Anticipatory Action in Communities Hosting Refugees and Internally Displaced Persons: A Synthesis Report with Case Studies from Ethiopia, Jordan and Pakistan

INITIATIVE ON Fragility, Conflict, and Migration

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Executive Summary

UNHCR (2024a) reports that by June 2024 there were an estimated **122.6 million** people around the world who have been forced to flee their homes. Among them were nearly **43.7 million refugees**. This poses immense challenges for the humanitarian sector. These challenges are particularly acute in fragile states, such as Libya, Somalia, South Sudan and Syria, where civil war has pushed respective populations into extreme levels of vulnerability. Likewise, in the Occupied Palestinian Territories and Ukraine, ongoing wars have created impossible conditions for the humanitarian sector. Forced displacement from war, conflict and disasters is putting additional pressure on natural resources, such as food, land, and water systems (FLWSs) in host communities, in some cases leading to tensions between internally displaced persons (IDPs), refugees, and their hosts.

In all these cases of forced displacement, the compounding effects of climate change are being felt, in some cases contributing as a dynamic pressure to ongoing conflicts, such as Somalia and Syria, or as in the case of Ethiopia, Jordan and Pakistan, leading to extreme weather events including flash flooding, droughts and heatwaves. Climate impacts are exacerbated by human processes such as deforestation, loss of wetlands and urbanization, which have reduced the buffer capacity of landscapes to absorb climate-related impacts such as the slightest variations in rainfall patterns and even relatively low increases in temperatures.

In response to these challenges, the CGIAR Initiative on Fragility, Conflict, and Migration (FCM) was launched. The initiative aimed to address challenges to livelihood, food, and climate security faced by some of the most vulnerable populations worldwide. The Initiative focuses on building climate resilience, promoting gender equity, and fostering social inclusion. The FCM Initiative has a four-pronged approach: (1) strengthen anticipatory action and governance to mitigate the impact of compound crises (WP1–ANTICIPATE); (2) bridge emergency operations with long- term sustainability principles (WP2–BRIDGE); (3) generate evidence to guide effective policies and programming to promote stability and women's empowerment (WP3–STABILIZE); and (4) accelerate innovations that address humanitarian-peace- development (HDP) priorities alongside local innovators, including women (WP4–ACCELERATE).

As part of the CGIAR's FCM initiative, the **ANTICIPATE** work package has carried out research In Ethiopia, Jordan and Pakistan, with a focus on the respective host communities to identify common risks to FLWSs, ascertain prevailing responses to increased stress on FLWSs, and to produce policy recommendations to support the development of anticipatory action strategies. This also includes the development of an integrated host community vulnerability framework (IHCVF) that supports the planning and design of anticipatory action approaches, disaster risk reduction (DRR) and longer-term resilience-building initiatives, such as adaptation strategies and nature-based solutions. This research report provides a synthesis of the work that was conducted under the **ANTICIPATE** work package, drawing from the three case studies in Ethiopia, Jordan and Pakistan.

Authors

Andrew Adam-Bradford, Consultant - UK

Abdulla Anagreh, Consultant - Jordan

Mengistu Dessalegn, National Researcher – IWMI Ethiopia

Mohsin Hafeez, Director – IWMI Pakistan

Sidra Khalid, National Researcher – IWMI Pakistan

Wolde Mekuria, National Researcher – IWMI Ethiopia

Dagmawi Melaku, National Researcher – IWMI Ethiopia

Alexandra Schindler, Consultant - Egypt

Radhika Singh, Consultant - Kenya

Sandra Ruckstuhl, Senior Researcher & Co-Lead of the CGIAR Initiative on Fragility, Conflict, and Migration – IWMI Jordan

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Cover photo

Climate migrant displaced from floods interviewed during field survey in District Rahim Yar Khan, South Punjab, Pakistan.
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About the Institutions

CGIAR is the largest agriculture innovation network with a research portfolio of US $900 million, over 3000 partners and clients in 70+ countries focused on enhancing food and nutrition security through a science-based approach to emerging development issues. The main scientific areas of focus include supporting food systems transformation, driving sustainable land and water use, supporting resilient agri-food systems, and creating genetic innovation through crop breeding and seed systems for adaptation of food and farms to meet goals for poverty reduction, gender equality, nutrition, climate, and the environment. Its research is carried out by 13 CGIAR Centers/Alliances in close collaboration with hundreds of partners, including national and regional research institutes, civil society organisations, academia, development organisations, and the private sector.

CGIAR Initiative on Fragility, Conflict, and Migration

The CGIAR Initiative on Fragility, Conflict, and Migration addresses challenges to livelihood, food, and climate security faced by some of the most vulnerable populations worldwide. The Initiative focuses on building climate resilience, promoting gender equity, and fostering social inclusion. https://www.cgiar.org/initiative/fragility-conflict-and-migration/

The International Water Management Institute (IWMI) is an international, research-for-development organization that works with governments, civil society and the private sector to solve water problems in developing countries and scale up solutions. Through partnership, IWMI combines research on the sustainable use of water and land resources, knowledge services and products with capacity strengthening, dialogue and policy analysis to support implementation of water management solutions for agriculture, ecosystems, climate change and inclusive economic growth. Headquartered in Colombo, Sri Lanka, IWMI is a CGIAR Research Center with offices in 15 countries and a global network of scientists operating in more than 55 countries.

Contents

Acronyms and Abbreviations

CERF	Central Emergency Response Fund
FAO	Food and Agriculture Organization of the United Nations
FCAS	Fragile and conflict affected setting
FLWS	Food land and water systems
IDP	Internally displaced person
IFRC	International Federation of Red Cross and Red Crescent Societies
IHCVF	Integrated Host Community Vulnerability Framework
IOM	International Organization for Migration
UNHCR	United Nations High Commissioner for Refugees
WFP	World Food Programme

Introduction

The humanitarian sector is currently facing immense challenges. As modern warfare has become increasingly urbanized this has had a profound impact on forced displacement (Slim 2022). This has contributed to record numbers of forcibly displaced, such as refugees crossing international borders to escape from violent conflicts, as in the case of Somali refugees fleeing to Ethiopia and Syrian refugees arriving in Jordan. Internal displacement has also increased often driven by conflict, as demonstrated by the high number of internally displaced persons (IDPs) still living in camps in north Iraq. However, internal displacement is also occurring the wake of disasters resulting from natural hazards (Viviane et al. 2021), such as the movement of IDPs in Pakistan due to recent extreme flood events.

In all these cases of forced displacement, the compounding effects of climate change are being felt, in some cases contributing as a dynamic pressure to ongoing conflicts, such as Somalia and Syria, or as in the case of Ethiopia, Jordan and Pakistan, leading to extreme weather events including flash flooding, droughts and heatwaves. Climate impacts are exacerbated by human processes such as deforestation, loss of wetlands and urbanization, which have reduced the buffer capacity of landscapes to absorb climate-related impacts such as the slightest variations in rainfall patterns and even relatively low increases in temperatures.

In these cases, forced displacement from conflict and disasters is putting additional pressure on natural resources, such as food, land, and water systems (FLWSs) in host communities, and potentially lead to tensions between migrants, refugees, and their host communities (FAO, 2018). Influxes of refugees and IDPs may strain local infrastructure and services and increase competition for jobs. These population pressures can lead to increases prices for market commodities and rents, while contributing to unsustainable resource use, such as high-water consumption and increased pollution for example from wastewater and solid waste, with the net outcome of unregulated development. Tensions can also arise due to differences in culture and language, public safety concerns and disagreements on the effect that forced migration is having on a community's identity. This pattern can even occur within a country, when IDPs arrive from different cultural and religious contexts, such as the movement of Sunni and Yazidi IDPs into the Kurdish northeast of Iraq.

Policies around forced displacement can either exacerbate the arising tensions or attempt to resolve them. In many cases, countries find it difficult to balance between serving the needs of their own populations and ensuring the rights of refugees outlined in international law (e.g. The 1951 Refugee Convention). By mid-2021, 80% of the 84 million people forcibly displaced worldwide experienced acute food insecurity and high levels of malnutrition. Most refugees– 74%, according to UNICEF– are hosted in low- or middle-income countries, where host communities often struggle to provide enough employment opportunities, ensure environmental protection, and support sustainable development. Women and children tend to be disproportionately affected.

The effects of climate change on host communities makes it even more difficult to absorb large numbers of refugees, particularly in areas where changing weather patterns have decreased people's availability and access to natural resources. As many forcibly displaced persons depend on natural resources to support their livelihoods, the overall stress placed on FLWSs can reach unsustainable levels. The historical reduction in the buffer capacity of landscapes to absorb climate-related impacts exacerbate these FLWSs pressures. These trends often intersect with political, economic, administrative, social, and development processes that exacerbate the depletion/degradation of natural resources. In short, host communities often struggle to provide fair and sustainable livelihood opportunities for all.

The literature on forced displacement has historically focused on the drivers of displacement, leading to a lack of information on the effects of forced displacement. This is an important gap to fill, as stresses on FLWSs in host communities are projected to increase in the coming decades as the overall number of forcibly displaced persons rise and the effects of climate change intensify.

Strengthening Anticipatory Action in Hosting Communities

As part of the CGIAR's FCM initiative, the **ANTICIPATE** work package has carried out research In Ethiopia, Jordan and Pakistan, with a focus on the respective host communities to identify common risks to FLWSs, ascertain prevailing responses to increased stress on FLWSs, and to produce policy recommendations to support the development of anticipatory action strategies. This also includes the development of an IHCVF that supports the planning and design of anticipatory action approaches, disaster risk reduction (DRR) and resilience-building initiatives, with a focus on building resilience:

- to water and climate risks;
- of communities that host displaced persons;
- in fragile and conflict-affected areas
- through an integrated humanitarian-development-peace nexus approach

Anticipatory Action, which is a set of actions taken to prevent or mitigate harmful impacts, can be integrated into host communities' disaster risk management, environmental protection, and climate adaptation strategies. The approach is defined by the IFRC (2020: 171) as a "set of actions taken to prevent or mitigate potential disaster impacts before a shock or before acute impacts are felt. These actions are carried out in anticipation of a hazard impact and based on a prediction of how the event will unfold". It is increasingly recognized as part of the solution to reducing the impacts of climate change and extreme weather events (IFRC 2020). Anticipatory Action strategies can also promote social resilience by ensuring food security, sustainable livelihoods, alleviation of poverty, and integrated water and land resources planning. This research report provides a synthesis of the work that was conducted under the ANTICIPATE work package, drawing from three case studies in Ethiopia, Jordan and Pakistan.

