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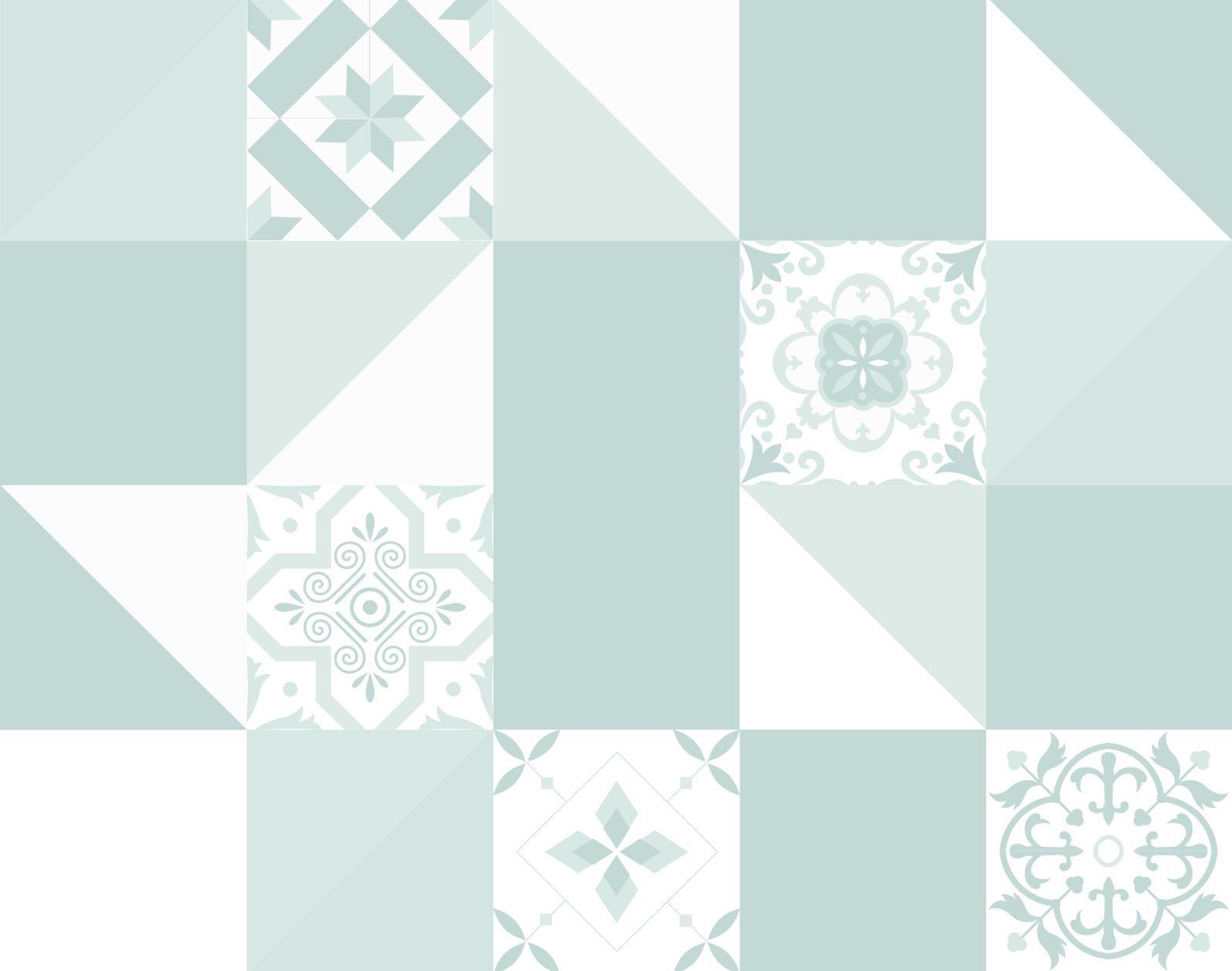


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# Is Climate Change a Driver of Mobility?

## *A Mapping of Perceptions in Egypt, Morocco and Tunisia*





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# Executive Summary

The intensity and pace of climate change is a source of concern worldwide. Weather-related events are taking an increasingly heavy and obvious toll, pressing policy-makers to act decisively to safeguard natural resources and to protect populations from harm.

Against this backdrop, it has become routine for the public discourse to associate climate change and its impacts with migration and mobility. In Europe and the global north in general, climate change is often perceived as precipitating a new stage of large-scale mobility from developing countries. The occurrence of floods, droughts and other natural disasters and the resulting population displacement, contributes to cement the assumption that climate change and mobility are two sides of the same coin.

The Middle East and North Africa (MENA) region is facing severe climate risks. In fact, scientific projections indicate that the region is warming up faster than the global average, exposing local populations to a series of threats directly and indirectly associated with climate change. However, the migration and mobility implications of this phenomenon have been contentious. Indeed, measuring climate mobility is fraught with challenges, from assessing people's propensity to migrate to identifying obstacles to movement.

