities are evident, especially between urban and rural communities. In rural areas, 23% of the population still lack basic drinking water services and 32% lack basic sanitation services, compared to 6% and 10% of the population in urban areas (ESCWA, 2022).

Insufficient water supply and sanitation systems result in severe economic losses, reaching $21 billion per year in the Middle East and North Africa region. That is, inadequate water supply and sanitation cost about 1% of regional GDP annually. Conflict-affected countries can lose as much as 2–4% annually (ESCWA, 2021b).

In Morocco, almost all residents in urban areas are connected to a drinking water network, compared to only 64% of inhabitants in rural areas (HCP, 2018). In Algeria, the percentage of people using safely managed drinking water services dropped from 76% in 2013 to around 72% in 2020, with a higher percentage in urban areas (74%) compared to rural areas (69%) (World Bank, 2022).

In Egypt, 7.3 million people are deprived of access to safe water (5.8 million of which live in rural areas), and another 8.4 million people are deprived of access to improved sanitation (UNICEF Website, 2017).

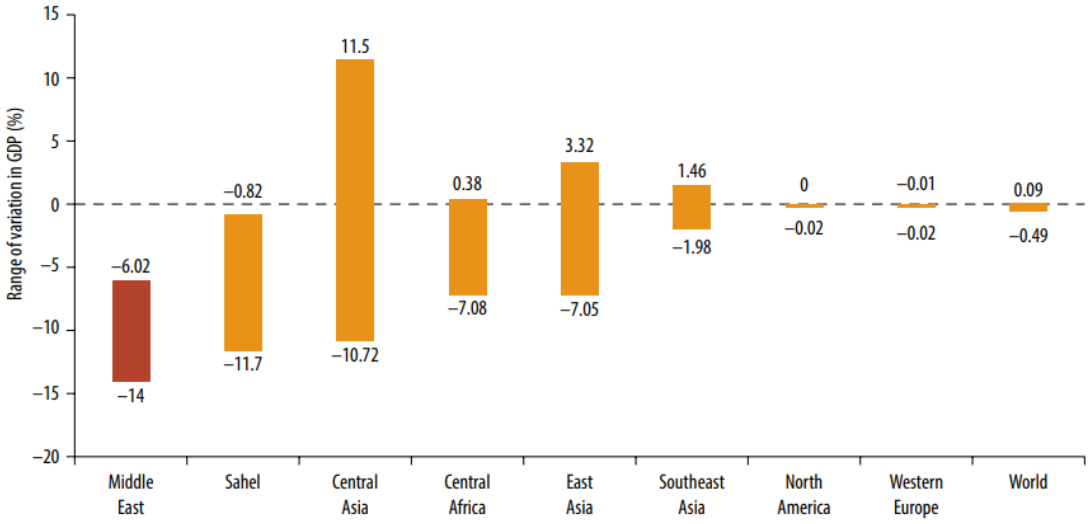
In Tunisia, a water-scarce country, the Centre West and North West regions have the greatest deficiencies in access to water, with the largest proportion and number of people using unimproved sources for drinking. Open defecation and unimproved sanitation are concentrated in the Centre West region, with the lowest access to networked sanitation (World Bank, 2018).

In Palestine, people connected to a water network consume water on a daily average that falls below the WHO's minimum recommended amount and constitutes around 33% of the daily water consumption in Israel (Switchmed, 2020). Some Palestinian communities consume less than 50 liters of water per day, which is considered a serious water shortage (UN/State of Palestine, 2020).

In the West Bank, people have been increasingly reliant on buying water for domestic use from the national water company in Israel. Accessing water resources has been made progressively limited as a result of the Israeli occupation, leading to additional economic challenges and unreliable water supply (Switchmed, 2020).

Climate change projections show that as a result of decreased precipitation and increased water demand, by 2030, renewable water resources are expected to decrease by 20% (ESCWA, 2017d). In turn, this will reduce water availability, alter agricultural production patterns, threaten livestock production, adversely impact forests and wetlands, and increase the vulnerability of people to water scarcity, food insecurity, loss of livelihood and biodiversity.

As an example, Figure 3-6 shows the projected economic impacts of climate change induced by water scarcity in different regions of the world. The Middle East and the Sahel are the areas that will be the most negatively impacted. There, the impacts of climate-change-induced water scarcity amount to 6–14% of the regional gross domestic product.



Source: World Bank 2016.
Note: The range of impacts is determined by the type of policies implemented to cope with water scarcity, from a business as usual policy (–14 percent) to a policy seeking to reallocate water to the most productive uses (–6 percent).

Figure 3-6: Economic Impacts of Climate Change-induced Water Scarcity by 2050

Source: ESCWA, 2017d

Iraq is the 5th most vulnerable country in the world to decreased water and food availability and extreme temperatures (UNDP, 2022a). The country could face a shortfall of as much as 10.8 billion cubic meters of water annually by 2035. In fact, around seven million Iraqis have already been affected by drought and risk displacement (Iraqi Presidency, 2017).

Recent droughts have also had a considerable impact on access to improved water sources in the Diyala and Al-Basrah governorates of Iraq. In the Al-Khalis district in Diyala, 21% of households and 100% of households in the Al-Basrah district were reported to be using an unimproved drinking water source (OCHA, 2022). Furthermore, Morocco is expected face a major water shortfall due to increased water demand and reduced precipitation induced by climate change.

Governmental studies have projected a loss of 80% of all water resources in Morocco by 2045 with current consumption habits and climate change impacts (Economic, Social and Environmental Council of Morocco, n.d.). Climate change also has detrimental impacts on groundwater resources. For instance, the water table of the Ben Tadla aquifer in Morocco is projected to decrease from 10 m to more than 25 m by the end of the century, leaving some aquifer areas completely dry.

In Palestine, dependence on groundwater for domestic and agricultural purposes reaches more than 85% of the total water withdrawals (ESCWA, 2021d). In the Gaza Strip, the groundwater pollution from seawater, wastewater and agriculture has contaminated 97% of the water available for use.

In Jordan, groundwater availability is projected to decrease by 40% by 2030 due to the refugee crisis and climate change impacts (ESCWA, 2021d).

Egypt's Nile Delta is recognized as one of the world's three 'extreme' vulnerability hotspots (UNDP, 2018). Egypt has observed a statistically significant reduction of annual total precipitation amounts over the past 30 years, by approximately 22%. This has resulted in reduced water availability in some areas and increased periods of drought and dry spells (GERICS, 2019).

At the household level, water scarcity is exacerbated by climate change. This, in turn, increases income spent on water provision and time spent on water collection, particularly for women. Communities that are not connected to water supply and sanitation networks end up paying much more for water-related services than their connected counterparts (UN Water, 2006).

For instance, buying bottled and trucked water has become a common practice for households in areas where water is scarce. Households that can't afford to pay inflated rates for reduced quantities of water from private water tankers are thus forced to sell assets and/or migrate (UNICEF, 2021).

In Tunisia, total Water and Sanitation Hygiene (WASH) expenditures per capita increased from US$51 in 2013 to US$57 in 2015 with wide disparities between urban and rural areas. Expenditure in urban areas were around US$66 as compared to US$38 per capita in rural areas.

Inequality between governorates is also wide with expenditures ranging between US$30 per capita in Le Kef and US$109 in Tozeur in 2015 (World Bank, 2018). In Iraq, some households have their water turned on for only two hours per day, which has exacerbated the problem and resulted in a lower overall volume of water within networks (OCHA, 2022).

In conclusion, it is evident that sustainable access to safe and sufficient water resources is limited in the region. These issues are especially magnified in rural areas and countries facing conflict and political instability. The impact of climate change will reduce the availability of both surface and groundwater resources, thus worsening the situation and pressuring communities to find more costly alternatives. The most vulnerable, including those who are not connected to the water and sanitation networks, and those who do not have the financial capacities to recuperate, will be hit the hardest.

3.2.3 Food Insecurity and Loss of Livelihoods

Water for agriculture remains a priority to ensure food security and maintain rural livelihoods. Figure 3-7 shows the percentage of water withdrawal by sector in selected countries. This illustrates agriculture as a major sector requiring water withdrawals, reaching as high as 91% of water withdrawal in Iraq.

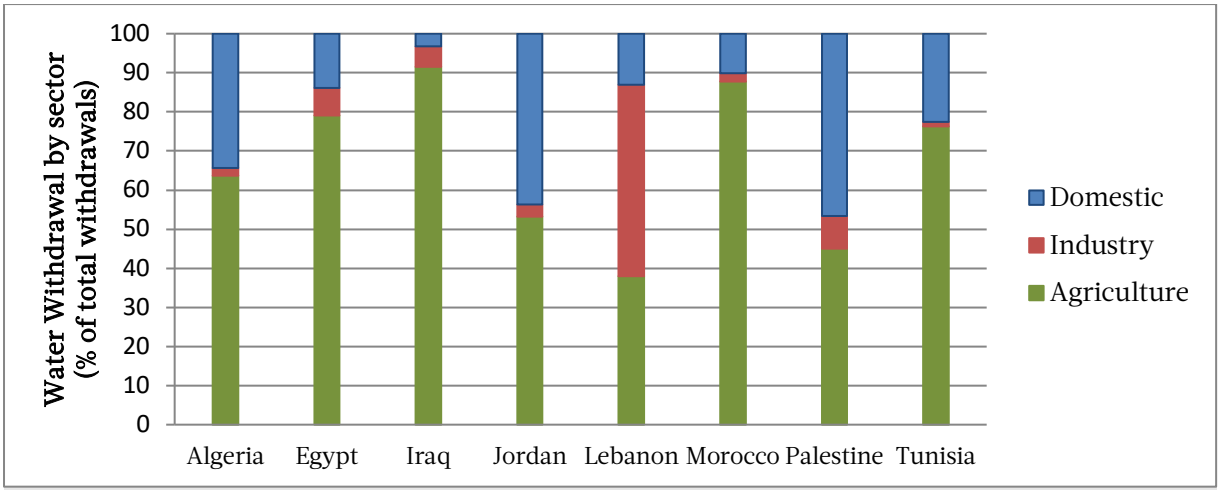


Figure 3-7: Water Withdrawals by Sector as a Percentage of Total Withdrawals in Selected Countries in 2018

Source: OCHA, 2022

Climate change has severely affected the agricultural sector and has had a negative impact on food security in many areas. Increasing temperatures and evaporation rates, as well as decreasing precipitation trends, impact crop yield, water availability, and land and soil productivity. In fact, unless adaptation and mitigation measures are implemented, a 1.5-2.5°C increase in temperature may reduce crop yields by 30% in Jordan and Egypt (World Bank, 2014). Box 3-1 shows the impact of climate change on wheat crop productivity in selected areas.

Box 3-1: Impact of Climate Change on Crop Production in Selected Areas

The impacts of climate change on wheat production in Egypt, Iraq, Morocco, and Tunisia were assessed using the AquaCrop simulation program and the climate-variable projections of the RICCAR Initiative on Climate Change in the Arab Region. The table below presents the change in yields for rain-watered and irrigated crops under RCP 4.5 and 8.5 scenarios as compared to the reference period (1985-2005). These findings showed that climate change altered crop productivity and growth cycles. A decrease in productivity is accompanied by a shortage in the length of crop cycle, leading to negative impacts on crop quantity and quality. Simulations on specific crops also showed that yields are expected to decline, affecting food production. Compared to irrigated crops, rain-watered crops are shown to be more sensitive to climate change in the region. However, climate change is also affecting the availability of water for irrigated agriculture.

Country	Water source and crop	*RCP 4.5*		*RCP 8.5*	
		Change in Crop Yield (%)		Change in Crop Yield (%)	
		2020-2030	2040-2050	2020-2030	2040-2050
Morocco	Rainfed	-23	-18	-9	-26
Tunisia	Rainfed	-7	-3	-4.4	0
Egypt	Irrigated	-2	-4	-3	-6
Iraq	Irrigated	-1	-2	-3	-4

Source: ESCWA, 2019

Climatic shocks and extreme events alter the livelihood strategies of rural people and low-income people whose livelihoods rely on animal production and agricultural productivity. Between 2010 and 2019, droughts affected more than 44 million people in the region. Economic damages from disasters (earthquakes, floods, storms) amounted to more than $19.7 billion (ESCWA, 2017e). Floods hinder food accessibility by damaging crops and infrastructure, blocking transportation of agricultural products to markets or food producers, and thereby leading to spikes in food prices.

In Iraq, drought and land degradation jeopardize food production, with northern areas depending on rainfall and central and southern areas relying on irrigation. During the 2020/21 crop season, unprecedented low rainfall in the Tigris Euphrates River basin resulted in crop failure in rain-watered areas, particularly in northern Iraq. National cereal production was 38% lower in the 2020/21 season compared to the previous season. As water levels dropped and salination rates rose, half of households in Al-Chibayish and Al-Faw districts lost cattle within six months and others were forced to sell their livestock at reduced prices. The average cost of a cow reached 200 USD compared to its pre-crisis cost of around 800 USD (NRC, 2021).

In Lebanon, a mapping of the country undertaken to understand climate change impacts on agricultural production and farming reliant communities identified low climate change resilience levels in rural areas of Lebanon. This was especially noted in the North, Akkar, and parts of the Bekaa, which are agricultural areas. UNICEF estimated that more than 71% of people in Lebanon fall within 'highly critical' and 'critical' levels of vulnerability (WFP/AUB, 2022).

Most farmers in rain-watered areas are small farmers and they depend on agriculture and/or herding for their livelihoods. A decrease in productivity means a loss of livelihood and food security for these farmers. In the case of women, the agricultural sector is responsible for 22% of all female labour (ESCWA, 2021d) and as such, water scarcity impacts on livelihood are especially felt by women.

Loss of income also reduces expenditures on health, sanitation, and food safety, resulting in chronic illness with potential effects on nutrition (ESCWA, 2017e). In Morocco, around 40% of the labor force is involved in agricultural activities. Hence, reduction in water supply could eliminate job opportunities (Taheripour et al., 2020). In Tunisia, farmer households are projected to suffer a decrease in farm income between 2% and 7% annually between 2020 and 2030, due to the combined effect of increasing global food prices and decreased crop yields (USAID, 2018).

Small farmers face more financial stress and often face limited access to improved seeds, new technology, and knowledge needed to adapt to climate change and protect livelihoods from climate hazards. In addition, decreases in productivity due to climate change lead to increased debt liability.

For instance, in Tunisia, reduced producer subsidies and lack of access to credit for small and medium farms led to the impoverishment of rural communities, causing a substantial rural exodus between 1999–2004 (Jouili, 2009). Furthermore, Algeria faces severe land degradation and desertification that negatively impacts agriculture production.

Small farmers are thus required to use more advanced technological solutions to raise agricultural production under low natural resource availability and higher constraints (Ariom et al., 2022). In fact, the non-adoption of climate smart technologies by farmers can lead to economic losses.

In Tunisia, an assessment valued the total direct economic losses caused by the inefficient use of irrigation water at around USD 150 million (Ariom et al., 2022). A study in Morocco showed that with water scarcity and change in crop yields due to climate change, a 20% improvement in water use efficiency could lead to an increase in irrigated area by 708,000 hectares. This would also result in an annual increase in value added of $2.602 per hectare of new irrigated land (Taheripour et al., 2020). Nonetheless, many countries lack access to any irrigation infrastructure and technologies. For instance, in Iraq (Al-Qurna district), the lack of irrigation infrastructure due to remote locations and/or the cost of equipment, together with reduced rainfall amounts, has resulted in devastating losses for households in terms of wheat, fruit, and vegetable production (NRC, 2021).

Forecasted sea-level rise (SLR) due to climate change is also likely to bear strong detrimental impacts on agricultural production in low lying coastal areas. For example, the Nile Delta region accounts for 30-40% of Egypt's agricultural production. Therefore, SLR and saltwater intrusion would be detrimental to this coastal zone in terms of agricultural production (ESCWA, 2017e).