2. Methodology

This research was carried out over 18-months (March 2023 to September 2024) in collaboration with governments, humanitarian organizations, and development partners, and was based on a global literature review, stakeholder consultations, and three case studies of host communities.

Literature Review

The objective of the literature review was to understand the effect of forced displacement on host communities located in FCASs, forced displacement's impact on the sustainability of FLWSs in host communities, and host community responses to increased stress on FLWSs. This included a global review of academic and grey literature, as well as desk reviews of the three case study locations.

Inception Workshops

The objective of the workshops was to ensure that all partners and task teams members agreed with the case studies, the methodological approach, and the Theory of Change (to ensure application of the research outputs).

Focus Group Discussions and Key Informant Interviews

Focus group discussions and key informant interviews were held with gender- and age-disaggregated IDPs and refugees in arid and tropical areas and refugee camps settings in three locations. Each case study had distinct characteristics and demographics.

Data Analysis and Framework Building

This included the identification of the intersection between environmental and non-environmental factors that exacerbate climate risks, and particularly water and land management challenges, in host communities. Also carried out was an analysis of the design, implementation and impact of anticipatory action and disaster risk management already taking place, allowing for the presentation of learnings and the incorporation of feedback from the stakeholders.

Final Case Study Research Reports

This includes the recommendation of approaches to enhance anticipatory action for improved resource management. It also incorporates this research report synthesizing the challenges arising from FLWSs governance in host communities, approaches and policies used to resolve these issues, and the methods for strengthening management, adaptation, and anticipatory action. The material from the three case studies in this report are drawn directly from these final case study research reports (Adam-Bradford et al. 2024; Khalid et al. 2024a; Khalid et al. 2024b; Sadihika et al. 2024).

Validation Process

Validation workshops and/or meetings were conducted for each case study and for the final research report to ensure buy-in and to promote the dissemination of research findings.

Synthesis Process

The final process was the synthesis of the case studies to produce the IHCVF. In this context the case studies were used to identify the multifaceted issues around vulnerability, as well as some potential responses for interventions.

3. Literature Review

As mentioned in the methodology, the objective of the literature review was to understand the effect of forced displacement on host communities located in FCASs, forced displacement's impact on the sustainability of FLWSs in host communities, and host community responses to increased stress on FLWSs. This included a global review of academic and grey literature (see Schindler et al. 2023), as well as desk reviews of the three case study locations. This section provides a summary of the findings taken from the literature review.

Anticipatory action, i.e., the set of actions taken to prevent or mitigate a potential disaster before acute impacts are felt (IFRC, 2020), is increasingly a part of any strategy for humanitarian and development organizations and governments (IFRC, 2020). This approach demands integrative and proactive solutions that prioritize resilience, long-term development goals, and inclusivity. While anticipatory action is widely recognized as an essential measure, along with long-term resilience, climate-smart recovery and reconstruction to reduce the impacts of climate change and extreme weather events, it has proven challenging to incorporate this approach into host community contexts for several reasons.

Host communities can be complex environments, as they include both displaced persons and residents living in the area before the arrival of displaced persons. When host communities are located in or near fragile and conflict-affected areas, that can also make them more vulnerable to climate change and extreme weather events. For example, the impact of conflict can severely damage infrastructure and reduce the effectiveness of any remaining coping mechanisms. They may also face stresses such as rapid population growth, demographic pressure, increased demand on limited resources, environmental degradation, legal difficulties for displaced persons, and conflict between hosts and displaced persons. While host communities are usually defined as the community that hosts large populations of refugees or internally displaced persons (IDPs) (in camps, integrated into households or independently), the literature review expanded the definition to include *all* community members, both hosts and forcibly displaced persons who are being hosted. These groups can experience similar and different social, economic and environmental challenges from one another.

A review of the literature shows that host communities have a specific set of vulnerabilities that must be understood across a diverse range of contexts if we are to inform sustainable and inclusive anticipatory action approaches. These vulnerabilities compound existing risks that host communities face in fragile and conflict-affected settings and during extreme weather events. If anticipatory action within host communities is to support long-term development goals, formal and informal institutions must consider incorporating the full range of vulnerability indicators found in fragile and conflict-affected settings into their near and long-term strategies and policies.

Because anticipatory action is a relatively new field, there is a general lack of literature on anticipatory action in host communities. More research on water- and climate-related vulnerabilities is needed in order to inform anticipatory action strategies in these contexts. More specifically, there is a need for additional case studies with data sets that includes all types of hosting contexts, including rural, peri-urban and urban, as well as circumstances that include both refugees and IDPs, and a range of emergencies including slow onset, rapid onset and complex emergencies.

The literature and the AHEAD case studies show the importance of well-planned and financed anticipatory action protocols in various types of host communities. However, the literature reveals anticipatory action strategies generally do not include long-term outcomes like resilience building and adaptation. Another gap in the literature is lessons and guidance on how to better implement anticipatory action and forecast-based humanitarian action in conflict situations (Wagner and Jaime 2020). There is clearly a need for timely and accurate data to improve the effectiveness of protocols and programs and to strengthen forecast-based financing based on scientific forecasts and risk analysis and mitigate climate impacts (IFRC and RCCC 2020; Lewis and Herwanger 2022). This highlights the need for data and research on vulnerabilities in different types of host communities (in terms of infrastructure, legal restrictions and integration) and among different types of socioeconomic groups, including all categories of forcibly displaced people (for example, refugees and IDPs). This gap clearly demonstrates the need for further research and practical guidance in this technical area and the need for a data-informed and field-tested IHCVF to guide programming.

As the WFP report "Evidence Base on Anticipatory Action" concludes, "evidence helps to ensure accountability in humanitarian action and…greater investment is needed in robust monitoring, evaluation and learning on anticipatory action. Without this, and a clear agenda for enhancing the evidence base to improve future policy and programming, the humanitarian system will continue to struggle to meet needs" (Weingärtner et al. 2020, 37). To develop this evidence, this report articulates a clear need for the following in order to inform design and implementation of effective anticipatory action strategies in hosting communities: i) further implementation and evaluation; ii) a common analytical framework and principles; and iii) an improvement in decision-support models.

In 2021, the Anticipatory Action Task Force recommended five suggestions for scaling up anticipatory action to inform policy processes and determine principles for collaboration. The following year, in their global overview on anticipatory action, they

determined there had been some progress but there continued to be significant gaps, including (i) flexible, coordinated and predictable financing for anticipatory action; (ii) investment in early warning and preparedness capacities, especially at local levels; (iii) applying anticipatory action to a wider variety of hazards; (iv) collective learning, coordination and partnerships, and; (v) mainstreaming anticipatory action into national disaster management systems (Anticipatory Action Task Force, 2023, 24–25).

Anticipatory action initiatives and associated finance mechanisms are becoming increasingly common, and there is an effort to expand anticipatory action globally for all types of emergencies and disasters in different political, geographical and cultural contexts. However, due to the challenges of conducting research in fragile and conflict affected states, the unpredictable nature of migratory movements among refugees and IDPs, and the challenges of impact-based forecasting of slow-onset, rapid-onset, and complex emergencies, there is still a considerable policy gap in the guidance to inform anticipatory action in host communities.

It is clear that anticipatory action approaches that take into account the long-term needs of communities, resilience building and sustainable livelihoods can mitigate the impact of climate change and extreme weather events. It is also clear that populations will continue to be displaced in large numbers in the coming years, due to conflict and climate change. For this reason, specific research on water- and climate-related vulnerabilities is needed to develop and implement anticipatory action strategies that take into account the needs of host communities, especially in fragile and conflict-affected areas. This will help organizations and governments prioritize resilience building and adaptation as part of their anticipatory action approaches to improve long-term outcomes.

4. Case Studies

This synthesis paper draws from three case studies to support the development of a replicable and scalable mixed-methods model called the IHCVF. The framework has four main components. These consist of three analytical components that have been adapted from the area-based approach: 1) **People**; 2) **Place** and; 3) **Processes**. Each analytical component consists of three sub-components that group a range of contexts, factors, or issues together. For example, **People** cover a range of individual, community and social factors as well as detailing the community types. **Place** covers the geographic dimension, looking at physical characteristics, hydrometeorological factors and the settlement types. Finally, **Processes** covers a everything related to police and programmes at the local and national levels as well the humanitarian sector (see Figure 1). These sub-components are explored in detail in Section 6, the development of the IHCVF.

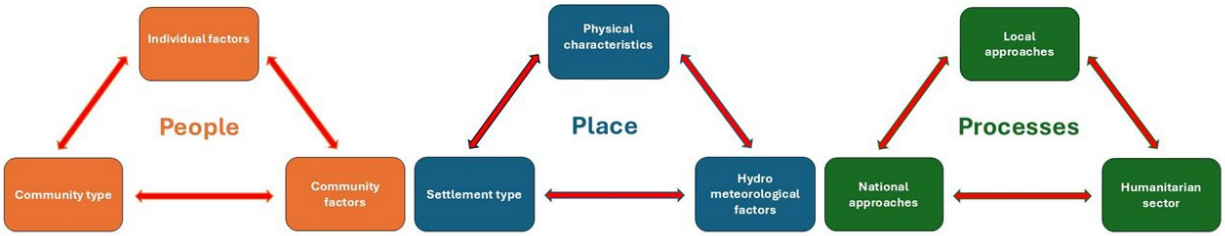

Figure 1. The three analytical components of the IHCVF (Source: Authors)

4.1 Refugee Camps in Ethiopia

People

Forced displacement from Somalia to the Somali Region of Ethiopia began in the 1990s, driven by political turmoil and insecurity (WTsadik 2009). In the Somali Region refugee camps opened and closed as populations fled violence and then returned when situations stabilized. Between 2009 and 2011, five new camps were established by UNHCR in Dolo Ado and Bokolmayo woredas[1] to accommodate Somali refugees, who often outnumbered the host community (Betts et al. 2020; Walelign et al. 2022). Continued migration into Ethiopia is fuelled by droughts, floods, conflict, and economic challenges in Somalia. Cooperation and trust between refugees and hosts are generally high due to shared cultural and religious backgrounds, and harmonious co-existence is encouraged by the region's Wabar (UNHCR 2023a). The five settlements now host over 350,000 people, which includes 207,000 refugees in camps and 147,000 members of the host community who live in areas surrounding the camps, along with an increasing number of IDPs (UNHCR et al. 2024). As highlighted in the MRC (UNHCR et al. 2024: 8) with "recurrent droughts, pastoralist populations are migrating to these areas for basic services and livelihood opportunities. In the absence of adequate government support, humanitarian partners have established parallel systems, accommodating the settlement of internally displaced people (IDPs) in peri-urban regions".