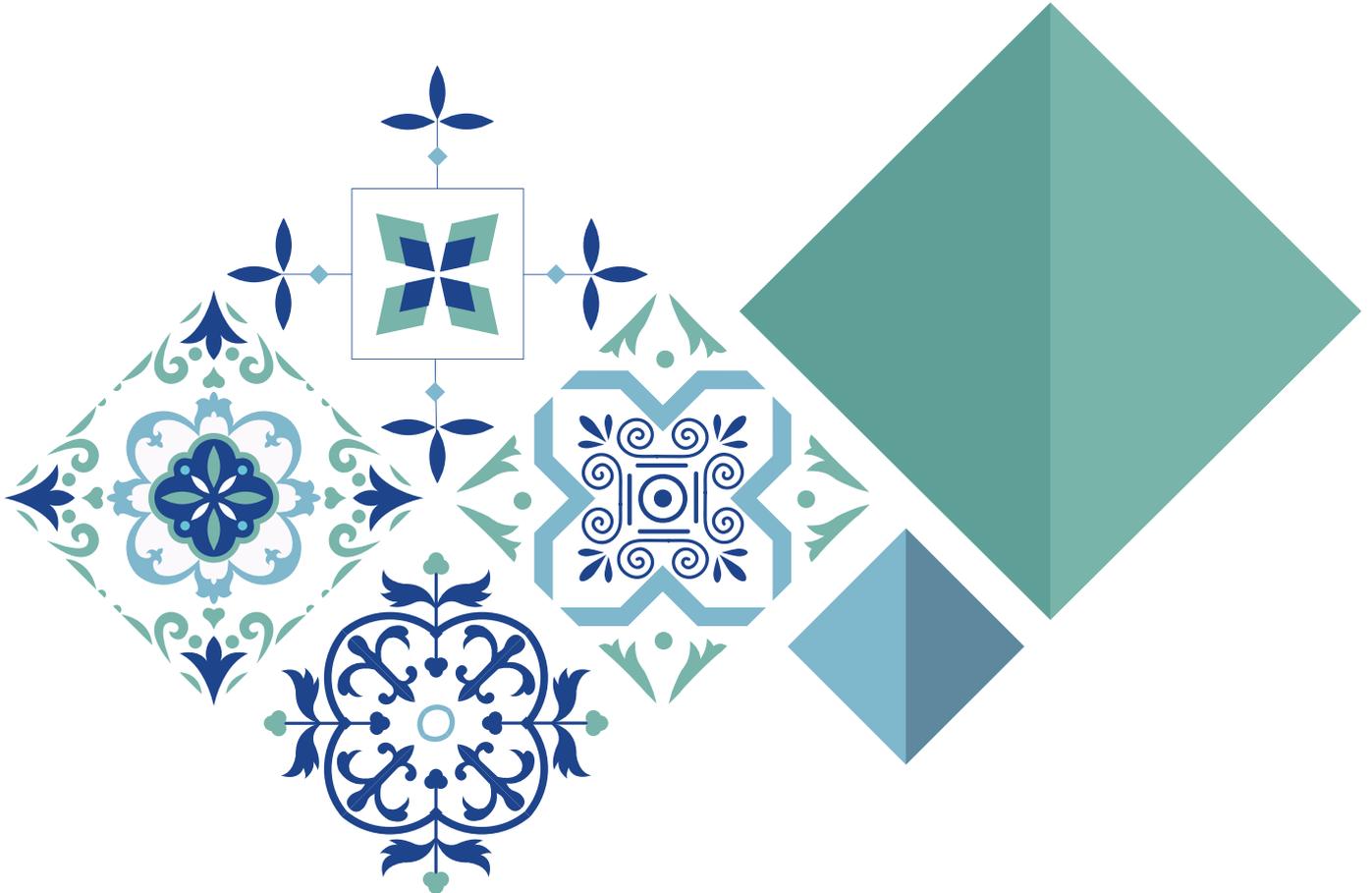
This study aims to consider the various perceptions and narratives surrounding climate mobility in three different countries: Egypt, Morocco and Tunisia. Based on key stakeholder interviews, this work aims to provide policy-makers with pointers to understand how the public discussion on the climate mobility nexus is progressing in these countries. The research focuses on exposing people's perceptions of climate impacts and how these perceptions shape decision-making mechanisms related to mobility. In doing so it aims to uncover the complex and singular realities that current reporting on climate mobility tends to mask.

The findings of the study can be summarised as follows:

- The MENA region is highly exposed to the adverse impacts of climate change. Particularly, water stress is set to be aggravated by declining rainfall, temperatures' increase and pollution of basins and waterways. For this reason, out-migration for climate reasons is widely assumed to intensify;
- Previous research indicates that awareness and perception of risks usually informs mobility-related decision processes. This includes risks both related to staying as well as to moving;
- Cross-stakeholder advocacy efforts on climate mitigation and adaptation are bearing fruit: Indicators of climate change awareness and understanding of its livelihood impacts is on the rise throughout the region and across demographics;
- Nonetheless key challenges related to awareness and perceptions remain: in all three countries, environmental issues and climate change are considered in isolation. This misperception affects countries' capacity and readiness to tackle the root causes of environmental stress;
- Awareness-raising institutional campaigns on climate are frequently undermined by inadequate targeting and communication channels, as well as unfocused messaging. This contributes to blur the interdependence between climate mitigation efforts and quality of life;
- Although people don't promptly report climate as a motive for migration, it doesn't signal climatic conditions are overstated in public discourse. Rather it points to a lack of contextualisation efforts between economic problems and environmental drivers underpinning them;
- In the context of climate change, people from rural areas are the most prone to be aspiring to move or to have moved following slow-onset weather events. This is because rural livelihoods are much more sensitive to weather changes than urban ones.
- Barriers to out-migration play a decisive role in shaping perceptions and influencing decision-making related

to migration. These barriers are either formal or informal and vary according to the place, status and group considered.

- Women are simultaneously more exposed to, and more perceptive of the impacts of climate change. Nonetheless they face higher barriers to mobility than men, hampering their capacity and prospects to adapt to climate change.
- People in climate-affected areas display strong attachment to land, communities and local identity. Attachment is therefore set to play a moderating influence on migration intentions despite profound socio-economic disruptions in rural areas.