The World Bank estimates that SLR could affect 43 port cities in the region, including Alexandria. Alexandria could experience devastating effects, with more than 2 million people displaced in the case of a 0.5-metre rise, in line with the IPCC's global estimated rise by the end of the 21st century (Cervigni and Dobardzic, 2012).

In terms of food security, hunger across the Arab region has increased by 91.1% since 2000. In 2020, around 32.3% of the Arab population did not have access to adequate food and an additional 10 million people reported food insecurity as compared to 2019 numbers (FAO, 2021).

Between March and April 2021, 22% of Lebanese households were found to be moderately or severely food insecure. Households led by women, households having members with chronic diseases, and those who are unemployed were more food insecure than other population groups (WFP/WB, 2021).

Figure 3-8 shows the prevalence of stunted growth in children under five and anemia for women of reproductive age. The principal reason for the rise in hunger in the Arab region is violence and conflict. Nonetheless, since climate change decreases agriculture productivity, it

increases the risk of hunger and malnutrition and further worsens food security and nutrition (FAO, 2021). The IPCC 2018 Special Report on Global Warming states that food security is expected to worsen from a medium to high risk under a 2°C temperature increase scenario.

In Iraq, a spike in food prices due to a significant rise in the cost of wheat over the last year has left the most vulnerable households struggling to afford basic necessities. 56% of surveyed households[5] indicated that the quantity and quality of food purchased decreased. Nearly one-fifth of households reported never having enough food for everyone in their family (NRC, 2021).

In Palestine, people are encountering extreme challenges to food security and nutrition. This is due to high unemployment and poverty rates, prolonged conflict and occupation, a weakened economy, and limited access to resources exacerbated by climate change (WFP, 2022a). According to The UN World Food Program (WFP), around 1.79 million Palestinians, consisting of approximately 33% of the Palestinian population, are food insecure. Of these, 1.1 million people suffer from severe food insecurity. Around 90% live in the Gaza strip (WFP, 2022a).

Higher food insecurity rates are observed among Palestinian women. 33.7% of families headed by women suffer from food insecurity in Palestine. Worse numbers are recorded in Gaza, where this percentage reaches up to 64% (WFP, 2022b).

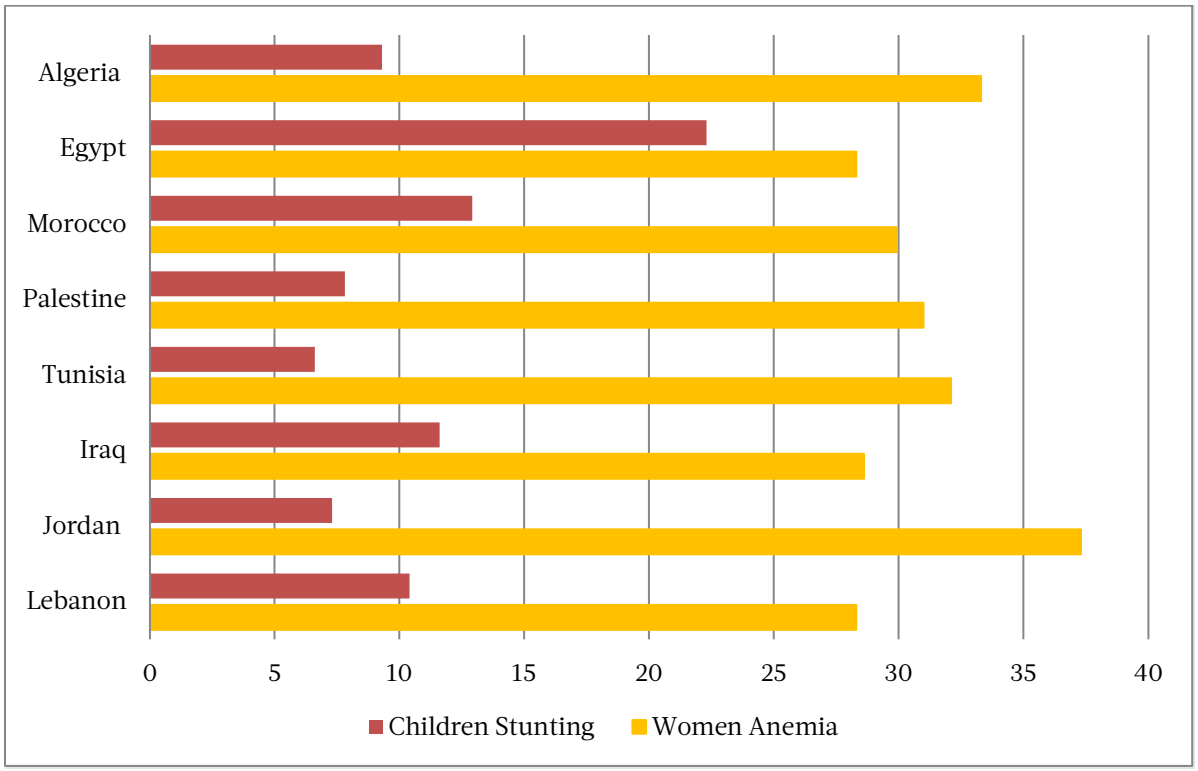


Figure 3-8: Prevalence of Stunting among Children under Five (2020) and Anemia in Women of Reproductive Age (15–49 years) (2019) in Selected Countries

Source: Adapted from WFP, 2022b

[5] 2,800 households in 2020-2021 drought-affected areas across Iraq

3.2.4 Conflicts, Political Instability, and Migration

Climate change can indirectly increase the risk of conflict by exacerbating factors that lead to it. An example is the demonstrations preceding the Syrian civil war. These have been argued to be partly related to climate change and the multi-year drought that helped ignite demonstrations.

Indeed, studies have found that drought increases conflict intensity, arguably over agricultural resources. In addition, agriculture has become more vulnerable to drought during conflict (ESCWA, 2021c). Various factors driving conflict in Iraq are related to climate security risks. Climate change leads to increased pressure on limited resources and jeopardizes livelihood security. Failure to monitor and manage these climate-related risks increases the risk of social unrest and conflict, especially within resource-constrained communities (MDPA, 2022).

In addition, the absence of cross-border or multi-country agreements between Iran, Turkey, Syria, and Iraq has resulted in limited cooperation and international responses despite its regional implications. The construction of dams in Turkey and Iran have been linked to reduced water levels in the Tigris and the Euphrates rivers, and the Iraqi government predicts further reduction. This will give rise to an increase in environmentally forced displacement amongst people in southern Iraq (MDPA, 2022). In 2018, 630 families were displaced from southern Iraq due to water scarcity (UNICEF, 2021).

The Iraqi government expects the water crisis to lead to the displacement of four million displaced people over the next eight years, which is greater than the number of people internally displaced due to security issues (UNICEF, 2021). Indeed, assessments have shown that water scarcity will become the primary driver of internal displacement (UNICEF, 2021).

Conflict is also the main driver of increasing humanitarian needs. In several areas experiencing conflict, such as Iraq and Palestine, the water sector continues to suffer from long-term destruction of infrastructure. This further impedes safe access to WASH services for all populations and especially the most vulnerable (ESCWA, 2021c).

Palestine continues to suffer from the longest occupation in modern history. Israel maintains a system of oppression and domination over Palestinians through territorial fragmentation and control of land and property, and denial of economic and social rights (Amnesty International, 2022). Populations living in territories under occupation lack access to water resources. This makes these populations more vulnerable to the negative impacts of climate change because of their diminished capacity to independently manage and provide water and sanitation services.

Nearly 1.8 million Palestinians need water, sanitation, and hygiene assistance. Households in the Gaza strip face the dual challenge of limited water quantity and poor water quality, with only 1 in 10 households having direct access to safe water (ESCWA, 2020a). During the 2021 Israeli bombing, 290 WASH facilities in Gaza were damaged (ESCWA, 2020a). The breakdown in WASH infrastructure and services due to bombings also intensifies the risk of water-borne diseases, adversely impacting an already vulnerable public health situation (Switchmed, 2020).

Conflicts can also have negative implications on the social expenditures of governments. Frequently, military and security expenditures increase at the expense of social welfare programs needed to promote inclusive and sustainable development and alleviate poverty. In fact, "Over-investment in the military comes at the high cost of under-investing in other needs, including climate" (Steichen and Koshgarian, 2020). In 2019, the Arab region spent about 5.4% of its GDP on military expenditures and only 3% on health expenditures, while the world's average was 2.2% and 5.9%, respectively (ESCWA, 2022).

Refugees and internally displaced persons (IDPs) living in informal settlements are highly vulnerable to the impacts of climate change. This is especially the case for conflict-affected countries such as Iraq. IDPs and returnees in the Al-Hatra district of the western Ninewa governorate have poor sanitation facilities. Populations often must utilize unprotected and unhygienic emergency latrines(OCHA, 2022). In addition, higher levels of food insecurity were reported for internal refugees in the northern governorates (Erbil, Dahuk and Sulaymaniyah) (UNHCR, 2022).

Refugees in Lebanon and Jordan have also been extremely affected by a severe increase in poverty rates, and face limitations in accessing food, education, healthcare, and other basic services. In Jordan, districts hosting Syrian refugees (Zarqa, Marka, Jam'ah, Northwest Badiyeh, and Irbid, Mafraq, Sahab, and Ajloun) are the most vulnerable in terms of water and sanitation vulnerability (Ministry of Planning and International Cooperation/UN, 2020).

In Egypt, more than 27% of refugees were food insecure, and around 60% of them were vulnerable to food insecurity. Additionally, more than 50% of extremely poor refugees live in female-headed households (UNHCR, 2019) (

Box 3-1). Host communities in Jordan and Lebanon have also faced many challenges due to the spillover effects of conflicts in neighboring countries. For example, in the Beqaa Valley of Lebanon, only 36% of residents have access to safe drinking water. Studies have also shown that bacteriological contamination in this region is 10 times higher than the World Health Organization guidelines (ESCWA, 2021d).

In Jordan, the water supply per capita before the crisis was 80 liters. This dropped to below 30 liters in the most heavily affected areas. In fact, towns with the highest number of refugees witnessed an increase in water demand by 40% (ESCWA, 2021d). Contamination is also a major concern reported due to the use of latrines instead of toilets, especially in the Zaatari refugee camp (ESCWA, 2021d).

Box 3-1: Climate Change and Displaced Women

UNDP has estimated that 80% of people displaced by climate change are women (UNDP, 2022). Arab women are more likely to suffer continued losses due to climate change through displacement and the disruption of livelihoods. Women in refugee camps face additional predicaments owing to the lack of safe shelters and high risk of gender-based violence (Jensen, 2019). For example, droughts in Iraq forced farmers living in marshlands to migrate to urban areas with no access to clean water. This led to increased water-borne illnesses and violence against women and children (WFP, 2022c). Internally displaced women in Iraq are particularly vulnerable to poverty since their "access to power, voice, opportunities, and choice, is not only hindered by conflicts, corruption, environmental degradation and a lack of public and private investments, but also by discriminatory social norms and gendered legal frameworks" (MDPA, 2022). This is further magnified by discrimination based on nationality, ethno-sectarian belonging, age, disabilities, political beliefs, and affiliations (MDPA, 2022). Besides poor access to clean water, refugee camps also do not have adequate health provisions which can result in dire consequences for child-bearing women. Displaced women are usually responsible for providing water and food in the camps. Women are also responsible for caring for children and finding and preparing food. The need to stay home from school or work due to an inability to access water and sanitation services also leaves women and girls even further behind. The burden of not having access to clean fuels and technology more heavily impacts women, as they are mostly made responsible for cooking and domestic chores.

Climate change has also been a driver of migration. Internal climate migration worldwide was projected to reach 216 million people by 2050, with a heavy impact on the poorest and most climate-vulnerable regions. This is an indication that high vulnerability to climate change impacts in terms of livelihood, social, and economic systems undermines development gains and force people to migrate in distress.

North Africa is projected to have the largest share of internal climate migrants relative to the total population due to severe water scarcity issues combined with sea-level rise. Climate migration hotspots are located along the northeastern coast of Tunisia, the northwestern coast of Algeria, western and southern Morocco, and the already water-stressed central Atlas foothills.

In Egypt, the eastern and western portions of the Nile Delta, including Alexandria, could become migration hotspots due to both declining water availability and sea-level rise. In Morocco, the number of internal migrants is projected to reach an average of 2 million in 2050 under moderate development, or an average of 4 million under unequal development. In the pessimistic reference scenario, climate migrants are projected to make up 21% of all internal migrants by 2050. In a more climate-friendly scenario, this number would be around 10% (Clement et al., 2021).

In Algeria, migration from rural to mid-sized towns is partly due to environmental degradation, including water scarcity and soil erosion. However, many are forced to stay as they lack financial resources or social networks (Waha et al., 2017). Under current migration patterns, men constitute the majority of migrants, whereas women are left behind in rural areas. This will lead to a more intensive agriculture and domestic workload for women, as well as scarce water supplies (Waha et al., 2017).

3.2.5 Generational Inequality: Youth, Children, and Elderly

Climate change impacts are felt disproportionately by different age groups including the youth, children, and elderly. As the impacts are diverse, so are their needs, priorities, and capacities. Indeed, non-inclusive adaptation to climate change will exacerbate inequalities and injustice towards these age groups (Waha et al., 2017).

Youth are often referred to as agents of change and indeed they are a very important resource when discussing climate action. Still, in many areas, youth are disadvantaged by climate change. This is especially true for youth living in remote or rural areas. Young people (aged 15-29) represent about 30% of the entire Arab population. In Jordan, 63% of the population is under 30 years of age (UNICEF, 2019).

Younger generations will bear the cumulative impact of the climate change crisis. They will inherit a natural, physical, and socioeconomic environment that is overall more unequal, with diminished resources and higher risks to lives and livelihoods. In that regard, the vulnerability of Arab youth is presented in terms of high exposure and low adaptive capacity. For instance, a clear pattern has been observed between drought events and migration among Iraqi youth as they leave farming communities for cities in search of economic opportunities.

Out of the 2,800 households interviewed in drought affected areas in Iraq, almost one in two people report that youth have been forced to leave (NRC, 2021). The youth adaptive capacity is further constrained by barriers to education, land ownership, credit, and insurance access. Arab youth face an additional barrier from education systems that leave them without the necessary knowledge and tools to mobilize around climate action (ESCWA, 2020b). An example can be seen in the rising learning gaps and deprioritization of education following the economic crisis in Lebanon. This crisis has left many school-aged children unable to afford to go to school (GoL/UN, 2022).

In Egypt, the dropout rate in primary, preparatory, and secondary educational schools was 7.3% in 2017. This most heavily affects socially and economically vulnerable Egyptians, with early marriage being one of the pressing social causes behind school dropout (CAPMAS, 2018). Concerning land ownership, the increasing competition for productive land may raise land values, making it harder for rural youth to access land. Alternatively, this may lower the price of lands with lower productivity (Brooks et al, 2019).

Other constraints include land rental markets and inheritance policies that exacerbate the impacts of climate change on young people's productivity (Brooks et al, 2019). Furthermore, youth lack access to credit, since they have not accumulated enough assets that could be used as collateral. This in turn prevents them from adopting adaptive technologies to mitigate climate change and water scarcity (Brooks et al, 2019).

According to UNICEF, the climate crisis is a child rights crisis (UNICEF, 2021b). Climate change has devastating impacts on school-aged children due to its impacts on access to education, housing, water and sanitation, nutrition, and health (UNDP/OPHI, 2020). In the Middle East and North Africa (MENA) region, 9 out of 10 children live in areas of high or extremely high-water stress. This negatively impacts their health and nutrition and their future mental and physical development (UNICEF, 2021a).

Children live with the impact of water scarcity for their entire lives. For example, severe droughts have been linked to stunting. A recent study by the World Bank based on data from rural Africa showed that girls born during severe drought grow up to be physically shorter because nutritious food was less available (UNICEF, 2021a).