Place – Settlement Type and Characteristics

The study sites for this research were the five refugee hosting settlements in Bokolmayo, Melkadida, Kobe, Hilaweyn and Buramino near the border between Somalia and Ethiopia (see Figure 2). These settlements are located in Bokolmayo and Dolo Ado woredas in the Liben Zone of the Somali Region of Ethiopia. The area where the settlements are located experiences two dry seasons and two wet seasons annually, with the Genale and Dawa rivers being crucial water sources for both communities. Recurring droughts over the last two decades have led to large numbers of livestock deaths and pushed pastoralists to engage in irrigated agricultural production along the rivers. This has provided a new area of livelihood opportunity while contributing to local food security. Occasional flooding, as was experienced in 2023, has also devastated communities, destroying homes, agricultural land, and infrastructure. Waterborne diseases like cholera and malaria further compound post-flood challenges, overwhelming local capacities (IDMC 2019; van der Heijden and den Berg 2020; IGAD Land Governance Unit 2023). The study focuses primarily on refugee and hosting community vulnerabilities; while IDPs may also benefit from recommendations proposed by this report, their needs were not explicitly analyzed, yet they face similar challenges, particularly as they attracted

[1] Ethiopia is divided into regions that are further divided into zones. Most regions, including the Somali Region, encompass between six to twelve zones. Each zone is then divided into districts, also called woredas.

to the area at time of crisis for example during droughts. Consequently, any intervention that can build climate and water resilience at the local level has the potential of wider impacts.

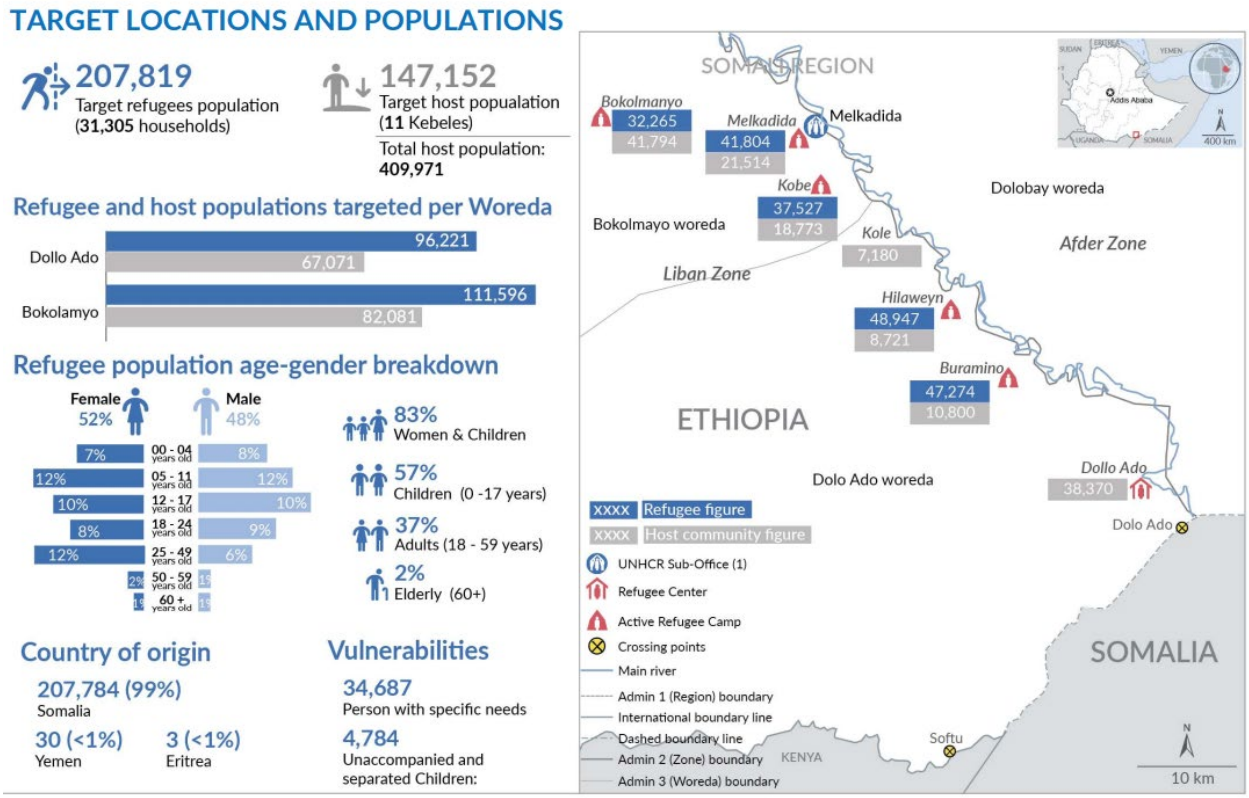

Figure 2. Refugee and host community populations at the border of Ethiopia and Somalia.

Source: UNHCR et al. 2024.

Several challenges affect water security in the refugee hosting communities of Bokolmayo, Melkadida, Kobe, Buramino, and Helaweyn in the Somali Region of Ethiopia. Refugees, internally displaced persons (IDPs), and host community populations have increased over the last decade, placing stress on the functioning of water systems. While the United Nations High Commissioner for Refugees (UNHCR) has made major investments in the area's water systems, funding is now decreasing and efforts are being made to hand over governance responsibilities to the local and regional authorities. To support this handover process and ensure adequate funding, UNHCR has developed the Melkadida Refugee Compact (MRC) (UNHCR et al. 2024). However, while the MRC outlined broad goals for sustainable development in the area, priority areas for improving water security need to be identified and aligned with available resources and capacities. For example, both water supply and irrigation systems are unable to respond to the needs of growing populations and are vulnerable to the effects of droughts, floods, and other weather extremes. This has led to insecure livelihoods and over-dependence on humanitarian aid.

Despite emerging employment opportunities and policies granting refugees the right to work (GoE 2016), the majority of refugees remain heavily reliant on aid due to limited livelihood prospects in the area. At the same time, insecurity and drought in Somalia diminish the likelihood of refugees returning home. The area faces high poverty rates due to limited assets of refugees and hosts, environmental degradation, climate change effects, and pressure on infrastructure (Betts et al. 2020). Various shocks and stresses such as droughts, floods, diseases, population influxes, and insecurity hinder the creation of sustainable livelihoods for both host and refugee communities (Ahmed et al. 2023). Despite the extensive humanitarian presence, needs exceed available assistance, and the sustainability of longer-term development interventions is compromised by local resource and capacity gaps (UNHCR et al. 2024).

Until relatively recently, the five settlements were not receiving targeted attention or support from the Somali regional government, according to humanitarian stakeholders in the area. The regional government considered the area of the camps better off than most of the region, due to the presence of two major rivers that were perceived to offer resources and livelihood opportunities, and the ongoing investments made by various humanitarian organizations. Furthermore, the high proportion of refugees compared to host community nationals in the overall population (see Figure 1) has potentially reduced the regional government's willingness to invest in the area's development. This situation is now evolving, with the regional government

increasingly viewing the area as an opportunity to initiate broader development efforts and attract investment to the entire region (UNHCR et al. 2024). Changes in government leadership and diminishing UNHCR funding have increased attention on the area's development. Fears that al-Shabaab (operating at the border of Ethiopia and Somalia) could fill the vacuum of state presence also motivate increased attention to this location.

Place – Hydrometeorological Factors

Under varying scenarios, it is expected that Ethiopia will experience a temperature increase ranging from 1.6 to 3.7 °C by the year 2080, relative to pre-industrial levels. This increase is expected to be more pronounced in the eastern regions of Ethiopia, accompanied by temperature extremes. The proportion of the population experiencing at least one heatwave annually is projected to escalate from 0.3% in 2000 to 2.1% by 2080, and heat-related mortality rates are estimated to triple by 2080. By 2080, a decline in per capita water availability is projected, primarily due to population growth. Water conservation measures will become critical after 2050, especially in southern Ethiopia. Projections around precipitation patterns are marked by high uncertainty, and range from minimal changes to an increase in annual precipitation of up to 90 mm by 2080 (GIZ n.d.).

Like in many arid areas, drought and flooding events in the Somali region pose major risks to water security (Getnet et al. 2022). The region was severely affected by an 18-month drought from 2020, caused by El Niño and higher temperatures linked to climate change. Woredas attempted to mitigate water insecurity, especially for pastoralist communities, through water trucking initiatives. These trucks transport water from the settlements' water supply systems to local communities located further inland, away from the border areas (WHO 2024). Community members are informed in advance that water trucks will be arriving, and water is allocated based on household size. Sometimes, conflicts over water distribution arise, necessitating elder intervention. Drought preparedness at the woreda level also involves predicting potential internal displacement numbers and allocating resources and funding for food and water aid for affected communities.

In February-March and October-November 2023, the region experienced high rainfall and severe flooding following drought. Regional government predictions regarding El Nino effects and flood warnings were issued to woredas months in advance. Woredas provided plastic sheeting to households for shelter protection, while upstream kebeles[2] alerted downstream counterparts about the potential nature and effects of the flooding. Woredas also issued preparedness advice, including evacuating flood-prone areas, relocating livestock to higher ground, safeguarding crops, and transporting produce to safer locations to minimize asset loss. However, despite this guidance, unprecedented flood levels resulted in substantial livestock, crop, and property losses. Response efforts were hampered by damaged transportation and telecommunication infrastructure and limited resources, although woredas collaborated with NGOs and other implementing partners to distribute food to affected individuals (CARE 2023). Budget constraints at the local government level were exacerbated by rehabilitation needs due to multiple floods in 2023. In Bokolmayo, this led to salary deductions for woreda government employees so that additional funding could be used to support flood victims. Malaria also affected large numbers of people due to the stagnant water bodies that formed as a result of the floods.

Mitigating the effects of climate extremes and ensuring water security is complicated by several differences between refugees and members of the host community. For host communities, the flexibility of movement is an important coping strategy for pastoral-based communities, but they also can fare better in terms of support from local government and policies that protect their livelihoods. These differences are summarized in Table 1.