# 1. Introduction

Estimates consider the Middle East and North Africa (MENA) as one of the regions that will be most impacted by climate change, with increased predictions of extreme weather events, and important changes in temperature and sea levels, as well as fluctuating precipitation patterns<sup>1</sup>. However, the focus of these climate change effects tend to emphasise their scientific dimensions, and to a lesser extent the development implications for the region, notably in terms of human mobility. In light of these dynamics, it is essential to consider how climate change intersects with the region's ongoing and potential future challenges, including urbanisation, human displacement, food security and water scarcity, all in contexts of increased social and economic inequality.

In this context, understanding how climate change affects human migration, whether planned or unplanned, calls for a deeper assessment of migration decisions and trends, both internally and externally and how mobility may be conceived as a response to climate shocks. Interestingly, surveys and testimonies from affected communities have been found to play down the importance of climate factors in mobility decisions, despite considerable evidence attesting to the harmful impact of climate change on peoples' opportunities and livelihoods<sup>2</sup>. This report tackles this apparent contradiction and investigates what climate change means for different segments of society, such as the most marginalised populations in the region, including women, youth and minorities.

Building on previous research under EMM5, the report looks at most exposed communities and the ways in which climate change is perceived to affect the livelihoods and lives of rural farmers for example, and how it interacts with broader dynamics of urbanisation and rural-urban migration movements.

More specifically, this study interrogates the following:

- The MENA region is highly exposed to the adverse impacts of climate change. Particularly, water stress is set to be aggravated by declining rainfall, temperatures' increase and pollution of basins and waterways. For this reason, out-migration for climate reasons is widely assumed to intensify;
- Previous research indicates that awareness and perception of risks usually informs mobility-related decision processes. This includes risks both related to staying as well as to moving;
- Cross-stakeholder advocacy efforts on climate mitigation and adaptation are bearing fruit: Indicators of climate change awareness and understanding of its livelihood impacts is on the rise throughout the region and across demographics;

On this basis, the report's policy recommendations are geared to:

- Enhance the targeting and reach of climate awareness campaigns;
- Assess vulnerabilities in light of climate impact and pinpoint demographics most inclined to move or attempt to move as a result of climate impacts;
- Better ascribe climate drivers to mobility intentions according to the socio-economic context and pre-existing group characteristics;
- Highlight areas for further development and research towards addressing climate-related vulnerabilities and its human mobility outcomes.

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<sup>1</sup> (Fawal, 2022)

<sup>2</sup> (Mixed Migration Centre, 2023)

# 2. Methodology



## 2.1 Geographic scope

Climate impacts are known to vary considerably from one country to another. Within countries, observations related to temperature, precipitations, occurrence of natural disasters, etc. follow widely different patterns depending on the area under consideration. Consequently, the impact of climate change is not felt uniformly by populations across a given territory. Typically, coastal communities are exposed to problems such as sea-level rise and salinization while inland communities or landlocked countries have different challenges to face up to. This is why locally-owned and -led solutions are often presented as the most effective instrument for climate action.

On account of these complex realities, the report focuses on three different national contexts, as case studies to investigate the ways in which awareness and perceptions of climate change interact with migration decisions and aspirations. The countries selected were Egypt, Morocco, and Tunisia, for their exposure to the multi-faceted threat of climate change and their prominent role in regional migration flows.

In the case of Egypt more particularly, the case of the COP27 held in November 2022 in Sharm al Sheikh provides an opportunity to further explore the salience of climate issues in public debates and the ways in which it is perceived by different communities in Egypt and beyond. Morocco has also been at the forefront of global climate change debates following COP 22 in Marrakesh in November 2016 and the country's increased efforts in strengthening its investments in renewable energies and green financing<sup>3</sup>. Tunisia also presents an interesting case given the country's geographic vulnerability to weather events and increased impact of climate change on its water resources and arable land.

Importantly, all three countries present pertinent yet singular examples of both vulnerability and exposure to climate change. Taken together, they encapsulate the major current and projected climate risks affecting the Mediterranean region. In this sense, these countries' experience in absorbing and responding to climate shocks is likely to speak to the rest of the region.

Furthermore, it is important to highlight that Egypt, Morocco and Tunisia are key countries of origin, transit and destination of migrants. In all three countries, mobility is as much a lived experience as a subject of societal and political discourse. Examining this phenomenon and how it is viewed under the light of climate change, and whether mobility is exacerbated as a result of it, is therefore particularly pertinent in this context.

## 2.2 Main sources

The study builds on findings from primary and secondary data following a mixed-methods approach. Based on data from the Afrobarometer and Arab Barometer surveys as well as qualitative data from semi-structured interviews conducted in Egypt, Morocco and Tunisia, the study builds on existing knowledge and provides new insights into the link between climate change, perceptions of climate change and migration decisions. In the context of this study, fieldwork was conducted in Egypt, Morocco and Tunisia, focusing on relevant stakeholders in various regions of each country. Fieldwork took place between December 2022 and January 2023, and interviews were conducted online, in-person and over the phone in Arabic, French and English. This fieldwork encompassed a total of 22 interviews.

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<sup>3</sup> (Christofaro, 2022)

## 2.3 Key informant interviews

As presented below, 9 interviews took place in Egypt, 8 in Morocco, and 5 in Tunisia. The identification and engagement of informants was undertaken by country rapporteurs in consultation with the project team.

| Country              | Egypt | Morocco | Tunisia |
|----------------------|-------|---------|---------|
| Number of interviews | 9     | 8       | 5       |

The stakeholders interviewed included government representatives, civil society organisations, migrant organisations, international development organisations, and academic experts working on climate change, environmental issues and mobility in the chosen countries. For clarity, stakeholders have been grouped into three broad categories: academia and civil society, public institutions and international organisations.

| Sector               | Academia and civil society | Public institutions | International Organisations |
|----------------------|----------------------------|---------------------|-----------------------------|
| Number of interviews | 10                         | 5                   | 7                           |

Stakeholders were selected primarily on the basis of their background and professional experience in covering the issues under investigation. The interview guide was crafted towards revealing characteristics and trends related to a) the public's awareness and perception of climate change; and b) climate change's relationship with migration and mobility, both internal and international.