In Iraq, children are at particular risk with nearly one in two children (48%) having their food intake reduced, and 43% not having enough water (NRC, 2021). In 2018, at least 118,000 people living in Basra, half of them children, had to go to the hospital because of an outbreak of water-borne diseases that doctors traced to poor water quality (UNICEF, 2021a).

In Palestine, polluted water is used as no other alternative is available, threatening the lives of all Palestinians, especially children. In fact, 25% of diseases spread in Gaza and 12% of deaths in young children are due to lack of proper water and sanitation services (ESCWA, 2021d). In Egypt, the second leading cause of death among children under 5 years old is diarrhea. Every year, approximately 4,000 children under the age of five die, mainly due to dehydration (WHO, 2015). In Algeria and Egypt, the risk of dying before age 5 is significantly higher for girls, suggesting gender-based discriminatory practices (UNICEF, 2021c) (Box 3-2).

Box 3-2: Climate Change and Children, Global Numbers

Children all over the world are being impacted by climate change:

- Over one-third of children are currently highly exposed to heatwaves.
- Nearly 1 in 6 children are currently highly exposed to cyclones.
- 1 in 7 children are currently highly exposed to riverine flooding.
- 1 in 10 children are currently highly exposed to coastal flooding.
- Over one-third of children are currently highly exposed to water scarcity.
- Over 1 in 4 children are currently highly exposed to vector-borne diseases, such as malaria and dengue.
- Almost 90% of children are currently highly exposed to air pollution that exceeds 10µg/m3.
- Over one-third of children are currently highly exposed to lead pollution due to exposures in contaminated air, water, soil, and food.
- Almost every child on earth (>99 per cent) is exposed to at least 1 major climate and environmental hazard, shock, and/or stress. 2.2 billion children are exposed to at least 2, 1.7 billion children are exposed to at least 3, 850 million children are exposed to at least 4, 330 million children are exposed to at least 5, and 80 million children are exposed to at least 6 overlapping climate and environmental hazards, shocks, and stresses.

Source: UNICEF, 2021b

The number of elderly people (above the age of 65) in the region is expected to increase from 32 to 70.4 million by 2050. Elderly people will then make up 11.7% of the total population (ESCWA, 2014). Lebanon, Tunisia, Morocco and Algeria are experiencing a "fast rate of ageing" to the extent that the percentage of elderly is expected to double by 2030. Egypt and Jordan are experiencing a "moderate rate of ageing" with constant percentage increases expected between 2030 and 2060. Iraq and Palestine are experiencing a "slow rate of ageing" (Hussein, 2019).

This is all taking place at a time when countries face lower levels of socioeconomic development and have fewer resources to adjust to the increasing social, economic, and health challenges (ESCWA, 2014). Currently, there are no measures to ensure older persons' equality and access to justice (UNFPA, 2020). In many Arab countries, the absence of universal or comprehensive old-age pensions and health insurance have also forced them to become more financially dependent on family members (ESCWA, 2022).

Most research indicates that the elderly face higher risks from climate change as compared to other age groups (Harper, 2019; EPA, 2022). Their bodies are less capable of responding to the effects of environmental hazards such as heat. They are also more likely to have health conditions and compromised immune systems that make them more sensitive to climate hazards including insect- and water-related diseases. Further, they may be dependent on

others for medical care and daily assistance, which also increases their vulnerability to extreme weather (EPA, 2022).

In Lebanon, the percentage of elderly suffering from at least one chronic disease is 63.8%, with the majority of countries having rates above 45% (Hussein, 2019). In the rural areas of Morocco, the prevalence of long-lasting (noncommunicable) illnesses reaches 60.6% of the population (UNFPA/LAS, 2017). Consequently, climate change impacts can lead to a reduction in access to fresh water. This can have severe implications for the elderly, leading to weakness, dizziness and increased risk of falls, kidney function, and cardiac function.

Furthermore, drinking contaminated water may lead to diseases which are frequently fatal for the elderly (Harper, 2019). Some elderly persons are vulnerable to being trapped in poor environments as they may lack mobility or be disabled, which increases their risks for extreme weather events. Disability rates exceed 25% in Morocco and 16% in Palestine (Hussein, 2019).

Morocco also has the highest percentage of older disabled married men at 86.3% (UNFPA/LAS, 2017). In fact, activity rates among the elderly witnessed a sharp decrease in Tunisia and Jordan (8.6% in 2000 to 2.5% in 2015) (UNFPA/LAS, 2017). In addition, older women in rural areas and those who are not educated are more likely to be economically discriminated against (UNFPA/LAS, 2017).

The question thus arises as to the extent to which vulnerable groups are receiving equitable, fair, targeted, and just support to manage the negative impacts of climate change.

4 Climate Justice within National Strategies

If it is accepted that the societies least able to cope with climate change are the ones that will be exposed to its worst impacts and that these groups are heavily reliant on the use of natural resources (Thomas & Twyman, 2005), then a very strong case can be made for the need to understand and foster appropriate adaptation strategies, and the equity and justice issues behind them.

The selected countries are all within the Arab region and have utilized the regional strategies (Box 4-1:). However, the question is whether governments have incorporated climate justice within their strategies and planning. This section provides a summary of strategies and action plans developed by the respective governments focusing on climate change, water, agriculture, and other topics of relevance.

Box 4-1: Regional Strategies

In 2011, the Arab Ministerial Water Council of the League of Arab States adopted the Arab Strategy for Water Security in the Arab region to meet the challenges and future needs for Sustainable Development 2010-2030. This work plan tackles several aspects of water resources management, such as capacity building, research and development, provisions for drinking and irrigation water services, unconventional water resources, and integrated water resources management.

The Strategy for Sustainable Arab Agricultural Development (2005-2025) was adopted by the ministers of agriculture in the Arab region with the support of the Arab Organization for Agricultural Development. The strategy's main objective is agriculture development characterized by effective resource utilization. This work aims towards achieving food security while securing sustainable livelihoods in the agricultural sector. It focuses on improving efficient use of available water resources, strengthening research and transfer of advanced agricultural technology, improving agricultural investment, and developing farmers' institutional frameworks. An underlying driver for these strategies is the aforementioned water scarcity in the region combined with the lack of suitable agricultural land.

Table 4-1 below represents the national strategies related to climate change, agriculture, and water as well as other multi-sector strategies in each of the selected countries.

Table 4-1: National Strategies Related to Climate Change, Agriculture and Water as well as Other Multi-sector Strategies in each of the Selected Countries

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
Lebanon	Lebanon's National Adaptation Plan (planned) aims to mainstream climate adaptation across Lebanon's governance policies and strategies and increase the resilience of communities to climate change[6].	The National Agriculture Strategy 2020-2025 aims at developing the agri-food sector as well as achieving sustainable development and responding to the challenges of development. It has five pillars: (1) restore the livelihoods and productive capacities of farmers and producers; (2) increase agricultural production and productivity; (3) enhance efficiency and competitiveness of agri-food value chains; (4) improve climate change adaptation, and sustainable management of agri-food systems and natural resources; and (5) strengthen the enabling institutional environment.	The National Water Sector Strategy 2020 update aims to revise the strategy to (1) consider the legal and regulatory framework reforms, (2) improve service provision and reduce costs, (3) propose an overhaul in the adopted tariff system, (4) enhance private sector involvement in the sector, (5) improve reporting and monitoring within the sector and on the build capacities at MoEW and the four Regional Water Establishments, (6) engage stakeholders in the decision-making process through the update of the Strategic Environmental Assessment, which covers climate change mitigation and adaptation aspects.	The National Strategy for Women in Lebanon (2011-2021) emphasizes the positive role that women can play alongside men to enhance social behaviors to mitigate and adapt to climate change impacts.

[6] in the process of preparing a National Adaptation Plan

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
Egypt	National Climate Change Strategy 2050: The Egyptian's quality of life is a priority according to this strategy which can be identified as a roadmap for achieving the objective of "Meeting the challenges of climate change" within the framework of the updated Egypt Vision 2030. National Adaptation Plan (under preparation): In 2015, Egypt started the National Adaptation Plans Process funded by the Green Climate Fund and supported by UNDP. It aims at decreasing vulnerability to climate change; building climate resilience by improving institutional and technical capacity for adaptation planning; examining climate risks; and determining priorities.	The Sustainable Agricultural Development Strategy towards 2030 aims at modernizing Egyptian agriculture, achieving food security, and improving the livelihood of the rural inhabitants. In particular, the strategy aims at promoting the sustainable use of natural agricultural resources; increasing the land and aquatic systems productivity; enhancing food security of strategic food commodities; increasing the competitiveness of national agricultural products; improving the climate for agricultural investment; improving the livelihood of rural inhabitants, and reducing rural poverty.	The National Water Resources Plan (2017-2037), referred to "Water security for all", aims at ensuring that water usage is supported by sufficient water availability and supply and by regular improvements and adaptation of the intended water use to the present scarcity. It is founded on the following 4 pillars: rationalize water use; improve water quality; increase water availability; develop an enabling environment for the Integrated Water Resources management, policy, and execution.	Egypt Vision 2030 aims at improving the quality of life of Egyptian people today without affecting the rights of future generations. It includes the economic, social, and environmental dimensions of sustainable development. The Economic Dimension consists of the pillars of economic development, energy, innovation, and scientific research, with the transparency and efficiency of government institutions. The Social Dimension consists of the pillars of social justice, health, education, training, and culture. The Environment Dimension consists of the pillars of environment and urban development.
Jordan	The National Climate Change Policy of the Hashemite Kingdom of Jordan (2013-2030) aims to achieve a pro-active, climate risk-	The National Agricultural Development Strategy 2016–2025 aims to foster agricultural development with a focus on	Climate Change Policy for a Resilient Water Sector (2016) addresses the principle of adaptive management and states	-

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
	resilient country. This policy strives towards maintaining a low carbon output but growing the economy, developing the adaptive capabilities of communities, and identifying the needs of vulnerable groups and addressing them. It aims to enhance the resilience to climate change at various sectorial levels and to optimize mitigation opportunities. It prioritizes climate change adaptation and mitigation of greenhouse emissions and emphasizes that adaptation is crucial. Its main short-term objectives include: 1) integration of vulnerability and CC impact assessment, adaptation measures and CC mitigation objectives into key relevant sectors' policies, strategies, and legal framework, including in tourism; 2) mainstreaming CC considerations in infrastructure planning and services as well as land use planning; 3) providing a	higher agricultural productivity, and efficiency in the use of irrigation water It also aims to increase use of technology, efficient public-private partnership, and enhanced competitiveness of the sector. This will ensure high degrees of self-reliance in food security, improved management of risks, and more.	that rational objectives and priorities need to be reassessed regularly. This is to ensure the adaptation of the monitoring process and the implementation of any newly available knowledge in the water sector and in other sectors, including new results from climate science/climate services.	

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
	ground to secure sufficient financial support and strengthening institutional and human resources capacities to achieve its objectives. The National Climate Change Adaptation Plan (2021) aims to mainstream climate change adaptation in the development planning processes. This is to enhance climate resilience and adaptive capacities and reduce climate vulnerability within all relevant sectors in Jordan. It aims to: 1) identify, prioritize and implement strategic adaptation measures; 2) mainstream women, children and young people, refugees, and other vulnerable groups; 3) provide a functional coordinating framework to guide national stakeholders and development partners through climate resilient decision-making processes; 4) encourage and facilitate strategic investments in			

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
	Jordan's climate-resilient development; 5) provide baseline for robust monitoring, review and learning framework; and 6) support the government to achieve its national priorities.			
Iraq	The National Adaptation Plan (under preparation) aims to minimize vulnerability to the negative impacts of climate change, mainly in developing countries, through strategic planning based on climate change future projections. The Green Climate Fund (GCF) has funded a three-year project to assist Iraq in developing and implementation of its NAP. This work will focus mainly on reinforcing institutional, technical, and financial capacities to ensure that the effective integration of the medium- to long-term adaptation needs into national development planning.	-	-	The National Sustainable Development Plan (2018-2022) aims to adopt a model for balanced growth that stimulates productive sectors such as industry and agriculture based on improved asset management policies. This will then strengthen infrastructure efficiency by channeling investment through sectors and spaces in order to optimally utilize oil revenues to achieve economic diversification. "The future we want" - Vision for Sustainable Development 2030 aims at empowering Iraq's people in a safe country and unifying society with diversified economy. This vision hopes to end disparity between social classes and among

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
				governorates and regions, ensure sustainable environment, and achieve social justice goals and good governance.
Tunisia	The Proposed National Adaptation Plan aims to integrate climate change adaptation into two dimensions of development planning: socio-economic planning and land-use planning, both at the national and local levels. Entry points for integrating adaptation include the National Economic and Social Development Plan (which is renewed every five years, the current plan 2016-2020 has a major component on the green economy which integrates some adaptation actions) and land use planning.	The Five-Year Development Plan, 2016-2020 presents the national strategic outlook towards the agriculture sector. This outlook is distilled into seven objectives that aim towards a better utilization of natural resources, mitigate the impacts of climate change, promote productive and competitive systems, increase investments in agriculture, sustain small and family-based farms, disseminate knowledge, and promote better governance of the sector.	Tunisia's 2050 Water Vision and Strategy aims to explore the state of availability of water resources by 2050 and contribute to socio-economic development. It aims to do so by securing availability and access to water resources for Tunisia in an efficient, equitable, and sustainable manner. This follows an integrated water resources management approach and ensures national, food, and social security.	-
Palestine	The National Adaptation Plan (2016) provides an assessment of historic climate trends in relation to the State of Palestine. It offers projections, identifies and	Agricultural Sector Strategy Resilience and Sustainable Development 2017-2022 aims to foster the resilience of Palestinian farmers and secure their	Palestine's National Water Sector Strategic Plan and Action Plan (2017-2022) aims to improve water conditions and sanitation	National Policy Agenda (2017-2022): Putting Citizens First seriously considers the independence of Palestine and focuses on public institutions and

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
	prioritizes 'highly vulnerable' issues by sector (a total of 12 highly vulnerable sectors are identified) and adaptation options, including costing. It also provides future developments required for the State of Palestine's institutions to be able to participate in climate-modeling research, an outline of the process for future monitoring and evaluation, and future steps regarding individual themes/sectors or adaptation options.	connections to their lands. Additionally, it aims to manage natural and agricultural resources sustainably. This strategy hopes to increase agricultural productivity and competitiveness and allow more farmers to access agricultural services. Finally, the strategy aspires to build a supportive and efficient institutional framework.	services and to facilitate the life of Palestinian people. Palestine's National Water and Wastewater Policy and Strategy for Palestine (2013-2032) aims to plan and manage essential framework for the protection, conservation, sustainable management, and development of water resources. It also strives towards the improvement and sustainable management and provision of water supply and wastewater services. This strategy seeks to reinforce the Palestinian Authority's approach to sustainable water resources management by ensuring that the government works together in the pursuit of shared water resources management goals. It aims at establishing a framework for the coordinated development, regulation, and financial sustainability of water supply and wastewater services to ensure	the people. It includes three pillars: paths to independence, government reform, and sustainable development. Cross-Sectoral Environmental Strategy 2020-2023 aims to achieve the strategic vision to access a clean, sustainable, and protected environment.