Processes

To foster inclusive and sustainable development for refugee and host communities in the Dollo Ado and Bokolmayo woredas, UNHCR established the Melkadida Refugee Compact (MRC). The MRC is a four-year plan, from 2024 to 2027, that represents an opportunity to engage in an alternative developmental approach that is led by local authorities at the woreda and regional levels, rather than by humanitarian agencies with dwindling funding. It focuses on four main pillars– renewable energy, sustainable water supply, agriculture and environmental protection, and education and health– and aims to empower both host and refugee communities, accelerate adaptation to climate change, and integrate humanitarian support with government systems. The MRC operates under government leadership to coordinate multi-year engagement among various stakeholders, including development and private sectors, and it seeks to integrate refugees into the region's broader development agenda, addressing both their immediate and long-term needs (UNHCR et al. 2024).

Building water system resilience in refugee and hosting communities requires ongoing climate adaptation strategies as well as short-term anticipatory actions. Resilience is the ability of interconnected social, economic and ecological systems to cope with shocks or stresses by responding or reorganising in ways that allows systems to maintain their essential function, identity and

[2] The smallest administrative unit of Ethiopia, contained within a woreda.

structure. When food, land, and water systems are under strain, climate adaptation strategies help communities adjust to actual or expected changes in order to mitigate harm or exploit beneficial opportunities (IPCC 2023).

Table 1. Host and refugee community characteristics and effects on water security and climate adaptation capacity

Characteristics	Description	Effects
Migration patterns	While host community members can migrate out of the area in times of drought, refugees are not able to do the same. Members of the host community are therefore more mobile and travel far further inland into Ethiopia than refugees do. Refugees may consider returning to Somalia during certain times of the year, particularly considering the porousness of the Somali-Ethiopia border, also changing population numbers in the area.	Seasonal migration patterns in and out of the area require flexible and adaptive approaches in water supply and irrigation systems, so they are capable of scaling as needed.
Livestock ownership	Members of the host community have much higher numbers of livestock. This forms a key household asset that needs to be protected during emergencies. Refugee communities do not have the same level of dependence on livestock for their livelihoods due to mobility constraints.	Differential levels of livestock ownership require different approaches to disaster preparedness between host/refugee communities.
Legal rights	Host communities are represented by members of the woreda and regional governments. Refugees, as non-citizens, do not have government representation – they are represented through the UN system (i.e. camp management which coordinates with local government).	Participatory planning approaches that consider the varied forms of representation can help improve inclusion of refugees.
Humanitarian support	While host communities often face the same livelihood challenges as refugees, the latter are given much more attention and resources due to the humanitarian organizations operating in the area, who are targeting services to those refugees. UNHCR's mandate, for example, is to protect refugees, and only by extension, host communities.	Humanitarian funding and support for refugee needs leads to substantially different levels of social protection and areas of vulnerability for refugee versus host communities.
Unstable population numbers	Influxes of refugees or migrants may cross the border after sudden events, such as disasters or conflict. In these cases, the government finds it difficult to prepare for and cope with big changes in population. The unpredictability of the movements of forcibly displaced people means host country investments more often serve the needs of legal residents and citizens.	Inability to predict future population numbers and associated needs complicates planning and programming for sustainable water system development and service delivery.
Tensions between refugees/hosts	While the Somali Region generally has been open and accepting of refugees, tension does sometimes escalate between hosts and refugees. Clan dynamics also sometimes play a role.	Responding to the different needs of refugees and hosts can give rise to claims of unfair or unequal treatment and decrease engagement with government-led participatory planning efforts for development programming.

Source: Petros et al. 2017; Betts et al. 2019; Alexion et al. 2021; Walelign et al. 2022; UNHCR et al. 2024.

While the MRC outlines broad goals for achieving water security, specific and targeted actions have yet to be agreed upon. Furthermore, there is a lack of information around how exactly climate adaptation and anticipatory action efforts should be

tailored to the specific vulnerability context of refugee host communities in the area (Easton-Calabria et al. 2022; Jayakody et al. 2022). Filling in these gaps is crucial for planning, designing and implementing interventions or programs that improve water security (see Figure 3). The International Water Management Institute (IWMI) worked directly with the UNHCR field office in Melkadida to collect relevant data on water security challenges and to identify investment priorities for building resilience in water systems. Specifically, the AHEAD case study focused on: (a) Challenges in water system functioning, including the effects of weather extremes, (b) Opportunities for anticipatory action, climate adaptation, and resilience building to improve water security (c) New governance approaches and strategies for sustainable water system development.

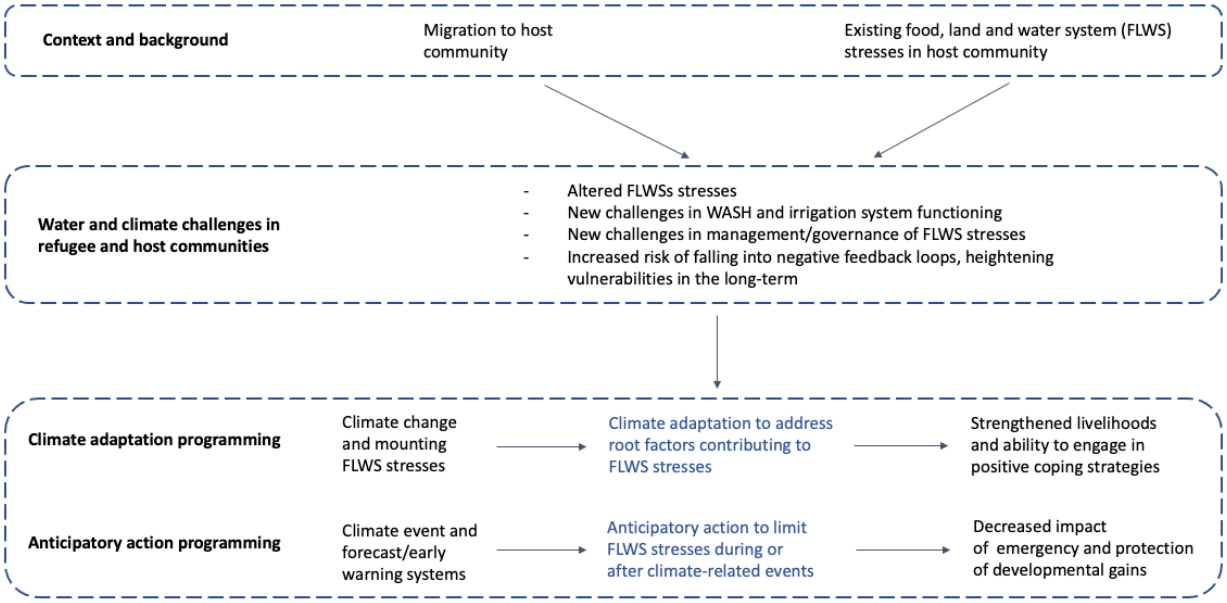

Figure 3. Climate adaptation and anticipatory action programming for resilience building

Source: Singh et al. 2024.

4.2 Urban Refugees in Jordan

People

Jordan faces immense challenges in addressing issues around vulnerability due to the high refugee influx. There are currently around 3 million refugees in Jordan, and approximately 760,000 of these refugees are registered for support from UNHCR (UNHCR 2023b). Of the refugees supported by UNHCR, Syrians are the largest community. There are estimated to be 1.3 million Syrian refugees in total in Jordan (including both registered and unregistered). The majority of Syrians live in urban areas (82%) but around 18% (or 120,000) live in two Syrian refugee camps, Zaatari and Azraq (UNHCR 2024b).[3] Jordan has historically received many refugees over the years due to conflicts in the region, but the increasing pressures on the country both economically and due to extreme weather-related events (such as severe drought and flooding) continue to severely strain the country's resources. In addition, changes in donor priorities have led to humanitarian funding cuts, which in turn has led to a reduction in cash assistance and social services for refugees (WFP 2023). This pressure on refugees and host communities combines to create compound risks that challenge both international organizations and local government to respond to the diverse needs of these communities.

Both refugees and the hosting community in Irbid Governorate are vulnerable due to high rates of unemployment, although conditions are often worse for Syrians due to poor working conditions when they do find work, because of their reliance on informal work, a lower mandated minimum wage and challenges getting a work permit (Adam-Bradford et al. 2023; Stave et al. 2021). The unemployment rate in Jordan is 22.3% and in Irbid Governorate is 20.9%. This figure is 21.5% for Jordanians and 18.9% for non-Jordanians (DOS 2023). According to the 2024 Vulnerability Assessment Framework (VAF) (UNHCR 2024b), only 7% of refugee respondents in Jordan have a valid work permit. Gender was found to be a strong predictor of labour force

[3] In addition, there are more than 2 million Palestinian refugees living in Jordan, the largest number of Palestine refugees of all UNRWA countries of operation. Approximately 10% of Palestinians live in camps, which were mostly established in the wake of the wars of 1948 and 1967 (UNRWA 2023).

participation and employment: 7% of interviewed refugee women (not including Palestinians) participate in the labour force, compared to 55% of men.

Jordan is a resource poor and food-deficit country and refugees and hosting communities in Irbid Governorate are vulnerable to food insecurity. Jordan is considered food secure, based on the 2020 Global Hunger Index, however 53% of Jordanians are vulnerable to food insecurity, residents in rural governorates are particularly susceptible due to rural poverty (Fathallah and Robertson 2021). According to the 2024 VAF, "Measures of food security indicate a worsening level of food consumption among both Syrian and non-Syrian refugees living in host communities in Jordan, and evidence suggests that refugees are increasingly resorting to negative food coping strategies" (UNHCR 2024b). In addition, due to funding cuts, the humanitarian sector has recently reduced aid in the form of food and non-food items and cash assistance support for refugees in Jordan, which has increased food insecurity in refugee communities.

Place

The vulnerability of both host communities and refugees is particularly high in the north of Jordan. Irbid Governorate is in northwest Jordan and has the second largest population in the country after Amman Governorate. Irbid Municipality is the administrative hub of Irbid Governorate, 70 km (43 miles) north of the capital, Amman, and 20 km (12 miles) south of the Syrian border. Ramtha Municipality is a smaller city in the Irbid Governorate 16 km east of Irbid city. The districts of Irbid and Ramtha municipalities have been identified as some of the areas facing the highest climate change risk in Jordan, especially to water scarcity, drought, unpredictable rainfall, and flash flooding (MoEnv and UNDP 2022a). Eighty three percent of the population of Irbid Governorate lives in urban areas (DOS 2023).