As explained earlier, significant local realities keep driving perceptions and reactions to climate change, blurring the image at country level. That is why interviews also served to capture some sub-national characteristics, with a focus on regions known to have been most impacted by climate change and suffering from environmental stressors such as water scarcity that threatens the livelihood of different communities.

## 2.4 Challenges and mitigation strategy

Given the contexts selected, most stakeholders interviewed had expertise either on topics related to climate change or to migration. This is reflective of the structure of the policy landscape in the relevant countries, and more broadly the thematic organisation around these topics. Some stakeholders had limited expertise related to both topics simultaneously but the majority agreed that there is a need for more polyvalent multi-disciplinary approaches to exploring the question of migration across different national and regional contexts.

Recent weather and political events affect some of the participants' answers of perceptions and salience of climate change in the public discourse. In the context of Egypt, the hosting of the COP27 and the mediatisation surrounding the event is assumed to have played a role in discussing different campaigns and the general public awareness around climate change as driving mobility. In the context of Tunisia, the low rainfalls experienced during the months preceding the fieldwork<sup>4</sup> affected some of the respondents' impressions of climate change as a salient topic. However, these contextual factors remain limited across different interviews and in the majority of cases represent relevant examples of when climate change is seen as relevant to mobility.

<sup>4</sup> (Amara & Abidellaoui, 2023)

# 3. How is climate change affecting the region?

## 3.1 North Africa: A climate hotspot

Climate change is widely predicted to undermine the realisation of sustainable development goals (SDGs) for the region, causing deep socio-economic disruptions which are yet to fully come to light. Experts agree that climate change amplifies existing inequalities, in that it challenges countries' economic foundations and intensifies competition over resources, with lower-income segments and the most vulnerable bearing the brunt of disruptions<sup>5</sup>. It is often postulated that social and economic capital is a key driver in successfully adapting to climate change, underscoring the need to provide protection and assistance to the most afflicted communities, including via climate finance.

Specifically, the main challenges highlighted by climate experts relate to water scarcity, with the MENA region described as the "world's most water-stressed". The region is expected to be among the first in the world to "run out of water" with water resources being used faster than they are being replenished<sup>6</sup>. The Intergovernmental Panel on Climate Change (IPCC) reports a high likelihood of decreasing rainfall for all of North Africa in addition to an observed and projected increase in aridity and drought episodes from now until 2050<sup>7</sup>. Competition over water resources is also predicted to occur as a result of competing claims over water resources. More specifically, the Grand Ethiopian Renaissance Dam is described by the Egyptian Government as posing an existential threat to the Egyptian population.

Furthermore, specialists regularly point to the conflict dimension of climate change. Studies have demonstrated clear linkages between deteriorating weather conditions and communal confrontation, potential escalating into open conflict, sometimes with transnational implications. Acute food scarcity, as experienced in the Horn of Africa, can also be viewed through a climate lens, as crops deteriorate and fail due to inadequate water supply. In this light it is argued that climate, conflict and food security should be understood as mutually-reinforcing and cumulative, rather than separate, drivers of human mobility. Although less exposed to food insecurity, North Africa has traditionally been affected by conflict- and food-related displacement from its southern neighbourhood.

## 3.2 Sudden-onset versus slow-onset events

The relationship between the impact of climate change and migration decision-making is a complex one. The effects of climate change, alongside other drivers of mobility,

The Intergovernmental Panel on Climate Change (IPCC) reports a high likelihood of decreasing rainfall for all of North Africa in addition to an observed and projected increase in aridity and drought episodes from now until 2050

5 (Wehrey & Fawal, 2022)

6 (Rutger Willem Hofste, 2019)

7 (IPCC 2022)

including environmental factors, can be explored through two different streams. The direct link between climate change and displacement is often seen through the lens of sudden-onset disasters such as storms or flooding and result in immediate displacement of populations, which, depending on the severity of the event, ends up being a short-term movement over a short distance<sup>8</sup>. Another less obvious relationship between migration and climate change is in the context of longer-term and gradual climate changes, with some populations becoming more affected than others. Equally challenging is establishing a relationship between environmental drivers on populations that are not able to move, or the mobility patterns of those who have already experienced migration.<sup>9</sup>

Knowledge on how climate and environmental stressors influence migration outcomes is fragmented. The North Africa region is projected to host up to 19 million internal “climate migrants” by 2050 according to the World Bank, primarily as a result of slow-onset events<sup>10</sup>. The African Climate Mobility Initiative (ACMI) predicts 113 million migrants for the continent as a whole by 2050, out of which solely 1.2 million would be moving across borders<sup>11</sup>. Projections are notoriously difficult to make since they rely on climate scenarios which themselves are functions of fluctuating carbon emission levels. Specialists attribute difficulties to measure climate mobility to populations’ in-situ resilience and attachment, which seems to be an overlooked factor. State interventions are also decisive in curbing the worst effects of climate change and reducing pressures to migrate among affected populations.