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
			concerted efforts towards improved water systems management, rehabilitation and maintenance; and ensure close cooperation among all water-related agencies and stakeholders at national, governorate, municipal and local levels.	
Morocco	Morocco's 2030 National Climate Plan constitutes a convergence framework for the development of a medium and long-term climate policy and offers the country the opportunity to implement its NDCs. The National Climate Change Policy (2014) is a coordination tool for various measures and initiatives against the effects of climate change. It represents a dynamic, participatory, and flexible structuring policy instrument for a low-carbon climate-resilient development. Updated Nationally Determined Contribution (2021) was	The New Strategy for the Agricultural Sector – Generation Green – 2020 – 2030 presents a plan that will guide agricultural development in Morocco for years to come. This strategy complements and creates synergies with other strategies and action plans implemented at the national level. It builds on and improves previous green development plans that have benefited the agricultural sector. A human element is evident in the plan as it aims to support the emergence of an agricultural middle class, develop local knowhow, enhance farmers'	The National Water Strategy (2010-2030) was established as a framework for implementing water action plans to respond to water demand under climate change and increasing constraints sustainably. The National Water Plan (2015) includes an inventory on water resources, measures for protection of water resources and the natural environment and adaptation to climate change, along with support actions.	The 2030 National Sustainable Development Strategy (2017-2030) aims to achieve a gradual transition towards a green economy, taking into account environmental challenges, working for promoting human development and social cohesion, and sustainably consolidating economic competitiveness. The National Energy Strategy (2009-2030) establishes four main pillars, one of which is to accelerate the development of energy from renewable sources, especially wind, solar, and hydropower.

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
	developed with the firm conviction that tackling the problem of climate change calls for a substantial commitment from all parties in terms of mitigation, adaptation, means of implementation, cooperative approaches and transparency. National Strategic Adaptation Plan (ongoing)	organizations, and modernize the sector.		
Algeria	Algeria's National Climate Plan (2013) is an update to the National Plan of Action and Adaptation to Climate Change (PNAACC) (2003-2013). It presents mitigation and adaptation programs to ensure sustained economic growth and inclusive social development, while taking into consideration climate change related challenges. It aims to identify the impacts of climate change on the economy and society, propose a strategy that addresses CC and includes coherent actions and measures, translate adaptation and	-	Integrated Water Management (2003-2011) offers advice on sector policy and strategy and supports the creation and implementation of planning and regulation processes. It also encourages the introduction of an integrated and participatory water resources management model tailored to rural areas. Support consists of process and technical advice from international, regional, and local experts, and also includes material contributions and training measures.	The Renewable Energy and Energy Efficiency Development Plan 2011-2030 aims to increase the usage of renewable energies and to diversify energy sources in the country. The National Strategy for Ecosystem Management of Wetlands (2016) is being implemented in close collaboration with concerned national institutions. It pays particular attention to the active participation of civil society, through the creation of national networks of associations, local

Country	National Adaptation Plans and Climate Change Related Strategies	Agriculture Strategies	Water Strategies	Other Strategies and Multi-sector Strategies
	mitigation priority at an operational level, identify the terms and conditions of implementation of measures as well as monitoring and evaluation, improve access to public and private international finance, and promote technological and financial foreign partnership. National Adaptation Plan (NAP) (under preparation)			residents, the media, and observers of wildlife species. This strategy is intended to help guide economic, social, and cultural development actions and contribute to work against desertification as well as to mitigate the effects of climate change or adaptation to it. Thus, it contributes to the country's food and water security.

5 Mapping of Climate Justice Key Stakeholders

Stakeholders include those who are already active in climate justice issues or debates around climate justice as well as those who are not yet active in this area but are willing or have the potential to be engaged. Stakeholder mapping is a baseline to support a thorough analysis of potential collaboration and interrelation between stakeholders. This section identifies five major groups of stakeholders in the selected countries: government/public sectors, research/academic groups, civil society groups, private sectors, and development groups.

The public sector is a major stakeholder under climate justice ideas. It is responsible for drafting national strategies, ensuring co-operative governance, and implementing government policy. In climate justice issues, it can provide overall leadership and political support, support in implementation, and influence on mobilizing resources. This includes ministries and regional and local government agencies with mandates related to water, agriculture, and environment. Table 5-1 presents the major identified government/public sector stakeholders for each country.

Table 5-1: Government/Public Sector Stakeholders

Country	Stakeholders
Lebanon	• Ministry of Agriculture • Ministry of Environment • Ministry of Energy and Water • The Litani River Authority
Egypt	• Ministry of Water Resources and Irrigation (MWRI) • Ministry of Environment • Egyptian Environmental Affairs Agency (EEAA) • The Central Department for Climate Change (CDCC) • Ministry of Agriculture and Land Reclamation (MALR)
Iraq	• Ministry of Water Resources • Ministry of Agriculture • Ministry of Environment
Jordan	• Ministry of Water and Irrigation • Water Authority (WAJ) • Ministry of Environment • Climate Change Directorate • National Climate Change Committee (NCCC)

Country	Stakeholders
	• Ministry of Agriculture
Tunisia	• Ministry of Agriculture, Water Resources, and Fisheries • Ministry of Environment • Ministry of Vocational Training and Employment • Ministry of Higher Education and Scientific Research • Coastal Protection and Planning Agency • National Sanitation Office • National Agency for Environmental Protection • The International Center for Environmental Technologies of Tunis • Agricultural Investment Promotion Agency • National Centre for Cartography and Remote Sensing • National Meteorology Institute • Regional Commission for Agricultural Development • Institution de la Recherche et de l'Enseignement Supérieur Agricoles
Palestine	• Environment Quality Authority • State of Palestine • Ministry of Agriculture • Ministry of Water • Ministry of Agriculture • Energy and Natural Resource Authority
Morocco	• Ministry of Equipment, Transport, Logistics and Water/Department of Water • Ministry of Energy transition and sustainable development • Ministry of Agriculture, Maritime Fisheries, Rural Development, Water and Forestry • Ministry of Solidarity, Social Development, Equality and Family • National Office of Electricity and Drinking Water • The General Council for Agricultural Development • Agency for Agricultural Development • The Regional Agricultural Development Office • Cartography and Geographic Information System Division • Royal Centre for Space Remote Sensing • The Directorate of National Meteorology • Climate Change Competencies Centre
Algeria	• Ministry of Water Resources • Ministry of Agriculture and Rural Development and Fisheries • Algerian Water Authority • National Agency for Hydraulic Resources

Country	Stakeholders
	• National Agency for Integrated Water Resources Management • National Office for Irrigation and Drainage • National Sanitation Office • National Office of Rural Development Studies • National Agency of Climate Change

The research/academic sectors include a critical group of stakeholders, especially as more work needs to be done on understanding climate change and its impact on climate justice. Stakeholders in this group promote research and development and provide data and analytical information using academic and technical expertise. They also provide input into analysis development and advice on best approaches, and can assist in science policy interphases and promoting scientific research programs. These stakeholders include universities and national research institutes, and some are identified in Table 5-2 for the selected countries.

Table 5-2: Research/Academic Stakeholders

Country	Stakeholders
Lebanon	• American University of Beirut - Issam Fares Institute • Lebanese Agricultural Research Institute (LARI) • University of Balamand • Lebanese University • Arab Forum for Alternative Studies
Egypt	• Alexandria Research Centre for Adaptation to Climate Change (ARCA) • Soil, Water, and Environmental Research Institute (SWERI) • Agriculture Research Center • National Water Research Center (NWRC) • National Research Center (NRC) • Cairo International Center for Conflict Resolution, Peacekeeping, and Peacebuilding
Iraq	• University of Anbar • Al Muthanna University • Environmental Research Center - University of Technology • Research Center of Natural, Engineering, and Agricultural Sciences - Kurdistan Institution for Strategic Studies and Scientific Research • Environmental Research and Renewable Energy Centre - University of Karbala
Jordan	• Information and Research Center (IRCKHF)

Country	Stakeholders
	• International Center for Agricultural Research in the Dry Areas (ICARDA) - Jordan • National Energy Research Center (NERC) • National Agricultural Research Center
Tunisia	• Institute of Arid Regions • Agricultural Research and Higher Education Institute • National Research Institute for Rural • Engineering, Water and Forestry • National Agricultural Institute of Tunisia • Centre for Water Research and Technologies
Palestine	• Al Azhar University, Gaza • An Najah University Nablus • Palestine Polytechnic University • The Community Development & Continuing Education Institute • The Scientific Research Council: Al-Quds Open University • Birzeit University • The Applied Research Institute of Jerusalem (ARIJ) • House of Water and Environment • Palestinian Hydrology Group • EuroMed Alliances for Consultancies and Capacity Development • PARC Palestinian American Research Center
Morocco	• National Institute for Agricultural Research • National Center for Water and Energy Studies and Research • PC2E Water & Environment Skills Centre • Mohammed VI Polytechnic University • The International Water Research Institute (IWRI) • Abdelmalek Essaâdi University
Algeria	• National High School of Agronomy • High School for Water • National Institute for Research on Forestry • The National Institute of Agronomic • Research of Algeria

CSOs are major stakeholders that should not be left behind when tackling climate justice. They ensure the cooperation of local communities and allow the identification of priorities through their rich knowledge of ongoing activities. They also provide a better perspective of what is acceptable in terms of implementation and have the power to influence implementation. As such, not only do they provide advice on all elements of sustainability

systems, but they are also the beneficiaries of successful project implementation. Civil society includes climate justice networks, youth organizations for water, climate, food, and biodiversity, women empowerment organizations and individual experts and activists. Examples can be found in Table 5-3.

Table 5-3: Civil Society Stakeholders

Country	Stakeholders
Lebanon	• Amel Association Lebanese • Development For People and Nature Association (DPNA) • Lebanon Reforestation Initiative • Youth4Nature • Emkan • National Association for the Rights of Persons with Disabilities (NARD) • Sawa for Development Association • Human Environmental Association for Development (HEAD) • Chreek • The Committee for the Follow-Up on Women's Issues (CFUWI) • The Lebanon Youth Parliament for Water (LYPW) in • Jouzour Loubnan • Rethinking Lebanon • Lebanese Wildlife • The Association for the protection of Jabal Moussa Reserve • Society for the Protection of Nature Lebanon (SPNL)
Egypt	• Youth Loves Egypt • Sawiris Foundation • Youthink Green Egypt • Cairo Climate Talks • Arab Network for Environment and Development (RAED)
Iraq	• Nature Iraq • Iraqi Green Climate • Waterkeepers Iraq • Together to Protect Human & the Environment Association • Humat Dijlah Association • Alaghasan Foundation for Agricultural and Environmental Development • Sama Al-Ebtikar Sdgs
Jordan	• West Asia-North Africa Institute (WANA) • Jordan Green Building Council • Royal Society for Conservation of Nature (RSCN)

Country	Stakeholders
	• Dibeen Association for Environmental Development • Jordanian Society for the Desertification Control and Badia Development (JSDCBD) • The Royal Marine Conservation Society of Jordan (JREDS) • Jordanian Climate Change & Environmental Protection Society (JOCCEPS)
Tunisia	• Tunisian Association for Agricultural and Rural Development • Association pour la Protection de l'Environnement et le Developpement Durable de Bizerte (APEDDUB) • Alternative Network of Young Tunisians(RAJ) • Youth without Borders • Women for Climate Justice Network منظمة نساء من اجل العدالة المناخية
Palestine	• Arab Youth Sustainable Development Network • Palestinian Youth Parliament • AlShabaka • Visualizing Palestine • Coalition for Accountability and Integrity • Palestinian National Institute for NGOs (PNIN) • Palestinian Wastewater Engineers Group PWEG
Morocco	• Tensift Regional Development Center • Ribat Al Fath Association for Sustainable Development • Mohammed VI Foundation for Environmental Protection • High Atlas Foundation • Coalition Marocaine pour la Justice Climatique Moroccan Coalition for Climate Justice • Mediterranean Climate House Foundation • Youth for Climate Morocco
Algeria	• Amnesty International Algeria • Green Tea

In the private sector, there are important stakeholders to include as partners in piloting new systems. These may include businesses, consultants, and small and medium enterprises. Table 5-4 includes examples.

Table 5-4: Private Sector Stakeholders

Country	Stakeholders
Lebanon	• Arcenciel • Fair Trade Lebanon

Country	Stakeholders
	• Georges N Frem Foundation • Jihad El Binaa • Berytech • Nature By Marc Beyrouthy
Egypt	• Environmental Compliance and Sustainable Development Office • ENVI-SAGE • ECOnsult • Green Environment Consultants
Iraq	• Iraq Environment Consultancy Bureau (IECB) • ENVIROSOLTECH
Jordan	• Methods for irrigation and Agriculture (MIRRA) • Business Development Center (BDC) • Jordan Climate Change Consultancy (JCCC)
Tunisia	• Agricultural Development Groups • Tunisian Union of Agriculture and Fisheries
Palestine	• EcoPeace • Annajdeh Palestinian Women's Development Society • Palestinian Consultative Staff for Developing NGOs • Build Palestine
Morocco	• Associations of Users of Agricultural Water • Resilient Communities
Algeria	• Algerian Energy Company • The Water and Sanitation Company of Constantine

Development Partners include regional and international agencies, UN Agencies, funding institutions, donors, and financial institutions (Table 5-5). These are major stakeholders as they are partners in piloting new systems, provide economic support, and support implementation and sustainable management according to their individual mandates.

Table 5-5: Development Partner Stakeholders

Country	Stakeholders
Lebanon	• LEWAP • UNDP and UNEP • FAO • GIZ • WFP

Country	Stakeholders
Egypt	• French Development Agency • World Bank • World Food Programme (WFP) • United Nations Development Programme (UNDP) • GIZ • Centre for Environment and Development for the Arab Region and Europe (CEDARE)
Iraq	• World Bank • World Food Programme (WFP) • United Nations Development Programme (UNDP) • Food and Agriculture Organization (FAO) • French Development Agency • GIZ
Jordan	• French Development Agency • World Bank • World Food Programme (WFP) • United Nations Development Programme (UNDP) • GIZ • KfW
Tunisia	• Mercy corps • (AFD) French development agency • World Bank • KfW • GIZ
Palestine	• UNEP • FAO • GIZ • WFP • DAI Palestine
Morocco	• French Development Agency • World Bank • The United States Agency for International Development • German Corporation for International • Cooperation GmbH
Algeria	• UN Women

6 Bridging the Gap to Achieve Climate Justice

It is evident that the Arab region, especially within the selected countries, is experiencing climate change challenges and is vulnerable to its impacts. Indeed, countries are not on track to achieve the SDGs that have been set out. Indeed, more than half of the measured targets under the climate theme in the Arab region will not be met unless progress accelerates (ESCWA, 2021e).

Nonetheless, as shown in the mapping of strategies, governments have missed the opportunity to incorporate climate justice principles so far. Strategies that focus on economic growth alone without incorporating climate justice principles will, in fact, exacerbate inequalities.

It is time to make those who are not visible, visible. Achieving climate justice requires changes across social, economic, political, cultural, and environmental dimensions. Integrating climate change impact and justice principles into planning will allow the strengthening of local and national actors in the management and prevention of associated risks. To do so, it is essential to bridge the gap between civil society members and organizations and governments.

This section presents the results of key expert meetings in the region and selected countries. These results are followed by an analysis of CSO challenges and opportunities to present a way forward for AFSC Middle East's work. This plan takes into consideration AFSC's Strategic Plan (2020-2030) and its goals. The way forward will be updated based on the DEP outcomes.

6.1 Outcomes of Key Expert Meetings

One-on-one meetings were held with regional and national experts and activists in the areas of climate and environmental justice, human rights, peace and conflict, food sovereignty, gender equality, and youth empowerment. The section below provides a summary of the meeting outputs. Annex 2 provides detailed meeting outputs that took place with each key expert.

Initially, the experts provided their own definition on climate justice and highlighted priorities within these definitions. Figure 6-1 presents an accumulation of expert definitions and priorities under climate justice.