Jordan has a mostly arid climate with long, hot, dry summers and short, cool winters. The climate is affected by the country's location between the subtropical aridity of the Arabian desert areas and the subtropical humidity of the eastern Mediterranean area. About 70 percent of the average rainfall in the country falls between November and March, and June through August are often rainless (Al Azzam and Al Kuisi 2020). Jordan is impacted by extreme weather hazards including droughts, heatwaves and extreme temperatures, and flashfloods and landslides. The dominance of arid conditions and irregular rainfall distribution are the main limiting factors affecting agricultural production. Rainfall varies from season to season and from year to year and precipitation is often concentrated in heavy rainstorms, causing erosion and local flooding, especially in the winter months, which is forecasted to intensify considerably in the next 20 years (World Bank 2022).

Incidents of flooding are common in Jordan and can be very damaging as many are flash floods. "Flash floods caused by storms of high intensity and short duration are common and are associated with heavy rainstorms which could be considered as the most frequent widespread and disastrous natural hazard in Jordan in the last decade" (Al Azzam and Al Kuisi 2021, 81). Flooding often follows heavy rainfall events during the winter. Floods in Jordan cause injury, destroy agricultural land and infrastructure, and slow economic productivity. For the period 1963-2019, the Jordian Civil Defense has reported 20 major floods and storms, from which 451 people have been killed in total and circa one million people affected by flash floods (Shawaqfah et al. 2020). In 2018-2019 alone, three large floods killed seventy people, and over four thousand were evacuated. The floods affected over 350,000 people in total. Total financial losses were around 3 million (USD) (Shawaqfah et al. 2020; Gammoh et al. 2023). One of these cases of flash flooding in 2018 occurred in Irbid, when the Civil Defense Forces had to rescue 1,000 factory workers in Irbid Municipality who were surrounded by water. Due to Jordan's topography, soil conditions, rapid urbanization, and more frequent rainfall events, it is predicted that inundation will increase in areas already vulnerable to flash flooding, including the cities of Irbid and Ramtha in Northern Jordan (Al Azzam and Al Kuisi 2020). In Ramtha, the frequency of flooding in the urban wadi may be an indicator that this is already occurring.

Another major impact of climate change on Jordan has been to its water supply. Jordan is one of the most water scarce countries in the world, and water stress is a key limiting factor in the country's development and economic growth. The country's renewable water supply currently meets only about two- thirds of the population's water demands, with water-stress levels (defined as water withdrawals as a proportion of available water resources) increasing from 80% to 100% in the last two decades (UNICEF 2022). A study by Yoon et al. predicts that water-stress levels in Jordan will increase at an average annual rate of 1%-1.5% until 2100, making more than 90% of low-income households in Jordan subject to critical water vulnerability (2021), a situation when water supply does not meet demand over a period of time. Jordan's water stress has a huge impact across sectors, especially the service sector and agriculture (see Figure 4). Water stress also directly correlates with food insecurity, higher infant mortality, educational attainment, and women's and girls' exposure to health risks and lack of educational and livelihood opportunities (UNICEF 2022). While access to safe drinking water has increased to almost 85% in Jordan, many urban households rely on water which, which is relatively expensive, and which is delivered by tanker trucks and obtained through both formal and informal markets. Having to purchase water for domestic use, as opposed to relying on the urban pipe supply, adds an additional financial burden, particularly on low-income households. Urban residents depending on tankers often question the quality of the water sources and complain of experiencing water contamination (UNICEF 2022: 19-21).

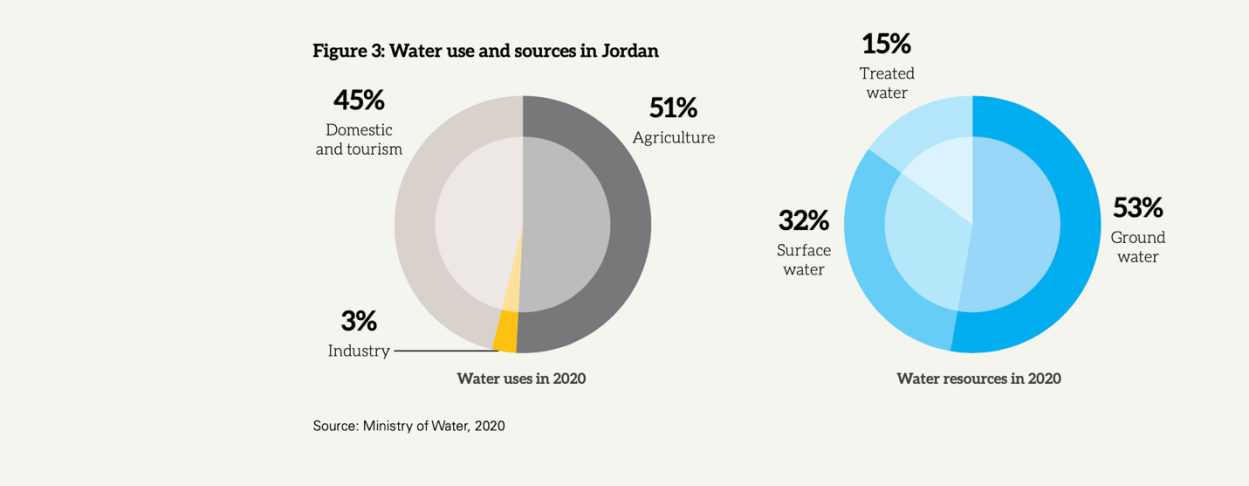

Figure 4. Water use and sources in Jordan

Source: UNICEF 2022.

Northern Jordan is the centre of this crisis, as it is both host to a significant number of refugees, and the region most affected by flash floods, droughts and water scarcity. As Fragasz et al. (2022) highlights "Jordan's underlying water scarcity is a key component of its drought exposure and sensitivity: renewable water availability per capita is now 60% lower than in 1990. While economy-wide water use efficiency (in terms of economic productivity) has decreased in the last decade, this is likely due to the major increase in the share of the municipal water supply sector overall. This is driven by urbanization and refugee influxes, which put immense pressure on the already-strained water supply infrastructure" (Fragaszy et al. 2022: 4).

However, while the discourse emphasizing the negative impact of the refugee influx on water resources is a significant in Jordan (Hussein et al. 2020), it is important to note that the issue of water intensive agriculture, is just as if not more important to Jordan's water scarcity issue (see Figure 1). "The main reasons behind the growing domestic and agricultural water demand could be attributed to government mismanagement of water resources, the expanding process of urbanization, the expansion of agriculture activities, the inefficient agricultural sector, the negative effects of climate change, as well as the influx of refugees" (Hussein et al. 2020, 18). Ultimately, the strain on water resources and the extreme water scarcity that Jordan is currently experiencing is a multi-faceted and complex problem that needs to be addressed across sectors and institutions.

Processes

The Government of Jordan has developed a range of policies that are relevant across the humanitarian-development nexus. These include national economic development policies to sector specific policies, such as water and green growth. All these policies are relevant at some level in the context of host communities, refugees and vulnerability.

Economic development is a foundation block for resilient communities. The Economic Modernisation Vision Executive Program (2023-2025) is a multi-sectoral strategy convened in 2022 by His Majesty King Abdullah II that aims to establish a framework for an inclusive national vision across all sectors (MoPIC 2023). It includes two main strategic pillars: 1) accelerated growth by unleashing full economic potential and 2) improving the quality of life for all citizens.

On the sector level, water is a cross-cutting issues that transcends all aspects of vulnerability. The National Water Strategy 2023-2040, from the Ministry of Water and Irrigation (MWI), proposes an integrated approach to the management of water resources, across sectors and issues such as disaster risk management, climate change adaptation, and gender. The strategy highlights consistently the influx of Syrian refugees and the strain that this has put on the water supply and infrastructure in the country (IMWI 2023).

For the development of anticipatory action approaches in communities hosting refugees and IDPs, Jordan's National Disaster Risk Reduction Strategy (2023-2030) is a critical policy document. The National Center for Security and Crises Management (NCSCM), lays out a strategy summary in relation to the other national strategies and policies, and suggests tools for implementing the strategy and a three-year action plan (2023-2025) (NCSM and UNDP 2023). The strategy lists as Jordan's strengths: high institutional capacity, state-of-the-art institutions, and the political will to work hard on DRR. However, as its weaknesses, an absence of a mechanism to ensure coordination between different sectors, weak capacity to enforce existing DRR systems, lack of a specified budget, and the implications and impacts of the refugee crisis in general; Syrian refugees in particular (NCSM and UNDP 2023: 16). Specifically, this influx of refugees has caused an increased burden on the infrastructure and systems capacity for resilience (NCSM and UNDP 2023: 22). The strategy recommends the inclusion of vulnerable groups, including women, children, and refugees. But the specific implementation proposals do not include more specifics.

The Updated Submission of Jordan's 1st Nationally Determined Contribution 2021, which is directly linked to the NAP, raises the macroeconomic GHG emission reduction target from 14% in the 1st NDC (published in 2016) to 31% by 2023 in this current updated Nationally Determined Contribution (NDC) (MoEnv 2021). The updated submission considers the factors that make vulnerable communities disproportionately impacted by climate change. It also notes that the refugee influx has caused an increase in the strain on natural resources and the municipal waste growth rate, while the overall increase, of up to 10% in population also contributes to increased emissions. As highlighted in the report: "Climate change will definitely exacerbate the already felt increased use of natural resources due to refugees and any plan to enhance the economic resilience of Jordan for assimilating refugees will need to a climate responsive plan as well" (MoEnv 2021: 23). Adaptation measures include: engagement of local community, enhancing early warning systems in poor areas, improving the social protection system for vulnerable groups, integrating climate adaptation into national poverty reduction policies, developing an inventory of climate resilient traditional techniques (such as natural resources management in water and agriculture sectors and utilizing traditional knowledge for local adaptation measures), and the integration of human rights protection (MoEnv, 2023: 51-54).

Jordan Green Growth National Action Plan 2021-2025: Water Sector, produced by MoEnv and MWI, builds on the National Green Growth Plan from 2017 spearheaded by the MoEnv, with support from the Global Green Growth Institute (GGGI) (GGGI 2021). The five national objectives are sustainable economic growth, social development and poverty reduction, climate change adaptation and mitigation, resource efficiency, and enhanced natural capital. The Green Growth National Action Plan (GGNAP) recognizes that the "existing context of social inequities, water scarcity and climate change are likely to have more disproportionate impacts on women, children, refugees and displaced communities" (GGGI 2021: 3). And the goal is to increase climate resilience and building capacity among vulnerable groups to allow them to better adapt to climate change and water scarcity, by *integrating* refugees into the social fabric of Jordan (GGGI 2021: 10). Some adaptation measures include: traditional water storage, aquifer recharge and groundwater storage, soil water storage, water harvesting in combination with supplementary irrigation for droughts, and climate- proofing and increasing the water use efficiency of primarily rainfed agriculture, which is practiced on 60% of Jordan's cropland (GGGI 2021: 11).