In the three countries under consideration, the climate and mobility nexus is predominantly associated with freshwater access. Farmers and communities in rural areas are grappling with dwindling water sources. This may result from declining rainfall and depleted groundwater in the case of Morocco and Tunisia, or reduced river outflow in the case of Egypt. As a result all three countries are particularly exposed to rural exodus, a phenomenon that seems to be reinforced by the ongoing deterioration of farming conditions in rural areas<sup>12</sup>. Consistently with regional projections, these countries are experiencing high degrees of internal migration, with studies showing water scarcity contributes to accelerate urbanisation processes already underway. In addition, sea-level rise is perceived as an important for the region, in particular in Tunisia and Egypt. Land loss from rising waters in the Nile Delta for example is set to affect 50% of coastal areas by 2100. Although gradual, this extent of loss would bring about major shifts in populations<sup>13</sup>.

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### 3.3 The importance of narratives and perceptions around climate change

According to previous evidence assessments conducted looking at the relationship between climate change and migration, one of the pathways linking the two are narratives

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8 (Horwood, 2023)

9 (Lubkemann, 2008)

10 World Bank press release (2021)

11 (African Climate Mobility Initiative, 2023)

12 (McLean, 2022)

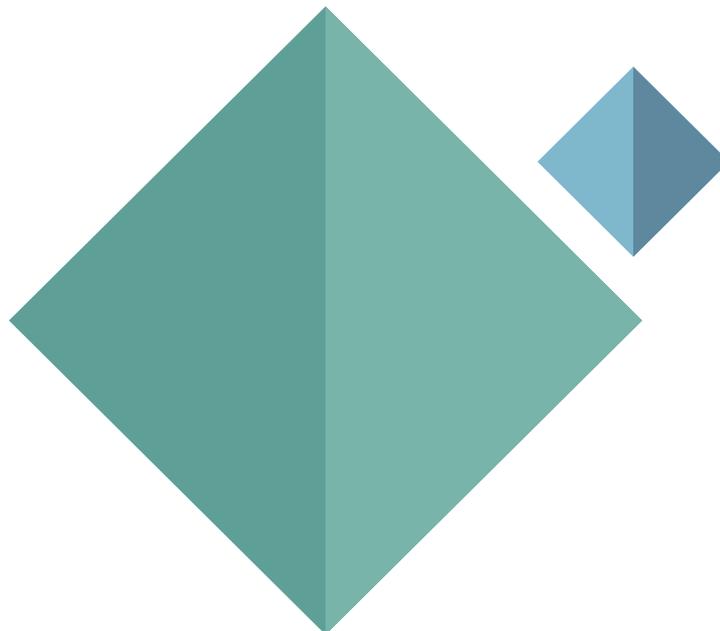
13 (Ministry of Planning and Economic Development and UNDP, 2021)

and perceptions<sup>14</sup>. Previous studies show that there is strong evidence that narratives and perceptions of climate change, weather shocks and local environments affect migration.

Studies carried out in various locations have helped bringing to light two major observations: The first one is that *awareness* (or knowledge) of negative climate developments is not a consistent predictor of migration intentions. The second one is that *perceptions* of a changing climate, often shaped as a result of first-hand experience or exposure, are much more likely to be recognised as playing a role in informing migration decisions. In this light, it is necessary to investigate the narratives of climate change and their influence on people's perceptions of the phenomenon to better capture if and how climate considerations underpin migration aspirations and decisions.

MENA populations tend to take climate change seriously. Results from surveys show that these issues resonate amongst policy-makers and the broader society alike. Since the three countries are characterised by sharp differences in living conditions, populations are not uniformly exposed to the effects of climate change. And amongst those exposed, some are more directly affected than others. This situation gives rise to a plurality of accounts of the issue, including disparate levels of perceived salience and threat as well as sharply different views on how it should be tackled. The report will aim to examine these views and how the impact of climate perceptions on migration applies in the context of Egypt, Morocco and Tunisia.

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<sup>14</sup> (Selby & Daoust, 2021)

# 4. Findings

## 4.1 Climate Change Awareness

The Afrobarometer<sup>15</sup> defines climate change-literate populations as individuals who 'have heard of climate change, understand it to have negative consequences and recognise it as being caused at least in part by human activity'<sup>16</sup>. The importance of climate literacy lies in its potential to provide informed responses to climate change<sup>17</sup>. Commonly, education level is the strongest predictor of climate change literacy.

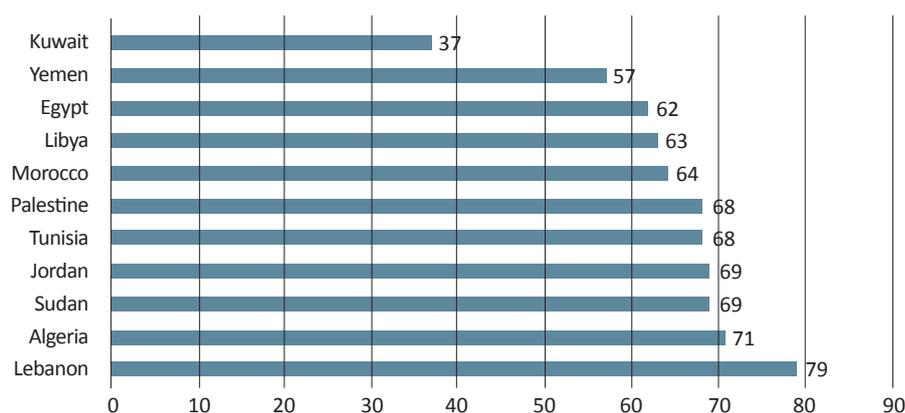
In Morocco, 29% are considered to be fully climate change literate. These rates are higher among those with post-secondary qualifications, as well as younger generations in contrast with older ones. Urban respondents were also reported as more climate literate and aware, and comparatively more men than women.<sup>18</sup> Climate literacy is considerably lower in Tunisia, amounting to only 15% of respondents<sup>19</sup>.