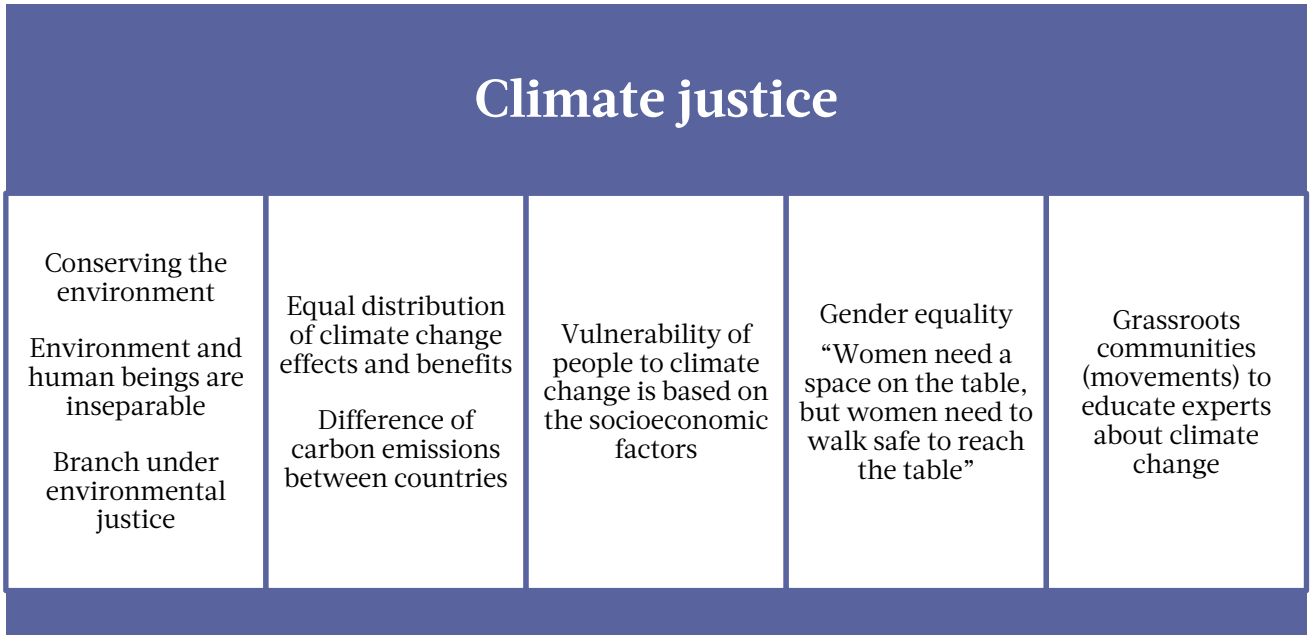


Figure 6-1: Climate Justice Definition and Issues of Highest Priority according to Expert Meetings

Experts further identified the main issues under climate justice that they believe are the top priorities for the selected countries and the region. Increasing knowledge and awareness related to climate justice was the top priority identified by experts. This includes spreading awareness of the impacts of climate change on people and the environment at all levels. This could be through integration of sustainability in the education system and by using the knowledge generated by researchers and experts to inform policy making and develop best practices.

The agriculture and fishing sector was highlighted by many as a hotspot for climate justice discussions. In that regard, promoting the sustainability of the agricultural sector under climate change impacts could be achieved using up-to-date technologies and good agriculture practices. The role of women in agriculture was also emphasised, as was the need to enhance their role and increase their resilience.

Regarding project implementation, the following principles were stressed:

- Ensuring political sovereignty on projects
- Adopting a rights-based approach
- Satisfying the needs and the struggles of the community in a sustainable manner
- Maintaining a balance between environmental and human needs

According to the experts, the major obstacles to achieving climate justice are as follows:

- At the national level, there is a lack of effective strategies and government commitment towards achieving climate justice. This includes a lack of effective decisions and actions by government, as well as a lack of funding and budgeting for climate change

adaptation projects. Furthermore, there is a lack of transparency and accountability at the government level.

- Corporate and foreign interests are often prioritized over many climate-related activities.
- Conflicts, war, and the displacement of people. Peace building initiatives are not always based on justice. For instance, programs do not take into consideration the environment and people's rights.
- Limited adaptive capacities. For example, farmers are not well supported, given adequate information, or trained to use climate smart technologies.
- Lack of financial resources and a lack of political sovereignty in making the decision on how to invest funding.
- Gender inequality and violence against women, making them more vulnerable to climate impacts.
- Lack of genuine participation of civil society and communities. CSOs are often not well supported financially and deal with repression of freedom of expression. They are often constrained from doing their work, especially regarding environmental issues. There is a gap with involving grassroots communities in the decision-making process.

Regarding bridging the gap between CSOs and governments, experts identified a few recommendations. These included:

- Developing a clear plan on priority issues as a collaborative effort between government and civil society. This includes activating committees working for the environment in relevant ministries and making sure they represent civil society needs and all areas and sectors affected by climate change. Accordingly, civil society should have a clear voice in the decision-making processes.
- Partnerships and collaboration between CSOs and governments in implementation of climate change adaptation projects. CSOs will also have a role in supervising these projects.
- Strengthening the negotiation skills of CSOs. This would develop capacity for public participation and including civil society in delegations, capacity building, negotiations, and governmental updates.
- Enhancing civil society engagement in climate change projects and offering capacity building to CSOs, as some may not be fully aware of the link between climate change and justice.
- Developing a platform that allows all sectors to discuss environmental issues together.
- Recognizing CSO leadership, removing constraints on CSO work, and creating deeper connections between movements.
- Increasing communication between CSOs and governments so that decision makers have a better understanding of the type of support needed by CSOs.

6.2 Role of CSOs: Challenges and Opportunities

Civil society is often considered as a country's 'fourth power', an idea that comes from their ability to shape the nation's current and future developmental pathways (WANA, 2018). Civil society fosters ideals and standards for behavior of individuals, groups, and organizations (UIA, 2022). In general, CSOs assess local community challenges, needs, and priorities, and communicate them to decision-makers, whilst ensuring that they are considered. Box 6-1 provides a summary of different roles of CSOs, including a major role in protecting human rights and ensuring climate justice.

Box 6-1: Role of Civil Society Organizations

Civil societies include children, women, and youth, indigenous people and communities, workers and trade unions, the scientific and technological community, business and industry, and farmers. Modalities in which CSOs contribute development include (ACTED, 2022):

- Supplying underprivileged groups with essential services such primary education, health care, water, and sanitation as well as housing, counselling, and support services.
- Requesting effective public services from the relevant authorities.
- Fostering political engagement, advocating for change, and influencing governmental policy.
- Supervising the government and other service providers and holding them responsible for their actions.
- Taking part in local planning and fostering social innovation.
- Advocating for human rights, their constituents' interests, and the priorities of underrepresented groups.

In the Arab region, CSOs have mostly been involved in providing relief and support services. CSOs have also debated their relationship with governments especially in terms of its value, relevance, and effectiveness (Abdel Samad, 2007). A recent study on Morocco, Lebanon, Tunisia, and Jordan found that governmental practices such as lengthening and complicating basic procedures and threatening or harassing CSOs have undermined the effort of enabling laws that encourage civic freedoms. In other cases, restrictive laws were less constraining due to lax enforcement.

For instance, in Jordan where legal frameworks are relatively restrictive compared to other countries, CSOs were comparatively optimistic about their access to various rights (ICNL/Beyond Reform & Development/Menapolis, 2018). CSOs in the Arab region face multiple challenges. These include (WANA, 2018):

- Limited understanding of their legislative role and their ability to impact change. As such, CSOs mostly focus on providing services over their advocacy and legislative reform roles.
- Absence of coordination among CSOs where they compete rather than collaborate.
- Lack of government efforts to involve CSOs and a lack of clear legislative provisions that stipulate how CSOs can be involved. A survey showed that the majority of CSO stakeholders (95% in Jordan, 80% in Tunisia, 63% in Lebanon and 59% in Morocco) believed that the law either does not provide for CSO participation in policy and legislative processes at the national level or only partially provides for it (ICNL/Beyond Reform & Development/Menapolis, 2018).
- Limited funding poses a challenge to sustaining long-term projects, undermining their continuity and sustainability. One of the major sources of funding in the last fifty years has been bilateral and multilateral assistance from industrialized nations or international institutions like the United Nations and the World Bank. Additional sources include private charities, foundations, and local governments (sometimes collaborating with these efforts) as well as donors. (Funds for NGOs, 2022).
- Limited specialization among CSOs.

To bridge the gap between CSOs and governments, CSOs require the following support:

- Establishment of alliances and coalitions among CSOs and NGOs, as well as national authorities. A consistently updated directory of all operating CSOs that provides an overview of the work each institution is doing.
- Freedom to work independently and impartially, and not be restricted excessively by the government.
- Involvement of CSOs with the government through parliamentarian committees to discuss draft laws. CSOs should inform policy-makers on the local impacts of legislation and advise on local needs. CSOs can also carry out field research to determine the expected impacts of proposed legislation.
- Establishing a council or body that coordinates efforts by CSOs and government institutions through regular meetings and supporting associations and unions.
- Monitoring government efforts by publishing periodic reports on the government commitment to community needs.
- Increasing the awareness of government employees to the importance of including CSOs.
- Enhancing partnerships and funding opportunities through increased transparency and good governance on the part of CSOs. CSOs could publish annual work plans detailing their objectives, finances, and achievements. This could help CSOs struggling with proposal writing.
- Developing the skills of CSO staff to respond to changing needs.
- Encouraging the media to impact public opinion and document the work of CSOs by sharing success stories.

7 Climate Justice DEP

The DEP on "Climate Justice: Bridging the Gaps Between Governments and Civil Society in MENA Region" was held in Amman, Jordan between March 6 and 9, 2023. It included participants and activists representing countries of the region including Egypt, Jordan, Lebanon, Morocco, Palestine, and Tunisia.

The main objective of the DEP was to provide a safe setting for participants to discuss issues on climate justice and share their knowledge and experience in the field. The DEP format allowed for ample discussion between stakeholders with different backgrounds. It facilitated (1) reframing of climate justice principles based on the regional context, (2) identifying common challenges faced by CSOs (3) and presenting opportunities for bridging the gap between CSOs and governments. Participants also referenced their experiences in the field to highlight priority actions needed to reinforce climate justice and to distinguish between active versus powerful stakeholders in their countries. Most importantly, this DEP allowed participants opportunities to connect and discuss collaboration and partnership opportunities.

7.1 Reframing Climate Justice Principles

A comprehensive discussion on climate justice terminology suggested that the participants had a deep understanding of the issues of the Arab region. They related climate justice to the following concepts:

- Accountability from the Global North due to their high contributions to emissions and thus climate change through compensation for losses and damages.
- Equal access to natural resources, especially for marginalized groups.
- Opportunities to increase adaptation and resilience.
- Protection of human rights, including women's rights.
- Ending subsidies for new fossil fuel projects/extraction.
- Ending resource exploitation in the Global South and demanding mitigation.
- The role of information access in achieving climate justice.

In response to the question: "What terms come to your mind when we say Climate Justice?", participants provided the terms found in Figure 7-1.

Figure 7-1: Terminology Used to Define Climate Justice by DEP Participants

The impact of war, occupation, and conflict were highlighted in discussions due to their relevance to climate justice issues. The term "Climate Hypocrisy",[7] was used in reference to Global North countries pressuring Global South countries to implement climate mitigation actions even though the Global North's historical and current emissions are the main cause of the climate crisis. In addition, the actions of the international community have been reactive rather than proactive or preventive.

There was a consensus among participants that the term "climate justice" has not been frequently used in countries. However, discrepancies in climate justice issues were also highlighted between countries.

In **Egypt**, COP 27 was used as an opportunity to raise awareness about climate change and the role of the public. Nonetheless, there is still an apprehension concerning the terminology of climate justice because it is related to human rights.

In **Jordan**, climate justice was linked to technological development and separated from political and human rights discourse. The colonization of action to combat climate change is a critical issue as the strategies of ministries and CSOs are dictated by the priorities of funders.

In **Lebanon**, the impacts of climate change are highly visible. Nonetheless, the correlation between climate justice and socioeconomic themes is missing, especially as Lebanon is in crisis mode following the collapse of its economy and public sector.

In **Morocco**, the impact of climate change has been quite evident. In response, the government has adopted "The Strategy of the Green Generation" to promote sustainable development in the country. However, there remains a lack of awareness on climate justice issues and their connection to development issues.

In **Palestine**, due to the Israeli occupation and the resulting challenges to daily life, pursuing climate justice is considered a luxury. Continuous and systematic violations of environmental rights of the Palestinian people persist. More land and resources are stolen with Israel using greenwashing to normalize its occupation. Israel controls most groundwater resources accessible to Palestinians and denies them equitable and just access. As such, Palestinians must purchase their own water from Israel at steep prices.

In **Tunisia**, like in the other countries, the dire economic situation means that climate justice is considered a luxury. People's priorities are more focused on immediate needs

[7] Climate Hypocrisy was frequently mentioned throughout the DEP in multiple contexts including within the Palestinian context of war and the lack of political will to change current trends.

such as financial stability and education. The official discourse does not adopt climate justice.

In conclusion, participants were able to categorize and reframe climate justice concepts based on their own notions and relevance to the region. They identified three main pillars and indicators to each pillar as shown in Figure 7-2.

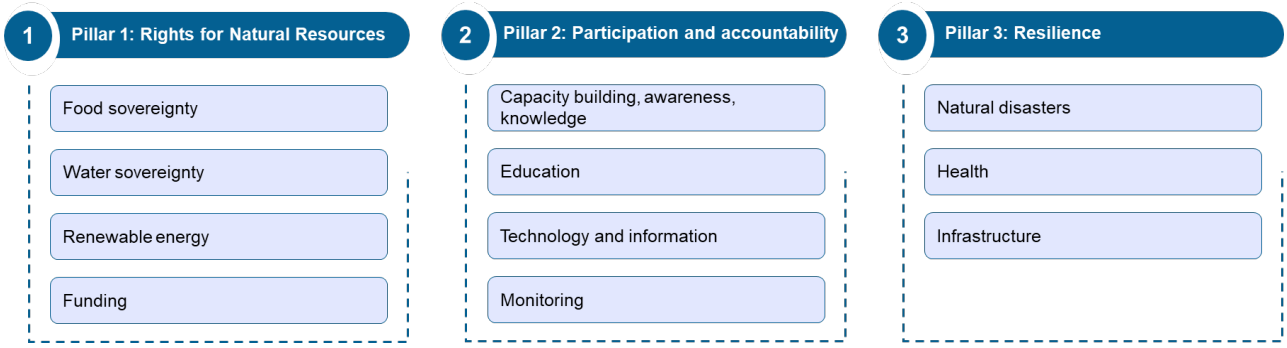


Figure 7-2: Pillars and Relevant Indicators to Reframe Climate Justice

7.2 CSO Challenges

The participants presented the challenges faced by CSOs regarding their exclusion from climate justice discourse that deepens the gap between CSOs and governments. They distinguished between financial, technical, knowledge and awareness, and institutional challenges. In some cases, the challenges were general, and in others they were situationally specific.

1) **CSOs face financial challenges, especially access to funding and a lack of transparency with existing funding mechanisms.**

It was highlighted that external funding usually dictates the project type. The priorities of funders guide projects, and in many cases these priorities are not in alignment with the country's strategies and needs. Funding periods and timing are often limited based on donors' requirements and miss incorporating the time needed for efficient and effective outcomes. This is accompanied by no or limited national political positions dictating funding priorities and needs and weak or absent local or national financing.

CSOs face difficulties in accessing funding for climate justice advocacy activities due to a lack of information about existing financing opportunities. There is also a monopoly on such funding by specific organizations preferred by funders. This results in the selection of CSOs often not being transparent. In addition, participants noted difficulty in opening bank accounts for CSOs. As a result, CSO activities rely mostly on volunteers due to limited funding for full-time staff, leading to a lack of sustainable work.

2) **CSOs lack the technical capacities and specialization needed to tackle climate justice.**

Most stakeholders noted that limited availability of Arabic content prevents Arabic-speaking CSOs from engaging in climate justice issues. There is a lack of scientific research on issues of climate justice in the region and limited CSO specialization in relevant topics. In some cases, knowledge generated from international research is not suitable for the region.