The World Bank's Jordan Country Climate and Development Report (2022) brings together Jordan's climate vulnerabilities and development goals into one strategic document. The Country Climate and Development Report (CCDR) contends that for Jordan to meet its climate and development goals, policy and investment improvements are needed in these sectors: water, energy, agriculture, transport and urban development. Goals are organized along two nexuses: water-energy-food security nexus and urban-transport-energy nexus. The project's aim of improving anticipatory action and climate change adaptation in refugee-hosting landscapes is highly relevant to both nexuses, especially in connecting the goal of increased sustainability in the water sector (first nexus) and transforming urban areas into greener cities that are more resilient to climate change (second nexus). Under the pathways to adapt to water scarcity, Priority 3 is to strengthen monitoring and early warning systems for drought (World Bank 2022: 28).

UN Jordan's Annual Results Report (2022), a review of notable achievements from 2018-2022 in collaboration with the Government and the UN Country Team's key partners, including UNRWA, emphasizes a commitment to join initiatives that link humanitarian responses and systems and the UN's development work, especially around equal access for services to refugees and supporting government planning and policy making in both the humanitarian and development sectors (United Nations Jordan 2022).

The Jordan Response Plan (JRP), led by the Ministry of Planning and International Cooperation (MoPIC), represents a partnership between the Government of Jordan and the international community since 2015 to protect Syrian refugees in Jordan and vulnerable Jordanian citizens affected by the Syrian refugee crisis (MoPIC 2020). The main objectives of this plan are strengthening program design and implementation, meeting the protection needs of Syrian refugees and vulnerable Jordanians, and supporting national systems to maintain service provision (MoPIC 2020).

In recent years, the Jordanian government along with humanitarian and development organizations have begun planning strategies and policies to implement a cross-sectoral disaster risk management model, including early warning / early action, anticipatory action, and early responses. The Ministry of Water and Irrigation (MWI), the Ministry of Environment (MoE), and the National Center for Security and Crisis Management (NCSCM) have all recently produced strategy documents that highlight the importance of emergency preparedness, anticipatory action, and disaster risk management to increasing climate resilience and reducing the country's vulnerability to climate related risks (MoEnv 2022; MoEnv 2023; MoEnv and UNDP 2022a; MoEnv and UNDP 2022b; MWI 2023). Jordan's National Disaster Risk Reduction Strategy (2023-2030) by the National Center for Security and Crises Management (NCSCM) notes several challenges around design and implementation, including the lack of a mechanism to ensure coordination between different sectors, a weak capacity to enforce existing DRR systems, and the lack of a specified budget (NCSM and UNDP 2023). The gaps in existing disaster risk reduction and anticipatory action include climate adaption strategies and climate resilience programming. There is an opportunity in this space to develop nature-based solutions (NbS) that address climate risks such as flash flooding and water scarcity.

4.3 Internally Displaced Persons in Pakistan

People

The study area for the AHEAD case study is district Rahim Yar Khan (RYK) which sits on the eastern side of the Indus River, and which was subject to devastating impacts from the 2022 floods in Pakistan. The district is the fifth largest in the province, with an estimated 827,525 households, average household size of 6.72 and a host community population of 5.56 million (PBS 2023). RYK is geographically divided into four *tehsils* (administrative divisions) called Sadiqabad, Rahim Yar Khan, Khanpur and Liaquatpur, along with the geographical feature of the Cholistan Desert. It is classified as having a low socio-economic status due to "unfavourable" social, cultural, and economic conditions (PBS, 2023).

In RYK, the primary driver of displacement was overwhelmingly attributed to the 2022 floods (98%), with a minority citing drought or economic factors. Families migrated from other districts in Punjab province (41%), within another town or city in RYK (40%) and from neighbouring Sindh province (18%), with a small minority (0.48%) having migrated from Khyber Pakhtunkhwa or Balochistan provinces.

After the 2022 floods, many households migrated collectively as communities, settling in vacant areas or places with livelihood opportunities, driven by the need to ensure family safety amidst flood-related challenges. Most research participants were labourers in agricultural fields, tending to the land. They reported that all their crops – and thus their livelihoods – were destroyed during the 2022 floods. Many homes were washed away, forcing them to move toward safety.

Generally, there was a sense that life was good, or at least manageable, before the 2022 floods. Participants may not have been wealthy but were able to earn a living. Others living further from the flood plains mentioned the heatwave period and drought-like conditions (March to May 2022) before the floods began had caused water levels in the river to decrease and stunted crop production. Low water quantity affected livelihoods, compelling many families to migrate.

While seasonal migration is commonplace in areas close to the Indus River, majority of respondents reported they would stay and settle in their current area (87%) rather than move back home (5%), while some were still unsure (7%). This may be attributed to the fact that majority reported their homes were fully destroyed (95%) and their source of income/livelihood negatively affected (96%) before they were forced to moved.

The data reveals the profound impacts of the 2022 floods on the communities, highlighting the struggles they faced and continue to endure. Many households migrated together, seeking safety and livelihood opportunities. The primary occupation of participants was agricultural labour, and the floods damaged crops which were crucial for their sustenance.

Sanitation infrastructure also suffered significantly. Many households relied on open fields for defecation before and after the floods, facing increased dangers and discomforts. The lack of adequate sanitation facilities, especially in Cholistan Desert and Sadiqabad, where open defecation is common, poses severe health risks. Discussions revealed that women faced particular challenges, including fears of encountering dangerous animals and insects.

Menstrual Hygiene Management (MHM) also remains a significant concern. Water shortages and contaminated sources made it difficult for women to maintain their menstrual hygiene practices, leading to health issues like infections. Financial constraints worsened the situation as families struggled to afford sanitary products. The lack of privacy and proper facilities exacerbated these challenges, with many women resorting to inadequate methods for managing menstruation.

Health problems surged due to poor water and sanitation, with diarrhoea, malaria, typhoid, and skin rashes being common. Medical facilities were damaged, forcing people to travel long distances for healthcare. The stress of these conditions also took a mental toll, leading to interpersonal disputes and in extreme cases, tragedies such as suicides.

Water insecurity is also exacerbating food insecurity, highlighting the need for integrated interventions in agriculture, sanitation, and water management. Women experience higher levels of water and food insecurity than men, emphasizing the gendered dimensions of these issues. Addressing food insecurity requires a systemic approach within disaster response and anticipatory actions. Pre-disaster economic conditions were already poor for many households, and subsequent migration and displacement have further deepened their poverty and increased economic vulnerability. Long-term recovery programs are needed to help displaced individuals regain stability and move out of poverty.

As mentioned, food insecurity is another critical issue, with almost all surveyed experiencing moderate to severe food insecurity and women experiencing higher prevalence of food insecurity than men. High inflation and disrupted livelihoods forced families to reduce their meals, rely on charity, and make difficult choices about food distribution within households.

Living standards declined sharply post-migration, with a significant increase in households classified under the poorest wealth quintile category. Before migration or displacement, majority respondents were already in the poor (31%) or poorest (56%) wealth quintiles, with a 22% increase post-migration/displacement into the poorest wealth quintile (78%). Sex-disaggregated data reveal that the prevalence of men and women in the poorest wealth quintiles also increased after migration/displacement

(from 57% to 85% of men and from 53% to 68% of women). This economic deterioration underscores the urgent need for long-term support and resilience-building for these communities. Population growth in District Rahim Yar Khan from approximately 4.8 million in 2017 to 5.56 million in 2023 is an indication of reduction in per-capita income growth and well-being, which tends to increase poverty. The densely populated district[4], puts pressure on land, with population growth increasing landlessness and hence the incidence of poverty (PBS, 2023).

Place

RYK is located on the southern border of Punjab province in Pakistan. RYK borders Sindh province and India on the south, district Rajanpur on the west, district Muzaffargarh on the north, and district Bahawalpur on the east. RYK has an arid and dry climate characterized by extremely hot and dry summers and cool and pleasant winters, with temperatures ranging from as low as 5°C and maximum temperatures reaching up to 40°C. Annual rainfall in the district is around 101 mm (PMD 2023). With around 80% of the population residing in rural areas, the RYK's economy revolves largely around agriculture, with the cultivation of major crops such as cotton, sugarcane and wheat, which not only sustain the local population but also form a crucial part of Pakistan's export economy. RYK faces various challenges including low literacy rates (32%), poor sanitation facilities (59% population access), susceptibility to seasonal floods and droughts, and water contamination leading to public health concerns and prevalence of Hepatitis and other water-borne illnesses (ADB 2020; Afzal et al. 2021). Notably, approximately half of the district's population is at risk of flooding while 25% face the risk of epidemics - though it should be noted that IDP figures are not known (PDMA 2022). Additionally, around 40% of the houses in the district are *kacha* (made from non-durable materials like mud, grass, bamboo, wood) homes, implying susceptibility to damage from hazards such as floods or storms (ABD 2020).

In addition to serving as a hosting area, RYK is vulnerable to a number of natural hazards. RYK is situated close to other climate-vulnerable districts from Sindh, Punjab and Balochistan provinces, which has led to forced migration and the movement of IDPs within the district during and after disasters, including the 2022 flood. Further, the district includes the Cholistan Desert which is prone to drought and locust attacks. In recent years, the district has faced unpredictable precipitation patterns and recurring floods, leading to human casualties and damage to infrastructure (PBS 2023; PDMA 2022). The 2022 floods exacerbated vulnerabilities among migrants and host communities in RYK, particularly those residing in exposed environments, exacerbating socio-economic inequalities and driving climate-induced migration and displacement.

Rahim Yar Khan has always faced issues with water quality and high prevalence of waterborne illnesses, including hepatitis, diarrheal diseases, typhoid and intestinal worms (Zubair et al. 2024). Further, water sampling conducted across the district from handpumps and tubewells shows high levels of arsenic, Total Dissolved Solids (TDS) and other contaminants. Before the floods, handpumps were a primary water source, but many were washed away, forcing people to travel long distances for water, often dirty, leading to sickness. Now, climate migrants mainly use handpumps, public taps, and occasionally tubewells. Despite some improvements, many still face challenges such as long wait times, safety concerns, and accessibility issues for those with disabilities.