Interviewed stakeholders in all three countries suggest climate change is gaining traction as a subject of societal discussion, citing advocacy work from environmental organisations or corporate messaging through 'green' marketing campaigns as well as populations' exposure to global fora of discussion as explanations for this recent development.

To illustrate this, results from the 2019 Arab barometer survey indicate that 68% of Tunisians, 64% of Moroccans and 62% of Egyptians consider climate change to be a serious problem<sup>20</sup>. Furthermore, 40% of Moroccans and 52% of Egyptians expect their government to be doing more to address climate change.

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Figure 1 How serious a problem is climate change? % saying very or somewhat serious problem



<sup>15</sup>The Afrobarometer is a pan-African research network that implements nationally representative studies based on face-to-face surveys.

<sup>16</sup> (Selormey, Dome, Osse, & Logan, 2019)

<sup>17</sup> (The Conversation, 2021)

<sup>18</sup> (Abderebbi, 2020)

<sup>19</sup> (Edem E. Selomey, 2019)

<sup>20</sup> (Raz, 2020)

Despite these encouraging indicators, a crucial gap persists between populations' awareness of climate change and the ability to relate it to socio-economic hardships they so frequently experience. Survey data shows that, in the North African context, people's primary concerns relate to water and waste management rather than climate change per se.

Significantly, water access outweighs by far all other environmental concerns. 96% of Egyptians, 92% of Tunisians and 83% of Moroccans report being somehow or very concerned about water pollution. Across the MENA region, 70% of people consider water pollution a 'very serious problem' whereas only 35% report a matching level of concern vis-a-vis climate change<sup>21</sup>. Waste management/trash also appears to be a major source of public discontent, with 65% saying it is a very serious issue. Throughout results, awareness of climate change is positively correlated with education, with highly educated respondents consistently demonstrating comparatively higher levels of concern vis-a-vis environmental issues.

This speaks to a general misperception that climate change and hazards like water pollution and waste accumulation are not related. Despite abundant evidence on the climate change and water nexus for example, the predominant perception is that climate change is an abstract concept which rarely intersects with peoples' daily life. As a result, communities are less likely to ascribe a deterioration in living conditions, including in health, economic and social dimensions, to climatic factors, therefore greatly restricting the scope for meaningful action. The education differentials indicate investing in environmental education/advocacy is key in revealing these linkages and clarifying the pernicious effects of climate change to the broader public.

In the context of climate change, campaigns launched to different audiences still remain important in increasing overall awareness and literacy on these issues, both of which are drivers for climate adaptation efforts. Although North African governments have been developing information campaigns aimed at raising awareness around climate change, and water resources scarcity, many stakeholders highlighted that these campaigns miss important sections of the intended audience because of the channels used, language use and recommendations provided.

For example, in the context of a recent, government-led initiative advocating for environmental protection, a major city in the region hosted an information campaign devoted to the protection of its green spaces and parks, notably through the promotion of environmentally-conscious and civic individual behaviour. Notably, the campaign encouraged city dwellers to refrain from littering in public spaces and avail themselves of recycling opportunities for domestic waste.

Despite these virtuous intentions, stakeholders reported that this particular campaign fell short of its objective to bring a substantial change in individual behaviour, let alone raise awareness. Amongst reported obstacles, respondents felt the campaign was undermined by the limited exposure of the target audience to the main broadcasting channel employed. Crucially, citizens felt they didn't have the necessary resources to properly act on the campaign's recommendations: indeed, the city's garbage disposal infrastructure was deemed insufficient for the campaign's recommendations to be properly enacted.

Across the MENA region, 70% of people consider water pollution a 'very serious problem' whereas only 35% report a matching level of concern vis-a-vis climate change... The predominant perception is that climate change is an abstract concept which rarely intersects with peoples' daily life.

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<sup>21</sup> (Green, 2019)

Similarly, the campaigns' focus on energy conservation, the use of eco-products and other household appliances was not attuned to lower-income households' concerns or consumption patterns. Finally, the campaign was described by stakeholders as putting excessive emphasis on individual decisions and actions while overlooking the systemic responsibility of environmental degradation in the region.

Another important insight in connection with the way climate change is discussed in the public discourse, particularly in Egypt, is climate change's perceived low salience compared to the adverse situation experienced by marginalised populations, including scarce employment opportunities and labour rights. One stakeholder mentioned that, over the past few years, the topic of climate change became heavily leveraged and politicised in public discourses resulting in a feeling of oversaturation.

In Morocco, the reach of the information campaigns aimed at raising awareness around climate change was described by one stakeholder as limited. This is mainly due to the reliance on official media channels, which do not have a broad viewership. Another stakeholder highlighted that campaigns in Morocco are usually calibrated to children or government officials, thereby risking to leave aside mid-age audiences and key groups like scientists. Promisingly though, the coverage of the topic in public discourse has increased over the past few years as a result of social movements and an increasing number of civil society organisations active in the field.

The initiative 'A l'école du climat' provides a sound example of fruitful civil society engagement. The initiative was conducted in the Agadir region, an agricultural region which is particularly vulnerable to droughts, desertification, sudden rainfall and other acute climate pressures. Implemented by the Moroccan association for the teaching of biology (AESVT) in cooperation with the GIZ, the action primarily aimed to sensitise pupils in the region on the area's environmental challenges, stressing their social and economic implications for communities in the area. The action focused on the promotion of climate education and awareness, in particular amongst the youth, by delivering information and sensitisation campaigns as well as trainings in schools and among education professionals in public administration and associations. As a result of the action, 4400 teachers and educators, 33500 pupils and 68 associations have been exposed to advocacy and training activities. Beyond these important numbers, "A l'école du climat" marks an important step towards institutionalising climate education and awareness in the Moroccan school curriculum<sup>22</sup>.