Insufficient technical capabilities, a lack of opportunities for exchanging experiences and knowledge, and inequality in technological education and employment have made it so that only a small fraction of CSOs can remain active.

Other challenges include limited access to data, weak technological infrastructure, and weak national investment in employing technological solutions.

3) **CSOs face institutional challenges that hinder effective work.**

There was a consensus that governments do not consider CSOs as essential partners. This is apparent in the absence of legislation supporting CSO work, the limited representation of CSOs in relevant national committees, and a lack of support for CSOs at the international level. In fact, many CSOs face various difficulties and obstacles related to the registration of associations and organizations. As such, in some countries, it is easier for them to register as a social enterprise/profitable organization.

In some cases, it was mentioned that governments interfere with the work of CSOs. For example, the Israeli government systematically targets CSOs in Palestine, making it virtually impossible for them to operate.

7.3 Opportunities to Enhance the Role of CSOs and Bridge the Gaps

Participants were able to provide multiple areas in which CSOs may support climate justice work. These include:

- Knowledge production and scientific research
- Education and awareness raising campaigns
- Community involvement
- Observation and accountability
- Environmental media support
- Development of national plans to adapt to climate change
- Encouraging and motivating youth initiatives and local sustainable solutions
- Identifying means of adapting and creating alternatives
- Studying the effect of climate change on women and finding solutions
- Lobbying for sustainable management of natural resources

- Creating spaces/platforms to make the voice of societies heard

To amplify the role of CSOs in climate justice work and overcome the challenges listed, it is essential to bridge the gap between CSOs and governments.

There is a need for long term strategies for collaboration between CSOs and governments. For instance, it is essential to include communities in setting, implementing, and monitoring local plans. Governments also need to work in collaboration with CSOs to develop specific and clear strategies to ensure climate justice projects are based on the priorities of the country and not just on donor agendas.

Participants also discussed the need to build capacities of (a) media to enhance the role of environmental and climate journalism, (b) youth to be involved in environmental fields, (c) educational institutions to update their curricula, and (d) CSOs to enhance their access to knowledge and information. To that end, data digitization was highly recommended.

Participants also recommended a unified reference platform with information about relevant experts in the field and their contact information. This platform would also map climate justice activities and provide up-to-date research in the Arabic language. Furthermore, advocacy strategies need to be developed to support CSOs working on climate justice issues.

At another level, much of the discussion centered on enhancing meaningful partnerships and collaboration. CSOs need to benefit from the work of academic institutions and to take advantage of international momentum to enhance their representation. CSOs also need to increase collaboration between each other under joint topics to complement and support each other's work.

At the level of public institutions, it is essential that they improve data sharing and include CSOs as integral actors during the planning, implementation, and monitoring stages of activities. Furthermore, policy makers should ensure that their policies and practices are based on the country's needs and not the priorities of funding organizations.

Other issues that were discussed include the need to emphasize local knowledge, enhance networking, and improve access to funding and knowledge on how to access it.

7.4 Quotes from Participants

"We should also focus on the importance of youth inclusion, as no one who is much older than me should make decisions about my future."

“Most crucial decisions related to climate are being made behind closed doors. These decisions are made by politicians and companies that responsible for emitting greenhouse gases.”

“There is a difference between civil society in our countries and civil society in the North. In the North, civil society goes to the COPS well prepared and trained. They understand the terminology and know how negotiations work. They also have easier access to funding.”

“We still lack awareness; we still lack specialized courts and lawyers. For example, the same judge who works on criminal cases also works on environmental cases.”

8 The Way Forward

Based on the literature and key expert discussions, this section identifies opportunities of work under climate justice using AFSC's identified goals. AFSC's vision is towards a "just, peaceful, and sustainable world free of violence, inequality, and oppression". The AFSC Strategic Plan (2020-2030) identifies three major program goals along with objectives for each goal. These include ***just and sustainable peace; just economies; and just response to forced displacement and migration***.

Climate justice will inform efforts towards each goal. Recommendations from the DEP were used to plan the way forward and identify best practices for effective change in the Arab region. These are opportunities to bridge the gap between national governments and CSOs.

Goal 1: Just and Sustainable Peace: "Through influencing governments, multilateral organizations, and companies to divest from militarism and advance peace building, dismantling systems of incarceration, surveillance, policing, and other forms of state control and replace them with human-centered alternatives, ensuring advanced civil liberties, rights and cooperation through the protection and expansion of civic space and finally through fostering resilient and cohesive communities and building systems rooted in transformation and healing". This may be through:

- Enhancing research on climate change impacts and climate justice issues at regional, national, and local levels.
- Encouraging investments in research involved in adapting and developing technologies to cope with climate change impacts and promote climate justice.
- Engaging and educating civil society on climate change and issues. This could be through promoting and disseminating knowledge and information on impacts of climate change on people and the environment. This could also be through implementing additional DEPs.
- Addressing the knowledge gap that policy makers face regarding climate justice and inequality issues. Strengthening the interfacing between science and policy to tackle climate change. Ensuring the prioritization of women and youth in climate change issues and related goals as well as in national strategies and action plans.
- Connecting academia, civil society, and government together through developing a clear plan. Working in alliance with civil society in order to present priority issues. A DEP that engages all actors is essential to provide a safe space for such discussions.

Goal 2: Just Economies: "Through moving to shared and sustainable prosperity, creating conditions to overcome structural socioeconomic inequalities linked to race, ethnicity, gender identity, age, class and geography and by promoting local economic efforts and organizations that model transformational alternatives based on solidarity and sustainability for all". This may be through:

- Capacity building and technology transfer programs targeting farmers, especially women farmers. Promoting climate smart agriculture as well as supporting the utilization of smart irrigation and improved farm irrigation management.
- Understanding socioeconomic and environmental trends and engaging local communities and civil society. Encouraging youth and women's political and economic participation.
- Ensuring that environmental projects are rights-based to satisfy the needs and the struggles of the community in a sustainable manner.
- Promoting knowledge of CSOs on different funding mechanisms and ways in which they can access funding.

Goal 3: Just Response to Forced Displacement and Migration: "Through creating and upholding human systems to improve the situation of people who have been forcibly displaced and migrants, demilitarizing borders and providing humanitarian assistance to people on the move, ensuring that the socioeconomic, cultural, civil, political, and environmental rights of forcibly displaced people and migrants are respected by individuals, communities and societies and finally by ensuring that these people have agency and lead initiatives to build resilient communities". This may be through:

- Advocating for ending hostilities and violence. There can be no sustainable recovery without peace, nor can conflict-affected countries achieve such progress alone. Meanwhile, short-term coping mechanisms should be promoted and expanded to cover increased vulnerability.
- Strengthening regional collaboration especially between countries facing similar risks or those that can complement and support each other. This can include regional cooperation on climate risk management and emergency preparedness as well as the establishment of dedicated regional projects.
- Encouraging governments to increase investment in climate adaptation and the rehabilitation and maintenance of infrastructure, especially water and sanitation facilities.
- Promoting rights to water access and food sovereignty during times of conflict.
- Promoting greater investments from multilateral entities and donor countries in local and national capacity. Enabling countries to more effectively manage and prevent risks in a sustainable manner.

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Annex 1: Current Status and Climate Change Projections for Selected Countries

Country	Current Status	Climate Change Projections
Lebanon	• The cost of environmental degradation rose from 3.4% of GDP in 2011 to 4.4% in 2018. GDP fell from around 52$ billion in 2019 to a projected 21.8$ billion in 2021[8]. • Since October 2019, one in five workers have lost their jobs and 61% of formal firms decreased the number of permanent workers by an average of 43%[9]. Micro, small, and medium enterprises, cooperatives, entrepreneurs as well as small-scale farmers have been struggling to finance their minimum recovery and sustainability needs[10]. • The multidimensional poverty rate doubled from 42% in 2019 to 82% of the total population in 2021[11]. • Nearly 1.7 million people have access to only 35 liters of water a day, a decrease of almost 80% against the national average of 165 liters pre-2020. Since 2020, there has been an increase of 35% of the price of private sector bulk water supplies, while the cost of bottled water has doubled[12]. • Water costs are estimated to skyrocket by 200% a month when securing water from alternative or private water suppliers. This represents around 263% of the monthly average income.[13]	• An increase in temperature of 1.2°C by mid-century and over 2°C by 2100 with a reduction of 6–8% of the total volume of water resources with the increase in 1°C and 12 -16% with a 2°C rise. • A decrease in precipitation of 4-11% with drier conditions by the end of the century (up to 5 mm decrease in average monthly precipitation). • An increased trend of warming, reaching up to 15 additional days with maximum daily temperature higher than 35°C. An increase in the number of CDD when precipitation is less than 1.0 mm by the end of the century. • An increased incidence of drought conditions due to longer and geographically expanded drought periods, resulting in a hotter and drier climate. • A continued sea level rise of 30-60 cm between 2020 and 2050.[15]

[8] UNDP/UNICEF/UNHCR/MoE. (2021). Lebanon State of the Environment Report: Turning the Crises into Opportunities
[9] GoL/UN. (2022). Lebanon Crisis Response Plan 2022-2023
[10] Ibid
[11] ESCWA. (2021). Multidimensional poverty in Lebanon (2019-2021). Painful reality and uncertain prospects
[12] UNICEF. (2021). Water supply systems on the verge of collapse in Lebanon. Press Release on 23 July 2021
[13] UNICEF. (2021). Water supply systems on the verge of collapse in Lebanon. Press Release on 23 July 2021
[15] MoE/UNDP/GEF. (2016). Lebanon's Third National Communication to the UNFCCC. Beirut, Lebanon.

Country	Current Status	Climate Change Projections
	• About 1.4 million rural inhabitants live in rainfed areas with high drought frequency or irrigated areas with high water stress[14].	
Jordan	• Unemployment rates reached 19.1% even before COVID-19[16]. During the fourth quarter of 2021, Jordan's unemployment rate was 23.3% (women's unemployment at 30.7%, men's unemployment at 21.4% and youth unemployment at 50% in May 2021[17]). • In 2021, the population reached around 11 million, 74% of whom are below the age of 30[18]. The most populated governorates are Amman, Irbid and Zarqa[19]. 53% of population are vulnerable to food insecurity[20]. In general, women and girls are more likely to face food insecurity due to gender-based structural and socio-cultural inequalities[21]. • 90% of Jordan's cereal requirements is imported, making them vulnerable to international market shocks[22]. • Large areas of productive rain-fed agricultural land have been lost to urban expansion as well as by the lack of adequate water quality for irrigation[23].	• All models predict a warmer climate with strong confidence in temperature increase. In 2070-2100, the average temperature increase could reach +2.1°C [+1.7 to +3.1°C] under the RCP 4.5 scenario, and +4°C [3.8- 5.1°C] under RCP 8.5. • Dynamic projections predict a drier climate with medium confidence. In 2070-2100, the cumulated precipitation could decrease by 15% [-6% to -25%] using RCP 4.5 scenario and by – 21% [-9% to -35%] under RCP 8.5. The decrease would be more marked in the western part of the country. • Future projections also indicate more droughts, where the maximum number of consecutive dry days would increase in the reference model of more than 30 days for the 2070-2100 period. In contrast, annual values still show possible heavy rainy events at the end of the

[14] WHO/UNFCCC. (2021). Health and Climate Change: Country Profile 2021: Lebanon
[16] Jordan Strategy Forum. (2022). The Unemployment Challenge in Jordan: Between Demand & Supply.
[17] WFP. (2022). Jordan Country Brief March 2022
[18] Ibid
[19] Jordan Department of Statistics. (2021). Estimated population of 2021 and some of selected data. Statistical Year Book of Jordan 2021. Estimated population of 2021 and some of selected data.
[20] UN Jordan. (2022). Policy Brief Towards the Implementation of Jordan's Food Security Strategy
[21] WFP. (2019). Jordan Country Strategic Plan 2020-2022
[22] Ibid
[23] Ministry of Planning and International Cooperation. (2020). Jordan Response Plan for the Syria Crisis 2020-2022

Country	Current Status	Climate Change Projections
	• Demand for water will exceed supply by 30% over the next decade, due to population and economic growth[24]. • Access to safely managed water was reported at 93.8%. Only 80.6% had access to safely managed sanitation services[25].	century. More intense droughts would be (partly) compensated by rainy years, in a context of a general decrease of precipitation. Potential evaporation would increase for instance median value of precipitation decrease reaching -35% in autumn in 2070-2100. • Dynamic projections predict more heat waves with high confidence. The analysis of summer temperature, monthly values and the inter-annual variability reveal that some thresholds could be exceeded. For instance, in pessimistic but possible projections, for a summer month, the average maximum temperature for the whole country could exceed 42-44°C.[26]
Palestine	• In 2017, around 29% of the people in Palestine lived in poverty. This includes 29.7% of females and 28.8% of males. A higher poverty rate was observed in the Gaza Strip at around 53% compared to 13.9% in the West Bank[27]. Unstable conditions also negatively affected employment in Palestine, as unemployment rates rose from 10.6% in the early 2000s to almost 25% in 2021 (with female unemployment at 42.8% and male unemployment at 21.2%)[28].	• Temperatures are projected to increase by approximately 2°C by 2055 and approximately 3°C by 2090. • Cold periods and warm periods are expected to become shorter, but more prominent, over time. • One GHG emissions scenario of possible climate change impacts suggests precipitation is expected to remain the same or increase slightly. Two other scenarios anticipate a decrease in rainfall and increased seasonal variation over the course of the 21st century.

[24] WFP. (2019). Jordan Country Strategic Plan 2020-2022

[25] UNICEF, WASH Cluster. (2021). Water Supply, Sanitation and Hygiene. Jordan Working Group Terms of Reference.

[26] GEF/UNDP. (2014). Jordan's Third National Communication on Climate Change.

[27] UN/State of Palestine. (2020). Atlas for Sustainable Development.

[28] World Bank. (2022). Statistical Database: Unemployment (modeled ILO estimate) – West Bank and Gaza.

Country	Current Status	Climate Change Projections
	• The percentage of youth not in education, employment or training reached 32% in Palestine in 2021[29], with the youth unemployment rate reaching 40% in the West Bank and 62% in Gaza[30]. • The percentage of children enrolled in basic education reached 95.4%, which highlights the high value of education among Palestinian families[31]. Although this percentage is considered high, there are remaining challenges related to access to schools that continue to exist in Palestine and the continued school enrollment of adolescent children and children with disabilities. • According to WFP, around 1.79 million Palestinian, consisting of approximately 33% of the population, are food insecure. Of these, 1.1 million people suffer from severe food insecurity, around 90% of whom live in the Gaza Strip. Higher food insecurity rates are observed among Palestinian women, whereby 33.7% of female-headed households suffer from food insecurity, with worse numbers recorded in Gaza, where this percentage reaches 64%[32]. • The Palestinian population connected to a water network have an average daily water consumption rate that falls below the WHO's minimum recommended amount and equals around 33% of the daily water consumption in Israel[33]. Some vulnerable Palestinian communities consume	• Drought events, heat waves, and drastic changes in temperatures during summer, as well as more intense rainfall events, are expected throughout the coming years. • Sea level is projected to increase by 0.1-0.4 m by 2100 along the Gaza coastline.[36]

[29] World Bank. (2022). Statistical Database: Share of youth not in education, employment, or training – West Bank and Gaza.
[30] World Bank. (2022). Statistical Database: The World Bank in West Bank and Gaza.
[31] UNICEF. (2022). Education and adolescents: Working to ensure that all Palestinian children and adolescents grow up in a safe environment and have access to quality basic education.
[32] WFP. (2022). WFP Palestine Country Brief.
[33] WFP. (2022). WFP Palestine Country Brief.
[36] State of Palestine Environment Quality Authority. (2016). Initial National Communication Report to the United Nations Framework Convention on Climate Change (UNFCCC).