District-specific data on damage and impacts from past disasters in RYK are scarce or not publicly available. The 2022 District Disaster Management Plan for RYK states that 400 and 216 people were affected by floods in 2017 and 2020, respectively, with no detail on what being 'affected' entails (e.g., injuries, displacement, etc.) and no sex- and age-disaggregated information. The report records 2 deaths from 2017 flooding and 146 houses fully damaged. During major floods in 2010, 22,000 houses were damaged, 1 million people were affected (with 70% women and children), 250,000 people displaced, and 113 school buildings affected (NDMA 2020). Updated statistics from the 2022 floods for RYK district are unknown. As of October 2022, only 5 deaths were officially recorded (PDMA, 2022), though this number is likely underreported based on ground realities from qualitative interviews. A rapid needs assessment conducted by a well-established local NGO working in RYK reports that in the flood-affected areas of the district, around 115 and 89 houses were fully and partially destroyed, respectively (REEDS 2022). Further, their assessment found around 70 to 80 percent of 1,232 acres cotton crop destroyed, 82 livestock lost, and nearly 45,000 kilograms (1205 maunds) of stored wheat grain spoiled by the waters (ibid.). Exact statistics for the district remain unknown.

Processes

Pakistan's approach to disaster management is guided by a series of comprehensive policies and plans, each designed to address various aspects of the complex landscape of disaster preparedness, response, and recovery. The country is also a member state that has adopted the Sendai Framework for Disaster Risk Reduction (DRR) (2015-2030), which has been recognized at the national level with varying levels of implementation across provinces. However, addressing migration or displacement is

[4] Population density per sq.km increased from 404.69 in 2017 to 468.41 in 2023.

not at the forefront of policies or planning in terms of thinking about social safety nets or legal protections for climate migrants, as well as long-term recovery initiatives. This section rather presents an overview of existing policies and plans for disaster response and management in Pakistan to inform the subsequent sections of the paper, particularly the aspects of vulnerability.

Since the 2022 floods, there has been a renewed recognition for the need for more proactive approaches to disaster planning and response. For example, the first National Dialogue Platform on Anticipatory Action took place in the federal capital in December 2023. Further, the most recent updates to the National Disaster Management Plan (NDMA 2024a) and National Disaster Response Plan (NDMA 2024b) explicitly state the need for more proactive approaches and anticipatory actions. While these policies and initiatives are a step in the right direction, there remain gaps in the actual operationalization and implementation - including financing - of these plans.

Pakistan has a challenging overlap of functions among DRM agencies and stakeholders, which leads to a lack of clarity in the chain of command from national to sub-national levels (Mahsud n.d.). For example, the National Disaster Response Plan of 2024-2025 lists 27 stakeholders and partners in disaster management across provincial, district, and local levels. Yet at just the federal level, it lists 39 ministries, departments, and authorities cited as having an important role for disaster management. This multitude of stakeholders often results in blurred roles and responsibilities, making it difficult to coordinate efforts efficiently. Overlapping mandates can lead to redundancy, gaps in service delivery, and confusion over which agency or department is responsible for specific actions during disaster response and recovery. Coordination becomes particularly challenging during emergencies when clear, decisive action is needed. Moreover, this ambiguity hinders effective communication and collaboration not just among government agencies, but between civil society and international partners who also play key roles in disaster response efforts.

Despite policy efforts and institutional mandates aiming for comprehensive DRM, government interventions still predominantly lean toward responsiveness rather than a focus on preparedness and risk reduction. These challenges have been exacerbated since the passing of the 18th Amendment to the Constitution in 2010, which resulted in the transfer of power from the federal government to the provinces. Several key informants (KIs) from the government expressed strong concerns that the devolution of federal powers has negatively impacted planning and coordination in Pakistan, particularly regarding provincial and district budgeting.

Others shared similar views that while devolution was intended to empower local governments, without proper technical and financial support it has instead led to fragmented governance and weakened disaster management capabilities, particularly of district authorities, who are "the most critical linchpin in the entire response system" (Former government informant, Islamabad). Moreover, the devolution process has created disparities in technical and financial resource distribution, with some regions better equipped than others, further exacerbating the vulnerabilities of under-resourced areas.

Other notable policies which are important for disaster response and management include the National Adaptation Plan (MCCEC 2023), National Climate Change Policy (MCC 2021), National Water Policy (MWR 2018), National Environmental Policy (ME 2005), Pakistan Vision 2025 (MPDR 2013), and Updated Nationally Determined Contributions (GoP 2021), the National Action Plan for Surveillance and Control of Desert Locust in Pakistan (NAP-DL-Pak) (MNFSR 2021).

5. Anticipatory Action and Risk Reduction in Refugee Hosting Communities

The three case studies highlight a range of different contexts, risks and vulnerabilities. While the hazards and drivers of forced displacement are different in each case study the management of risk, through a number of risk reduction measures, is a constant. This section explores these key themes through an introduction to risk and vulnerability, which is then applied to the case studies.

Disaster risk is a function of the intensity of the hazard and vulnerability (Risk = Hazard x Vulnerability). Vulnerability is defined as the capacity to anticipate, cope with, resist and recover from the impact of a hazard (Wisner et al. 2004). Crisis situations therefore have a higher impact in vulnerable areas and a disproportionate impact on the urban poor, especially women, children and the elderly. Fragile states are currently in the centre of the humanitarian-development-peace nexus debate (see Table 2 for examples of the practices and tools applied across the nexus). The nexus highlights the importance in supporting the transition from humanitarian response to longer-term development, and the integrated strategy of near- and long-term interventions to promote resilience, such as anticipatory action to climate adaptation strategies, including nature-based solutions. Many of the fragile states, a group of 30 to 50 countries depending on the definition used, are low-income countries characterized by a weak state capacity or ineffective or "bad" governance. In these states achieving any of the sustainable development goals is a particularly difficult challenge. Their economic, social and political institutions have a diminished capacity to absorb shocks, and they are therefore more susceptible to conflict and crisis. As the level of vulnerability determines the actual impact of a hazard, the impact will be more extensive in these countries than in countries characterized by security and stability, thus highlighting the increased attention needed for these fragile states.

Table 2. Examples of practices and tools across the humanitarian-development-peace nexus

Humanitarian-Development-Peace Nexus	
Examples of humanitarian practices & tools	***Examples of development practices & tools***
Anticipatory Action – trigger / parameters for action, pre-agreed activities, pre-committed funding, early warning signs, provision of aid	Contingency planning / emergency planning – anticipates relief interventions until resilience capacities are reinforced
Community-based DRR – community action plans embedded in participatory approaches or community managed, NGO led	Disaster risk reduction (DRR) – national / government action plans using a top-down approach so often lacking the community dimensions at the local level
Early warning systems – from high-tech metrological forecasting systems to community-based watershed monitoring	Long-term development plans – addressing underlining causes of vulnerability and strengthens people's resilience to frequent risks
Urban humanitarian response – area-based approaches, geographically targeted, multi-sectoral, participatory approach	Urban planning – building codes and regulations, land use zoning for mitigation of physical hazards, protection of hazardous flood prone areas / steep slopes
Greening innovation and urban agriculture – interventions for refugee camps and settlements	Disaster risk management (DRM) – response/relief, recovery, mitigation, preparedness, prevention
Environmental peacebuilding – agriculture in post-conflict stabilisation and peacebuilding	Climate change adaptation strategies – practical actions reducing vulnerability to climate change impacts
Cash-based responses – evidence shows cash transfer programmes (CTPs) should be prioritized in urban populations affected by crisis	Sustainable livelihoods framework – objectives, scope and priorities for development to enhance progress in poverty elimination Resource, recovery and reuse – liquid and solid waste flows for greywater irrigation and compost production

Source: DFID, 1999; Adam-Bradford et al. 2009; Parker and Maynard, 2015; Smith et al. 2016; Adam-Bradford et al. 2017; Otoo and Drechsel, 2018; Adam-Bradford at al. 2020; Schindler et al. 2023.

In the Ethiopia case, for example, both water supply and irrigation systems are unable to respond to the needs of growing populations and are vulnerable to the effects of droughts, floods, and other weather extremes. This has led to insecure livelihoods and over-dependence on humanitarian aid. To support a transition to more locally driven and sustainable solutions, and to strengthen the resilience of water supply and irrigation systems, anticipatory action should be prioritized, enhancing adaptation to climate change, and increasing resilience to economic stresses. Anticipatory action can help protect developmental gains, ensure functioning of essential services during emergencies, and limit resources spent on post-disaster rehabilitation.

In northern Jordan, flash flooding is one of the main extreme climate related risks. Flash flooding occurs in all the low-lying and flood prone areas of Irbid, including the business centre of the city, as well as surrounding residential areas, such as the Al Afrah neighbourhood. In flood prone neighbourhoods the rental fees are lower, which can indicate higher resident numbers of Syrian refugees. The shorter and more intense periods of heavy rainfall during the winter months are resulting in an increase of flash flooding events (Al Azxam and Al Kuisi, 2021). The steep undulating topography of the city provides extensive sloped surfaces that rapidly accelerate surface waters during rainfall events. The impermeable surfaces of buildings, carparks, pavements and roads prevent water infiltration into the ground while also enabling surface flows to rapidly flow. The limited drainage infrastructure reaches full capacity in light rains, so the system is completely inundated during heavy rains. Also, not all areas are covered with drainage infrastructure. These factors create conditions that increase the risk of flooding. When heavy intense rainfall occurs then flash flooding is an inevitable consequence. Previously, urban planning has failed to incorporate these risk factors into planning strategies, for example there has been a lack of zoning of flood prone areas, although this is now underway as flood hot spots are currently being mapped out for the city.

In the event of an emergency or disaster the Jordanian Civil Defense is the lead responding agency. Irbid Municipality provides a supporting role with the provision of human resources and logistics. At the Municipality level an incident coordinator is established, and they provide the direct link to the Civil Defense. Through the coordinator teams and vehicles are provided to assist with any evacuations and clean ups. Flash flood events are so frequent during the winter that the Municipality has become more efficient in its reactive response mechanisms. For example, in 2023 following a flash flood event in the city, the municipality had responded, evacuated the area, allowed the flood waters to recede and then cleaned up the area, all within a 3-week period.

Because flood resilience has not been a factor in urban planning, flood prone areas are not zoned properly to prevent unsuitable development in those locations. Resilience planning has been lacking in the urban planning of Irbid. As Al Azxam and Al Kuisi (2021: 81) highlight: "Recently, flash-flood problems in Jordan have largely increased due to different factors such as the continuous changing in land use/land cover due to inadequate enforcement laws, urbanization activities' expansion in flash-flood prone areas, low-quality constructions, and the increasing of the urbanization density".