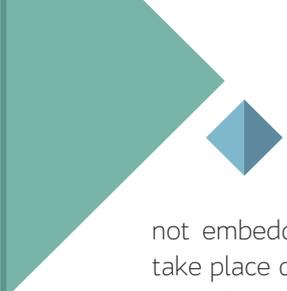
In addition to public awareness campaigns, there have been targeted efforts aimed at primary schools as well as secondary high schools through awareness raising activities and outreach. Additionally, higher education institutions are increasingly offering tailored academic programmes in the area of sustainable development, environmental preservation or, as in the case of Morocco, renewable energies. In Tunisia, one stakeholder highlighted similar efforts in high schools around the creation of youth clubs dedicated to climate change awareness and activities.

In both Morocco and Tunisia, specific calendar days are used as opportunities to raise awareness around climate change, although these are typically on a short-term basis, and

**In addition to public awareness campaigns, there have been targeted efforts aimed at primary schools as well as secondary high schools through awareness raising activities and outreach.**

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<sup>22</sup> (Climate Chance)



not embedded in behavioural change campaigns. Awareness-raising campaigns usually take place during Earth days, Tree days, or other important political events in each of the countries. In Morocco, there are instances of collaboration between different stakeholders from CSOs and government institutions to organise awareness-raising initiatives.

## 4.2 Perceptions of Climate Change

A range of factors are reported to influence perceptions of climate change impacts. In North Africa, perceptions are often influenced by the degree to which livelihood are exposed to, and dependent on temperature variations and rainfall. As described earlier, the region suffers from chronic water scarcity, a situation which has long crippled small-scale farming and deepened economic marginalisation in rural areas. The adverse impact of soil aridity, and environmental deterioration in general, has been shown to have a direct impact on farmers' income and well-being<sup>23</sup>. Communities involved in farming or herding are therefore more likely to feel changes in precipitation and the associated rarefaction of resources since their income depends on it.

In contrast, due to a lesser immediate dependence on natural resources, urban dwellers are less likely to experience economic loss from climate change or to report being impacted by climate change. For this reason, perceptions of climate impact tend to be strongly predicated on considerations related to livelihood (agriculture vs non-agriculture), and residence (urban vs rural).

Perceptions of climate change impacts may also be influenced by access to irrigation and other water-saving technologies which may bring relief to afflicted areas and help mitigate the intensity of drought episodes<sup>24</sup>. In this sense, individual and collective resilience strategies as well as the construction of water infrastructure, including dams and wells, is key to keep crops and livestock out of harm's way. State responses, either through early-warning system or provision of ex-post assistance (equipment or funds) have also been highlighted by stakeholders as making a big difference in the way people cope with the climate crisis in rural areas.

Across the countries surveyed, perceptions levels have been reported to be correlated with individual- or household-level socio-demographic characteristics. In Morocco, stakeholders mentioned that women are particularly aware of climate change and its consequences because of the role they have in the household. Particularly in rural areas and in oasis, since women are tasked with collecting water and taking care of farm animals and working the land, their proximity to these different elements makes them more likely to notice changes related to climate change. This opinion was echoed by stakeholders in Tunisia who mentioned that many rural women might not have the vocabulary to translate their observations into climate change effects but they are nonetheless witnesses to these shifts.

In Morocco, stakeholders mentioned that women are particularly aware of climate change and its consequences because of the role they have in the household. .

Similar comparisons were drawn between younger and older generations. In Egypt, younger educated people were described as more climate change literate, meaning they have an

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<sup>23</sup> (Wodon, 2014)

<sup>24</sup> (Parsons & Chann, 2019)

understanding of the ways in which human activity impacts climate change. In contrast, older generations, particularly the less educated ones would draw on personal experiences of climate and weather events to relate to climate change and their consequences on their livelihoods. These findings are in line with results from the Afrobarometer highlighting that educational levels are strongly correlated with climate change literacy.

Across all countries researched, stakeholders highlighted that the contrast in the direct awareness of climate change is more stark between rural and urban communities, highlighting the delayed effect in experiencing water shortages in cities, as opposed to rural dwellings. These considerations are useful to frame climate change perceptions in the region: although water scarcity is a predicament cutting across social and geographic categories, it is existential only for people exposed to its most blatant and direct manifestations, in particular farmers and herders, women and young people. For these reasons, these particular segments in the three countries are more likely to perceive growing social and economic adversity arising climate stress and to attribute it accordingly.

Across all countries researched, stakeholders highlighted that the contrast in the direct awareness of climate change is more stark between rural and urban communities, highlighting the delayed effect in experiencing water shortages in cities, as opposed to rural dwellings.

## 4.3 Bridging climate perceptions and mobility intentions

Stakeholders interviewed in the framework of the study predominantly ascribe migration in the region to socio-economic factors. In line with conventional knowledge on the issue, migration aspirations mainly arise from a perceived lack of economic opportunities in places of origin, with governance issues and/or absence of education facilities also being reported as common motivations to migrate. Livelihood-related drivers are found to apply consistently regardless of the journey's dimension (internal or international mobility) and of the particular migrant group considered (inward or outward migrants). For example, Sub Saharan migrants in Morocco are considered to have been driven by an expectation to increase job and income prospects compared to home opportunities. Significantly, over half of Moroccans abroad (53.7%) report having migrated to find better job opportunities or to improve living conditions. Education comes second (25%) as a reported motivation for migration among polled expatriates<sup>25</sup>.