Country	Current Status	Climate Change Projections
	less than 50 liters of water per day, which is considered water insecure[34]. In addition, the water in Gaza is becoming undrinkable as increased groundwater abstraction are leading to saltwater intrusion[35].	
Iraq	• Protracted periods of conflict and violence have left more than 3.2 million primary school age children without education in the country[37]. • Highest poverty rate of all upper-middle-income countries with poverty rate reaching 31.7% in 2020, mostly for women. More than 60% of women's work is unpaid, with a big difference in the unemployment rate between women (31%) and men (10%)[38]. • Around 2 million people had insufficient food consumption in 2021[39]. Duhok, Erbil, Ninewa and Salah Al-Din are the governorates with the most severely food insecure internally displaced persons[40]. • At least seven million people have been affected by water shortages in recent years. In 2017, less than half of rural population could not use safely managed drinking water services.[41]	• The temperature is projected to increase by 0.4°C, 1.2°C, and 2.4°C for B1, A1B, and A2, respectively, in 2099, while the precipitation is projected to greatest decrease under A1B from 121 mm in 2050 to 104 mm in 2099[44]. • RCP 4.5 projections at mid-century suggest an increase of about 2°C. Projections for RCP8.5 at mid-century are spatially similar to the RCP4.5 scenario at the same time period, but with an additional 1°C temperature increase. By end-century, the warming clearly intensifies, reaching 7°C.[45] • Decrease in annual precipitation is more remarkable in the northern parts of Iraq (Sulaymaniyah, Salah ad Din, and Zakho) than those in the southern part of the

[34] State of Palestine: Atlas for sustainable development. (2020). The United Nations and the State of Palestine.
[35] World Bank. (2018). Securing Water for Development in West Bank and Gaza.
[37] UN. (2022). Iraq Common Country Analysis 2021
[38] ESCWA. (2020).Regional Gender Gap Report
[39] WFP. (2022). Iraq Annual Country Report 2021: Country Strategic Plan 2020 – 2024
[40] UN. (2022). Iraq Common Country Analysis 2021
[41] The Arab Gender Gap Report. (2020). Gender Equality and the Sustainable Development Goals
[44] Hashim et al. (2022) used the Coupled Global Climate Model (CCSM3) based on the National Center for Atmospheric (NCAR) to study the changes of temperature and precipitation during the twenty-first century, under the Special Report on Emissions Scenarios (SRES), which includes the low B1, medium A1B, and high A2 future emission scenarios.
[45] Melesse, A. M., Abtew, W., & Setegn, S. G. (Eds.). (2014). Nile River basin: ecohydrological challenges, climate change and hydropolitics. Cham: Springer International Publishing.

Country	Current Status	Climate Change Projections
	• More than 2.2 million people are in critical need of sustained, equitable access to safe and appropriate water, sanitation, and hygiene (WASH) services across Iraq. Out of this number, 52% are female, 47% are children, and 4% are elderly[42]. • Communities in the south are notably vulnerable to the impact of climate change, given the higher poverty rates and the dependence on the marshlands and Iraq's rivers for livelihoods[43].	country. The greatest decrease in annual precipitation is expected in Sulaymaniyah at the end of 2080s under RCP 8.5, while the lowest decrease is expected in Najaf station.[46]
Egypt	• The national poverty rate increased from 27.8% in 2015 to 32.5% in 2018[47], with rural residents from the Upper Egypt area being the most affected by poverty. For example, 66.7% of Asyut Governorate residents live in poverty. • Main challenges of the food sector include food affordability, quality, and safety as more than half of Egypt's food staples depend on global markets[48]. • About 80% of Egypt's wheat is imported from Ukraine and Russia, which hinders the ability of the vulnerable people to access food[49]. • The agricultural sector accounts for more than one-fourth of employment[50].	• Expected to experience a change in annual mean temperature from 1.8°C to 5.2°C by the 2080s. • Maximum temperatures are expected to increase by 2.1°C to 5.7°C by the 2080s, with minimum temperatures increasing by 1.5°C to 4.6°C over the same period. • Heat waves will also increase significantly in their severity, frequency, and duration, with heat waves expected to last an additional 9 days to as much as an additional 77 days. Cold spells will decrease.[54]

[42] UN. (2022). Iraq Common Country Analysis 2021

[43] UN. (2022). Iraq Common Country Analysis 2021

[46] Al-Mukhtar, M., & Qasim, M. (2019). Future predictions of precipitation and temperature in Iraq using the statistical downscaling model. Arabian journal of geosciences, 12(2), 1-16.

[47] Central Agency for Public Mobilization and Statistics (CAPMAS). (2018). Poverty Indicators According to Household Income, Expenditure, and Consumption Survey 2018.

[48] WFP. (2021). Annual country reports – Egypt.

[49] WFP. (2022). Egypt Country Brief.

[50] USAID. (2022). Egypt Fact Sheet: Agriculture.

[54] World Bank. (2020). Egypt Projected Future Climate.

Country	Current Status	Climate Change Projections
	• In 2014, around 7.3 million people did not have access to safe drinking water, 80% of whom live in rural areas[51]. Around 10% of the Egyptian people were deprived from access to improved sanitation[52]. • The second leading cause of death among children under 5 in Egypt is diarrhea, leading to 4,000 deaths a year mostly from dehydration[53].	• By mid-century, temperatures are expected to increase between 2°C to 3°C, with the highest increases occurring in the summer months of July to September[55]. • Rainfall trends are highly variable. Analysis from GERICS[56] GCMs indicate that the reduction in precipitation, observed over the past 30 years, is expected to continue by the end of the century. Projections indicate a trend of even longer dry spells and the possibility of dry spells to increase by 75 days by the 2080s. While overall, annual mean precipitation is expected to decrease, the intensity of heavy rain events is expected to increase by the 2080s[57].
Tunisia	• Around 100,000 children in Tunisia are not in school[58]. The percentage of school attendance of children, adolescents, and young people at compulsory school age for lower secondary and high school levels reached 69.2% among boys and 76.6% among girls. There is a noticeable difference between urban and rural areas, with the Kasserine area showing the lowest attendance[59].	• Projected increase in mean annual temperature from 1.9°C to 5.3°C by the 2080s. Maximum temperatures are expected to increase by 2.3°C to as much as 6.4°C by the 2080s. This is also likely to result in longer lasting and more intense heat waves, with an increase in heat waves by up to an additional 78 days per year by the 2080s; cold

[51] Ministry of Health and Population. (2014). Egypt Demographic and Health Survey 2014.
[52] Ministry of Health and Population. (2014). Egypt Demographic and Health Survey 2014
[53] World Health Organization. (2015). World Health Statistics 2015
[55] USAID. (2018). Climate Risk Profile – Egypt. Fact Sheet
[56] GERICS. (2019a). Climate Fact Sheet – Egypt
[57] GERICS. (2019a). Climate Fact Sheet – Egypt
[58] UNICEF. (2019). Tunisia WASH Thematic Report.
[59] Ibid.

Country	Current Status	Climate Change Projections
	• Unemployment rate rose slightly from around 15% in 2018 and 2019 to 17% in 2021. Female unemployment reached almost 25% compared to a 13.7% male unemployment rate[60]. • Percentage of poor people estimated within the 3.2 USD/day poverty line has increased from 2.9% to 3.7%, and the percentage of vulnerable people, at risk to fall in poverty, computed using the 5.5 USD per day threshold, is expected to rise from 16.7% to 20.1%[61]. Poverty levels in rural areas (26%) are higher than in urban areas (10%)[62]. • The three-year average of moderately and severely food insecure people increased from 2 million (18.2%) during 2014-2016 to 2.9 million (25.1%) during 2018-2020. Additionally, the three-year average of undernourished people reached 0.3 million during 2018-2020, and in 2020 8.6% of children under 5 were classified as stunted[63]. • Tunisia imports half of its cereal needs, 60% of which is intended to feed livestock[64].	nights and cold spells are also expected to significantly decline. [67] • Across all emission scenarios, temperatures will continue to increase for Tunisia throughout the end of the century. Under a high-emission scenario, average temperatures will increase rapidly by mid-century. Across the seasonal cycle, temperature increases will spike from October to April with daily temperatures greater than 25°C[68]. • Analysis from GERICS[69] indicate that the reduction in precipitation observed over the past 30 years is expected to continue through the end of the century. Projections indicate reduced precipitation and a trend of longer and more frequent dry spells. Additionally, an increase in the intensity of heavy rainfall events is expected under high emissions scenarios. This will also affect the water balance for the country, with the majority of projections indicating a decrease in water balance by the 2080s. • Sea level rise is projected to lead to the loss of a sizable proportion of the northern and eastern coastlines due to a combination of inundation and erosion, with

[60] World Bank Statistical Database. (2022). Unemployment (modeled ILO estimate) – Tunisia.
[61] World Bank. (2022). The World Bank in Tunisia.
[62] WFP. (2018). Tunisia Country Strategic Plan (2018-2022).
[63] FAO. (2022). FAOSTAT – Tunisia.
[64] Agence Tunis Afrique Presse. (2021). Acting Agriculture Minister calls for reflection on new food system in Tunisia.
[67] According to analysis from GERICS (2019b) of 32 GCMs
[68] GERICS. (2019b). Climate Fact Sheet – Tunisia
[69] Ibid.

Country	Current Status	Climate Change Projections
	• The percentage of the population having access to basic drinking water services reached 97% in 2020[65] with 80% having access to safely managed sanitation services (89% in urban areas and 63% in rural areas) [66].	consequential loss of agricultural land, infrastructure, and urban areas[70]. • Increasing temperatures are of increasing concern for Tunisia. The expected number of days with a Heat Index >35°C is projected to show a sharp increase by mid-century and continue to sharply increase by end of the century, under a high-emission scenario. Night temperatures (>20°C) are also expected to rapidly increase in a high-emission scenario[71].
Morocco	• In 2019, the average schooling length in Morocco was 5.6 years, with 6.6 years for men and 4.7 years for women[72]. The illiteracy rate in Morocco exceeded 30%, with 22% among males and 42% among females[73]. In rural areas, the illiteracy rate (48%) is twice as high as in urban areas (22%), with worse numbers observed among women, whereby 60% of women in rural areas were illiterate compared to 31% in urban areas[74]. • Unemployment rate dropped from 13.6% in 2000 to 9.3% in 2019, only to reach back up to 11.5% in 2021[75], with a worse rate among women. In 2021, 25.7% of women were unemployed[76]. In 2019, 22% of Morocco's youth were	• Mean annual temperature is projected to increase by 1.5°C to 3.5°C by mid-century and by more than 5°C by end-century with the highest increases expected from May to October. • Faster warming rates are projected in the country's interior. The number of hot days is expected to increase, with July, August, and September having the highest share.

[65] FAO. (2022). FAOSTAT – Tunisia.
[66] World Bank Statistical Database. (2022). People using safely managed sanitation services – Tunisia.
[70] Reimann, Lena, Athanasios T. Vafeidis, Sally Brown, Jochen Hinkel, and Richard SJ Tol. (2018). Mediterranean UNESCO World Heritage at risk from coastal flooding and erosion due to sea-level rise. Nature communications 9, no. 1: 1-11.
[71] CCKP. (2020). Tunisia Health Sector Dashboard. World Bank Climate Change Knowledge Portal.
[72] UNDP. (2020). Human Development Report 2020: The Next Frontier Human Development and the Anthropocene.
[73] HCP. (2016). Presentation of the Results of the National Survey on Household Consumption and Expenditure 2013/2014. Kingdom of Morocco.
[74] ADB, EBRD, and EIB. (2021). Private Sector Development in Morocco: Challenges and Opportunities in Time of COVID-19.
[75] World Bank Statistical Database. (2022). Unemployment, total (% of total labor force) (modeled ILO estimate) – Morocco.
[76] Ibid.

Country	Current Status	Climate Change Projections
	unemployed[77]. In addition, during the pandemic, approximately two-thirds of the employed workers had to temporarily stop their activity[78]. • In 2018, 1.6 million people in Morocco were poor, and one in eight Moroccans were considered vulnerable to falling in poverty[79]. Poverty rates in rural areas were twice as high as the national poverty rate, whereby people living in rural areas accounted for 79.4% of Morocco's poor.[80] • The COVID-19 pandemic, the extreme drought events in North Africa, and the war in Ukraine have had negative impacts on food security in Morocco[81]. The three-year average (2018 to 2020) of moderately and severely food insecure people in Morocco reached 10.2 million people[82]. • The agricultural sector accounts for around 12% of Morocco's GDP and contributes to more than 30% of employment. However, this sector is vulnerable to unfavorable weather conditions, in particular severe droughts[83]. Additionally, Morocco is highly dependent on imported cereals, the major staple of poor and vulnerable Moroccans. More than 50% of the agricultural imports of Morocco are cereals, which makes Morocco more exposed to the effects of the Russian-Ukrainian war[84].	• Average annual rainfall across the country is projected to decrease from 10%–20% to as high as a 30% decrease for the Saharan region. Winter precipitation will be reduced as warming increases. Evaporation will also increase due to temperature rise which will decrease soil moisture. Therefore, the availability of irrigation water will continue to be stressed.[86]

[77] World Bank Statistical Database. (2022). Labor force, female (% of total labor force) – Morocco.
[78] Haut Commissariat au Plan (HCP). (2020). Répercussions de la Pandémie COVID-19 sur la Situation Economique des Ménages. Kingdom of Morocco.
[79] Oxfam. (2019). An egalitarian Morocco, fair taxation.
[80] WB. (2019). Morocco Digital and Climate Smart Agriculture Program (P170419) - Program Information Document (PID).
[81] Policy Center for the New South. (2022). Policy Brief: The Russia-Ukraine War and Food Security in Morocco.
[82] FAO. (2022). FAOSTAT – Morocco.
[83] ADB, EBRD, and EIB. (2021). Private Sector Development in Morocco: Challenges and Opportunities in Time of COVID-19.
[84] Policy Center for the New South. (2022). Policy Brief: The Russia-Ukraine War and Food Security in Morocco.
[86] World Bank. (2021). CLIMATE RISK COUNTRY PROFILE. Morocco. Available at https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15725-WB_Morocco%20Country%20Profile-WEB.pdf Accessed on 31/10/2022.

Country	Current Status	Climate Change Projections
	• About 70% of Moroccans have access to safely managed drinking water services, while only 39% can use safely managed sanitation services[85].	
Algeria	• Poverty rates have doubled among people living in Algeria's Sahara, and tripled among people residing on the Steppe[87], which underscores the territorial inequality in Algeria. • The Algerians rich consumption rates is higher than the poor Algerians by 27.7%[88] indicating the high disparity between groups. • Women's unemployment rates rose from 17.2% in 2011 to 22.1% in 2021, compared to a 10.4% men's unemployment rate in 2021[89]. • The percentage of young Algerians not in education, employment or training was 21% in 2017, with a higher percentage among young females reaching 31.7%[90]. • The agriculture sector has been negatively impacted by desertification, whereby agricultural lands in rural areas are facing soil erosion[91]. • Algeria hosts around 11,000 refugees and asylum seekers in urban areas and 90,000 vulnerable refugees from Western Sahara in 5 camps near Tindouf[92]. Around 88% of Sahrawi refugees are food insecure or at risk of food	• Increase in projected minimum temperature by 3.6 to 5.0°C and in maximum temperature by 5.0 to 8.0°C under RCP 8.5 by the end of the century [96]. • Highest warming is expected at the Southern end of the country and the lowest precipitation is projected in the western areas. The severity of drought spread progressively across time and space, indicating a high vulnerability to the impact of climate change on water resources[97].