In Pakistan, introducing risk reduction measures faces several challenges, such as infrastructure deficiency across a range of sectors. The district's heavy reliance on often contaminated groundwater raises quality concerns. Migrant and IDP communities have limited access to clean water sources, with women bearing the primary burden of water collection. Additionally, inadequate housing construction in flood-prone areas has led to widespread home destruction, lengthening recovery times and increasing the likelihood of forced migration. The region is beset with limited access to sanitation and health services has resulted in widespread waterborne illnesses, disproportionately affecting women, particularly those who are pregnant or breastfeeding. Menstrual hygiene management is also a significant concern, with inadequate access to clean water and private spaces for women during menstruation.

Displacement and loss of homes have caused significant mental health challenges, including household tensions and disputes over shared resources. Economic strain from inflation has further exacerbated these issues, leading to increased familial conflicts. All these challenges are compounded by poor planning and coordination in disaster response: The reactive nature of provincial disaster management, combined with a government-centric framework and minimal community involvement, has led to fragmented disaster response efforts. A shift toward inclusive, community-centered planning that integrates local stakeholders and long-term development goals is essential for effective disaster management.

In all three case study locations there are clear opportunities for anticipatory action approaches. These are not a substitute for disaster risk reduction *writ large*, but rather as a component of a longer-term risk reduction strategy that builds resilience. This should also be linked to longer-term adaptation strategies that may mitigate the impacts from extreme climatic events or even prevent a crisis from occurring all together. Mitigation measures include land use and zoning practices that prevent construction in flood prone areas and implementing, enforcing building regulations and managing waste. Nature-based solutions also offer innovative and low-cost solutions to mitigate and prevent extreme climatic risks. In the long term, nature-based solutions (NbS) are needed to develop climate resilience and adaptation in each of the case studies.

6. Development of an Integrated Host Community Vulnerability Framework

6.1 Introduction to the Framework

The aim of the IHCVF is to provide an analytical tool that can be used to further understand complex issues of vulnerability in refugee hosting communities, and to guide the design and implementation of interventions that promote resilience across the refugee hosting landscape, particularly in urban, peri-urban and displacement camp settings. The tool allows this integration to be made in a systematic manner. It takes inspiration from and thus builds upon the area-based approach to humanitarian response to urban crisis, by adapting the three common characteristics, as suggested by Parker and Maynard (2015), in that area-based approaches "are geographically targeted, and adopt a multi-sectoral, participatory approach (see Figure 5).

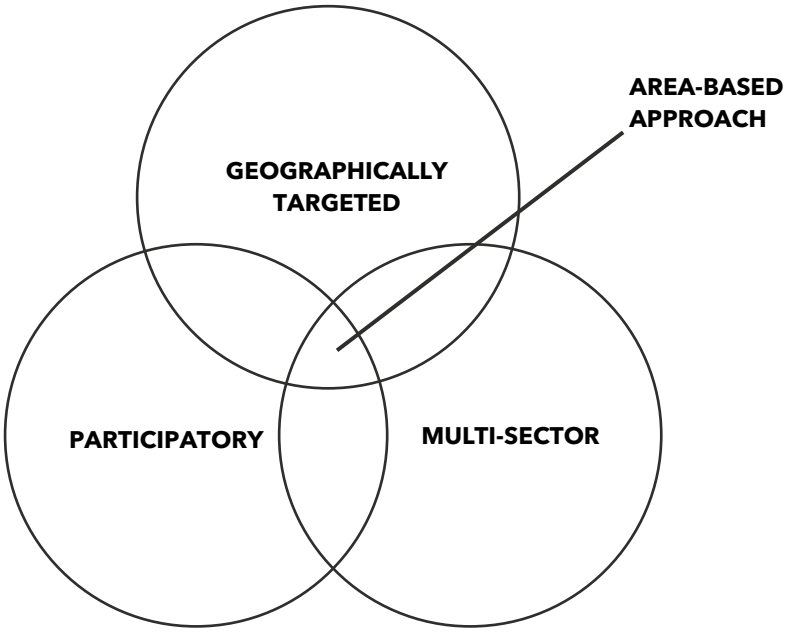

Figure 5. Diagrammatic representation of the characteristics of an area-based approach

Source: Parker and Maynard 2015: 9.

6.2 Structure of the Framework

From the case studies, the IHCVF has been developed through a process of inductive and deductive methods. Initially the framework consisted of three analytical components – **People, Place and Processes** – that that have been adapted from the area-based approach. Then a fourth was added – **Actions & Responses** – as a cross-cutting measure that offers practical actions and responses to each of the three analytical components, the four main components are listed as:

- People
- Place
- Processes
- **Actions & Responses**

As shown in Figure 1, each analytical component has three sub-components that group a range of contexts, factors, or issues together the sub-components have direct impacts on each other. To illustrate this, they are laid out in a triangular formation with two-way red arrows between each sub-component. These impacts may indicate increased risk or vulnerability depending on the specific context. The example for the **People** component is given in Figure 6.

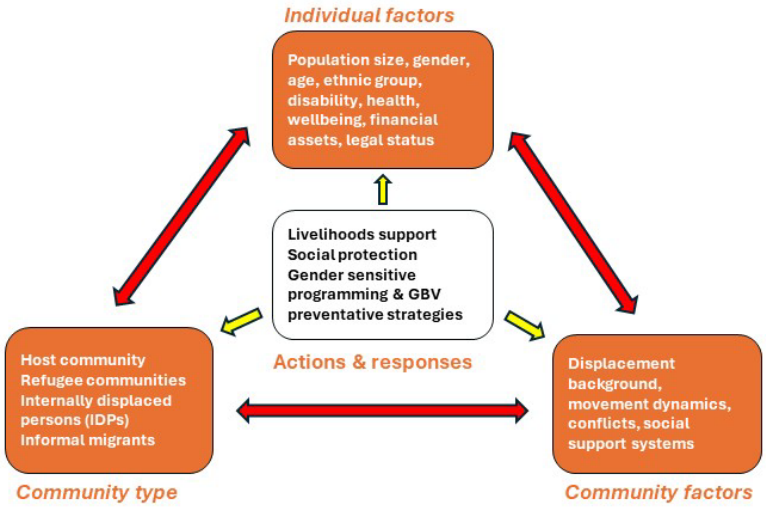

Figure 6. The **People** component with the three sub-components and the **Actions & Responses** (*Source:* Authors)

Nestled in the center of each triangular formation are the **Actions & Responses** relevant to that the component, yellow arrows illustrate the linkages to the sub-components. Presenting the full framework, the three components are laid out in a higher-level triangular formation. Again, these components are connected with two-way red arrows between each component to illustrate the direct impacts and relationships between each other, as shown in Figure 7.

Finally, nestled in the center of the full framework, is a reminder of the cross-cutting component of **Actions & Responses** to illustrate that practical action can be taken to manage trade-offs and reduce risks and vulnerabilities between the three components. Again, yellow arrows illustrate the linkages to the main components. The specific details of the practical examples of actions and responses are found nestled in each of the component triangles.

Figure 7. Integrated Host Community Vulnerability Framework (*Source:* Authors)

7. Conclusion and Recommendations

This research report provides a synthesis of the work that was conducted under the ANTICIPATE work package from the CGIAR Initiative on Fragility, Conflict, and Migration. It also includes the IHCVF, an analytical tool to examine the three case studies from Ethiopia, Jordan and Pakistan.

In the Somali region of Ethiopia, refugee hosting communities face several water- and climate-related risks leading to water insecurity. Disasters such as floods and drought exacerbate water insecurity by weakening water supply and irrigation systems. While UNHCR invested in water infrastructure, institutions, and technologies over the last decade, dwindling funding has prompted a revaluation of who should be directing long-term development efforts. In this context, the Melkadida Refugee Compact (MRC) presents an opportunity to transition responsibilities from UNHCR and other humanitarian organizations to local and regional governments. This is considered essential to moving from dependence on short-term humanitarian relief to self-directed and long-term resilience building.

In northern Jordan, the refugee hosting communities face multiple water-related risks, extreme weather-related hazards, rapid urbanization and population increase, and socio-economic factors. The data in this report shows that the challenges to building resilience in refugee and hosting communities include the increasing climate change impacts on food, land, and water security, the absence of integrated resilience building approaches developed for refugee-host communities, rapid population growth and urbanization, and the lack of a cross-sectoral policy environment for DRR or a common strategy for humanitarian and development organization interventions. These challenges need to be addressed in order to design interventions that address the specific vulnerabilities and needs of refugee and hosting communities in Irbid and Ramtha.

In the district of Rahim Yar Khan (RYK) in Pakistan, significant challenges are posed by climate-induced migration. Addressing the challenges posed by climate-induced migration and displacement requires a multi-faceted approach that integrates immediate relief efforts with long-term strategies for resilience and sustainable development. The survey results underscore the critical need for infrastructure development, improved access to essential services, and the adoption of climate-resilient agricultural practices. Women, in particular, face disproportionate burdens related to water collection and sanitation, exacerbating their vulnerability in the face of climate change.

In communities hosting displaced persons, as the case studies have shown, there are common risks to FLWSs, that require multifaceted responses, particularly with policy recommendations to support the development and implementation of anticipatory action strategies. This can be enhanced through the application of an IHCVF that supports the planning and design of anticipatory action approaches, disaster risk reduction (DRR) and longer-term resilience-building initiatives, such as climate adaptation strategies and nature-based solutions.

The first version of the IHCVF, which was presented here, would benefit from additional testing in order to ensure the content is rigorous and fit-for-purpose. For example, a process of refinement may include aligning the framework with other vulnerability assessment strategies currently in use in target locations. The framework can also be used to guide policy (e.g., new development strategies, national adaptation plans), and associated public and private investments and community-based action. At the core of the IHCVF is cross-sector analysis and action. Given the complexities of each hosting context, each case will provide opportunities to strengthen sector integration to ensure more holistic responses to vulnerability. Finally, the framework could be applied in a range of contexts across different countries, such as the three case studies presented. This process would enhance the framework through contextual application and ground-truthing.

This research underscores the critical need for integrated, anticipatory approaches to address the unique vulnerabilities of refugee-hosting communities in fragile and conflict-affected settings. By refining and applying the IHCVF across diverse contexts, we can strengthen cross-sectoral strategies and foster sustainable resilience-building tailored to the needs of displaced populations and their host communities. To further this agenda, stakeholders must prioritize collaborative efforts that bridge humanitarian and development interventions, supported by increased investment in context-specific research, capacity building, and inclusive policy design.

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