[85] UNDP. (2020). Human Development Reports. Human Development Indicators – Morocco.
[87] World Bank. (2016). Poverty has Fallen in the Maghreb, but Inequality Persists.
[88] Ibid.
[89] World Bank Statistical Database. (2022). Unemployment (modeled ILO estimate) – Algeria.
[90] World Bank Statistical Database. (2022). Share of youth not in education, employment or training – Algeria.
[91] Ellie Williams. The Borgen Project. (2020). 5 Facts about Poverty in Algeria.
[92] UNHCR. (2022). Fact Sheet Algeria.
[96] Sahabi Abed, S. (2021). Future Climate Projections in Algeria Using Statistical DownScaling Model https://assets.researchsquare.com/files/rs-627355/v1_covered.pdf?c=1631873522
[97] Bouregaa, T. (2022), "Climate change projections for Algeria: the 2030 water sector development strategy", Foresight, Vol. ahead-of-print No.

Country	Current Status	Climate Change Projections
	insecurity, and 52% of Sahrawi women refugees between 15 and 49 years and 50% of children between 6 and 59 months suffer from anemia[93]. Around 47% of households in these camps that are at risk of becoming food insecure would experience food insecurity in case of any shock such as an increase in prices or floods[94]. • The COVID-19 pandemic has exacerbated the already challenging situation in the camps in Tindouf, characterized by harsh desert conditions, whereby the poor water quality, limited WASH facilities and weak health system became a primary concern[95].	

[93] WFP. (2022). Algeria Country Brief.
[94] WFP. (2019). Algeria Interim Country Strategic Plan (2019–2022).
[95] Ibid.

Annex 2: Proceedings of Meetings with Experts

Meeting: Mr. Haider AlAwadi, Head of SAWA organization, Iraq
Date: 20/10/2022

1. Introduction of interviewee

Mr. AlAwadi, through his organization has been working since 2003 with the Iraqi government on issues related to human rights, justice, and women's rights. The organization also implements the decision of the national plan for the implementation of the Security Council Resolution (2014-2018 and 2021-2024). They are also writing the anti-drug strategy in the country.

2. How do you define Climate justice and what issues are of highest importance to highlight under climate Justice?

Linking climate change to women and vulnerable peoples' rights.
The major issues for climate justice in Iraq are:

- Water scarcity
- Transboundary water and conflicts
- Food security

3. Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate justice?

- Establish the Sustainable Development Network 2020-2030 and following up on the National Vision 2030, to apply the sustainable development that focuses mainly on poverty, agriculture, and rural women.
- Apply the national plan to support human rights.
- Plan environmental initiatives.

4. What are major blockers for achieving climate justice?

- Gaps while applying the national plans: for instance, when applying Decision No 1325, there was environmental injustice.
- No effective planning and vision regarding SDG 13.
- Weak bond between the government and civil society. Conflict between the government and civil society caused by lack of water in the South of Iraq.
- No serious environmental initiatives from the government to adapt to problems like desertification.
- No coordination with neighboring countries such as Iran and Turkey about water scarcity.
- No internal plans for managing water to adapt for its scarcity.
- No communication and cooperation between governments and the civil society organizations, researchers, and experts.

- Absence of political sovereignty.
- Lack of funding to projects that help to adapt to climate change.
- Absence of knowledge about indicators, and vision to adapt to climate change even in the parliament.
- Absence of legislations regarding climate change.
- Focus on political issues by the government.
- A weak understanding and awareness about climate change even by civil society.

5. **From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?**

- Develop projects and initiatives by both the civil society and the government, taking both points of views and knowledge.
- Develop effective projects that benefit from the funding offered by the government and incorporates the knowledge of the civil society organizations.
- Benefit from the technology, knowledge, and support offered.

Additional Recommendation:

- Urge the implementation of legislation that can help adapt to climate change.
- More cooperation and communication between the governments and CSOs.

Meeting: Mr. Heythem Smida- Guesmi, Researcher in Rural Politics and Peasant Struggles, Tunisia
Date: 19/10/2022

1. Introduction of interviewee

Mr. Heythem Smida- Guesmi- an Agronomist Engineer in Tunisia, his work focuses on Climate Justice and Food Sovereignty.

2. How do you define Climate justice and what issues are of highest importance to highlight under climate justice?

It is the situation where those responsible for climate change take responsibility for the consequences. Tunisia's contribution to GHG emissions is very minimal reaching 0.007%. To face the consequences of climate change there are reparations that must be paid from historically responsible countries of climate change.

3. Are there any projects/activities or initiatives/ that you or your organization are involved with in relation to Climate Justice?

Projects on food sovereignty and agricultural politics in Tunisia: working with farmers and fishermen (studying water scarcity problem).

4. What are major blockers for achieving climate justice?

- Lack of diplomacy efforts: not requesting support to face the consequences of climate change that Tunisians are not responsible for. The problem is with power dynamics in international scene as Tunisia doesn't play a major role in international community. The country only asks for adaptation funds: co-lateral diplomacy efforts, and is following reports prepared by other countries: ex: Paris Agreement report.
- No sovereignty over political decisions and no specific local expertis.e

5. From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?

- Highlight the problem of proper planning to deal with impacts of climate change since international corporation aid agencies and the CSOs which are linked to funders that have different views and politics about the issue.
- Provide more funding for projects related to climate justice.

Meeting: Ms. Olfa Jellasi, Governance & Policy, Climate & Gender Justice, Tunisia
Date: 20/10/2022

1. Introduction of interviewee

Ms. Olfa Jellasi is completing her master's degree in "Global Affairs Governance and Policy – with focus on Climate and Gender policy". She worked with the German Embassy in Tunisia to manage grants for civil society and worked with International Organization Networks related to gender and climate policy at the global level. She is also a committee member of the International Network Gender working for climate Justice in addition to her engagement with climate education, communication and outreach in the Mena region. She also did consultancy works, trainings, all related to youth and women empowerment to achieve climate justice.

2. How do you define Climate justice and what issues are of highest importance to highlight under climate justice?

It is the adaptation to climate change from a justice perspective such as supporting women working in the agricultural sector who are extremely vulnerable to climate change.

The issues of highest importance under climate justice are:

- Challenges facing the agricultural sector including water scarcity and rise in global temperatures.
- Greater attention to mitigation (more focus on energy transition, and clean energy projects) than adaptation projects to climate change.
- Financing resources are conditional.

3. Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate Justice?

- Projects that support capacity building related to gender and social justice to achieve including offering tools and provide training on climate change strategies, policy formulation and policy recommendations (since people do not have all the knowledge to follow the negotiations and have an effective impact in COP, and agenda negotiations, and to make effective changes).
- Highlight local solutions through the Gender Justice Climate Award (opening call for different initiatives lead by women or youth focusing on the nexus between climate and women, gender empowerment, and provide winners with small annual grants to support their implementation of solutions required for climate change adaptation).

- Prepare publications and policy briefs that highlight the gender climate tracker: following the implementation of projects that support gender climate justice.

4. **What are major blockers for achieving climate justice?**
   - Lack of financial resources.
   - Lack of technical support to implement projects related to climate change adaptation.
   - Lack of political sovereignty in making the decision on how to invest funding.
   - Absence of organizations that can work on the nexus between climate and gender.
   - Greater governmental focus on the economy instead of the environment.

5. **From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?**

- Establish greater cooperation and communication between governments and CSOs to address their needs and what kind of support is required.
- Offer capacity building to the civil society as sometimes CSOs are not aware of the link between climate change and justice.
- Present more data and information to decision makers (including CSOs).

Meeting Ms. Amena Sharaf, Coordinator, Climate Talks, Climate and an Environmental Justice Researcher, Egypt
Date: 13/10/2022

1. How do you define Climate justice and what issues are of highest importance to highlight under climate justice?

- The concept of climate and environmental justice is tricky to navigate, because the vulnerability of people to climate change is based on socioeconomic factors which can increase their vulnerability or exposure to environmental degradation.
- The narrative to save the world from climate change is extremely limited and misguided. When talking about climate justice, it is very important to talk about the drastic gap between people's exposure to climate change.
- There is a need grassroots communities or movements to educate the public about climate change not the opposite.
- Gender equality discussions must highlight vulnerability and survival: "Women need a space on the table, but women need to walk down the street **safe** to reach the table".

2. Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate Justice?

Projects that work with grassroots communities closely such as Banlastic-NGO in Alexandria including beach cleanups (especially plastic pollution), but mainly supports fishermen, and works closely with the government to find solutions for environmental problems affecting people.

3. What are major blockers for achieving climate justice

- Different Socioeconomic factors affect the way people are living.
- Limited understanding of climate change.
- Gap in involving farmers and grassroots communities in the decision-making process.
- Lack of serious political approaches and strategies from the government towards achieving climate justice.

4. From your own experience, how can we bridge the gap between CSOs and Governments on issues of climate justice?

The Ministry of environment should cooperate with environmental NGOs on losses, damages, and adaptation strategies. For instance, the 'Green climate fund' is offering an enormous amount of money, but with limited accessibility. If the government has more access to the funding and can use it responsibly, there is a chance to benefit grassroots organizations and civil society.

Additional Information:
It is important to reroute all of the efforts to adapt to climate change. There is a lack of faith with the COP as they are not seriously considering the opinion of civil society. Thus, the procedure that the COP is following is not serving its purpose.

Meeting: Ms. Jessica Anderson, Deputy Director, Visualizing Palestine
Date: 6/10/2022

1. **How do you define Climate justice and what issues are of highest importance to highlight under climate justice?**

It highlights the urge to equally distribute benefits and burdens of climate change: between vulnerable groups, indigenous people.
The priority areas in Palestine are:

- Strategizing with others
- Understanding priorities and communicating them with broader communities
- Israeli colonization
- Rights to water access
- Food sovereignty
- Supporting fishers and farmers

2. **Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate Justice?**

- Popular education and movement education: highlighting Palestinian experience in environmental justice: green colonialism, environmental rationalism.
- Create deeper connections between movements.
- Sharing Food sovereignty vision.

3. **What are major blockers for achieving climate justice?**

- Control of water resources by Israeli parties
- Taxes on fishers
- Displacement of people
- No adaptive capacities for climate change
- Fragmentation in Palestine

4. **From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?**

The government should always engage with civil societies in all decisions.

More information:
https://al-shabaka.org/briefs/climate-change-the-occupation-and-a-vulnerable-palestine/

Meeting: Ms. Mariam Al Jaajaa, General Manager, Arab Group for the Protection of Nature, Jordan and Palestine
Date: 6/10/2022

1. **How do you define Climate justice and what issues are of highest importance to highlight under climate justice?**

- We can't separate the environment from the human beings.
- Developing projects with economic and environmental benefits at the same time.
- Take into consideration the needs and the struggles of the communities sustainably when designing environmental projects.

The issues of high importance under climate justice are:

- Food security
- Weakness of the Agriculture sector
- Deforestation
- Accumulated pressure: vulnerable people under war (women, youth…)
- Absence of adaptable capacities

2. **Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate Justice?**

- Reforestation and Agricultural works.
- Building water wells and water harvesting system projects.
- Reforestation and Agricultural works.
- Food sovereignty.
- Research and advocacy (organize consultation (FAO- ministries consultation)) on climate change, connect between communities and decision makers: negotiation on policies on national and regional level related to climate change: "How to combat climate change" program.
- Education on climate change, and adaptation strategies.

3. **What are major blockers for achieving climate justice?**

- Peace building are not always based on justice: programs are not taking into consideration the environment with people's rights- greenwashing from violators.
- Destruction of water systems from the Israeli parties.
- No genuine participation of the civil society and communities (lack of popular support).
- Corporate and foreign interests are sometimes prioritized.
- Not promoting applicable and useful projects (example: hydroponics projects).

4. **From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?**

- Participation of communities, and civil society in the decision making process.
- Build a platform which allows all sectors to discuss environmental issues together.

Meeting: Ms. Saadiyah Hassoon, Head of "Together to Protect Human and Environment Association, Iraq
Date: 5/10/2022

1. Introduction of Interview:

Ms. Saadiyah Hassoon is an Expert Chemical Engineer, National Expert in Social Responsibility Standard, and Head of "Together to Protect Human and Environment Association". She is mainly working on activities related to education about climate change such as the integration of Sustainability in Education as well as supporting youth and women. Her work has been focused nationally in cooperation with the Arab Network for Development, members of IPEN, Network World Alliance for the growth of rights and housing Network, and International Earth Day Network.

2. How do you define Climate justice and what issues are of highest importance to highlight under climate justice?

Climate Justice is a new term that is related to conserving the environment, and applied through a realistic approach. The main issues under climate justice are:

- Lack of awareness on the impacts of climate change on people which requires greater efforts to the educate youth, farmers and women.
- Weakness of the agricultural sector in rural areas attacked by ISIS, directly affecting women: So, it is crucial to activate workshops to train women in working in temporary jobs (growing some vegetables).
- Use of chemical, pesticides and old agricultural practices: therefore, it is important to introduce new technologies, conservative agriculture practices (like responsible irrigation), and renewable energy through awareness sessions to farmers, youth, and women.
- Loss of jobs due to climate change: drought affecting the agriculture sector.

3. Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate Justice?

- "Anisat falla7at" initiative supporting women in rural areas attacked by ISIS in 2014-2017.
- Introducing new technologies in agriculture: drip irrigation, safe use of pesticides, use of clean energy.
- "Organic farming project".
- Agroecology with IPEN: Highly hazard pesticides project- Market survey in Iraq.

4. What are major blockers for achieving climate justice?

- Delay with the Government approval on many activities like spreading awareness in schools.
- Lack of awareness.

- Women's domestic obligations sometimes prevent them from assisting in activities to adapt to climate change.
- Farmers are not always trained to use modern technologies.
- Farmers are not well supported nor familiar with the necessary information to provide food security.
- The government is not taking effective decisions about neighboring countries access to water.
- Limited budget/funding.
- CSO are not well supported financially.

5. **From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?**

- Activate the committees working for the environment in the ministries, and making sure they represent the needs of women, youth, and farmers.
- Develop a clear plan by the ministry in alliance with the civil society to identify issues and priorities (Water problems in the South).
- Establish geographical representation from all areas and sectors affected by climate change.
- Implement projects that adapt to climate change in partnership with the CSO.
- Strengthen the negotiations with CSO.

Additional Information:

- After training, people are always following the conservative agriculture practices (due to the need).
- The Marshes of Iraq which consist of a large reservoir of Carbon and biodiversity are now on the World Heritage List. However, these marshes have dried and therefore the government with the CSO should work together to restore this area. Furthermore, on the regional level, they should make effective efforts to put pressure on Iran and Turkey to release Iraq's water share.

Meeting: Ms. Nouhad Awwad, Youth Climate activist, Lebanon
Date: 5/10/2022

1. **How do you define Climate justice and what issues are of highest importance to highlight under climate justice?**

Climate Justice is the equal distribution of climate change effects and benefits.
The issues of high importance that need to be highlighted in Lebanon and the Arab region under climate justice are:

- Supporting women, vulnerable groups and communities in conflict areas.
- Lack of knowledge and expertise.
- Lack of connections between academia, civil society and government.
- Big data Gap.
- Difference of carbon emissions between the countries: countries under war have more emissions.

2. **Are there any projects/activities or initiatives that you or your organization are involved with in relation to Climate Justice?**

- MENA project with Greenpeace: reaching vulnerable communities.
- Initiatives talking through the Islamic values.
- Climate Justice round table (during Ramadan: two Climate Justice round table): advocacy on Climate Justice, and faith perspective on climate justice.

3. **What are major blockers for achieving climate justice?**

- Developed countries are not taking responsibilities for their emissions.
- Major companies are releasing a lot of emissions without being held responsible.
- Lack of awareness.
- Lack of funding for climate change adaptation projects.
- Lack of technology required to adapt to climate change.
- Reliance on fossil fuels in the Arab region.

4. **From your own experience, how can we bridge the gap between CSO and Governments on issues of climate justice?**

- Allow civil society to engage in projects related to climate change.
- Involve civil society in the local decision-making process.
- Allow greater public participation of civil society in delegations, capacity buildings, negotiations, and always keeping them updated with their projects.