Typically, stakeholders in the three countries report difficulties to discern clear climate-driven mobility in the region. This is assumed to be due to the fact that climate change gradually permeates environmental structures, driving a holistic deterioration in life standards and/or exacerbating pre-existing socio-economic predicaments. Affected populations don't always seem to associate this deterioration with climate change though, instead focusing, and assigning blame, on its most tangible and overt manifestations. An Egyptian stakeholder explains that farmers in Egypt's Delta region, being confronted to pest proliferation (an outcome of rising temperatures) have doubled down on pesticide use, driving down land fertility though the pollution of groundwater. The resulting income loss and impact on subsequent decisions is rarely attributed to climate change and its complex ramifications.

Affected populations don't always seem to associate this deterioration with climate change though, instead focusing, and assigning blame, on its most tangible and overt manifestations.

Likewise, aspiring or current migrants do not systematically relate their migration projects to a change in the climate. This echoes findings from various surveys administered

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<sup>25</sup> (Haut-Commissariat au Plan, 2020)

on the subject in areas affected by sow-onset weather events: Rather than ascribing mobility to environmental factors, surveyed individuals are more prone to self-report the deterioration of economic conditions as the main factor informing their decision-making process. Stakeholders argue that these inconclusive results do not attest climatic drivers of migration are overestimated. Rather, it points to a difficulty for surveyed populations to contextualise and translate in scientific or social terms the degradation of their immediate environment. One stakeholder recommends phrasing research questions which better match populations' descriptions of events while avoiding technical or policy jargon.

Nonetheless, even if robust data are lacking, public perception that climate conditions play a decisive role in mobility aspirations and decisions is gaining ground. Quite often, this is fuelled by high-profile reports of rural area droughts, which bring agricultural issues and the climate sensitivity of rural existence back to the fore of public debate. Stakeholders have for example highlighted the failure of the mango crop in 2021 in Ismailia, Egypt, as having a direct impact on locals' decision-making processes. Most young farmers have reportedly resettled to the country's urban areas to attempt compensating the heavy losses incurred, demonstrating the practical mobility implications of unpredicted climate hazards.

Historically, people's mobility in the region is deeply intertwined with structural as well as sudden natural variations in their environment. Today, patterns of climate-related mobility are characterised, and shaped, by their integration into contemporary processes of economic and political concentration. Evidence from the region, as well as the outcomes from stakeholder interviews, show that climate factors account for a substantial share of internal movement observed in the countries, despite the lack of comparative datasets. Some studies have for example estimated that climatic conditions might account for up to 20% of Morocco's internal flows<sup>26</sup>.

Testimonies of rural-to-urban movement, and astonishing urbanisation rates, notably for major cities like Cairo or Casablanca, speak to growing difficulties to make ends meet in the countryside, as well as the persisting attractive power of modern urban centres and their promises of employment, education and prosperity. Stakeholders report that newly-settled urbans are disproportionately composed of rural dwellers who have left due to environmental pressures and whose decision to move to cities was informed by their expectation to work in the non-agricultural sector. One stakeholder underlines for example that peasants from the Marsa Matrouh area, in northern Egypt, have recently relocated to Cairo or Giza in the expectation to work in services or other menial professions, after high temperatures and droughts ruined their fodder crops.

Responses in the three countries speak to the particular vulnerability of rural areas to climate stressors and their particular pertinence when discussing mobility in the context of climate change. Unlike cities, rural places offer little perspective for meaningful off-farm employment or education opportunities. In addition, these spaces are usually structurally marginalised, secluded from economic and investment flows and often neglected in development planning. For farmers confronted to land degradation, migration is often perceived as one of very few alternatives to maintain a source of income. In this light, and disaster displacement aside, climate mobility as a modern phenomenon is intrinsically linked to agriculture and the well-being of the communities that rely on the land economy.



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26 (Wodon, 2014)

In relation to this, one Moroccan respondent points out that, in the Zagora province, 60% of young people have left in recent years as a result of the overexploitation and pollution of water resources and its impact on the traditional agrarian economy of the area. Similar considerations in the neighbouring province of Souss Massa have prompted many within rural communities to give up farming or livestock raising and to search for more remunerative occupations in places like Agadir or Casablanca. The implications of these processes, including for those left-behind, are explored in the next section.

## 4.4 Climate Change and Immobility

Recent literature on climate mobility has drawn attention to ‘immobile’ populations, a segment of climate- or disaster-afflicted communities whose mobility is obstructed due to financial constraints. Immobile populations are left to cope with the full extent of damage caused by climate impacts with little help from the outside. Findings therefore advocate for a prioritisation of these people’s needs in the context of climate assistance efforts and humanitarian relief<sup>27</sup>.

In North Africa, perceptions of climate disruptions in places of origin, but also of socio-economic conditions and opportunities in potential destination areas, are key to understand what these barriers may consist in and which limitations and constraints characterise migration decisions. The following describes in a non-exhaustive way the most prominently-perceived barriers in the context of the three surveyed countries.

### Formal factors of immobility

Obstacles to people’s mobility in the context of climate change are manifold. Respondents have reported a series of economic factors and social factors that objectively contribute to constrain mobility plans and influence decision-making mechanisms. In the Mediterranean region, legal restrictions on people’s international movements represent a major hindrance to climate mobility. Perceptions of existing legal migration channels, and how they are scarcely available for low-skilled migrants from rural background, partly explain why climate mobility, when it happens, occurs first and foremost within national boundaries. More generally, the amount of social and financial resources required to undertake international journeys, and the risks often associated with them, explains why cross-border flows are projected to account for only a fragment of global climate-related movement.

In the Mediterranean region, legal restrictions on people’s international movements represent a major hindrance to climate mobility.

Economic factors refer to the lack of financial means necessary to support population movement to other rural regions or urban centres. In Morocco, respondents highlighted language barriers and skills mismatches as hurdles hampering migration from rural to urban areas. Social exclusion and xenophobia were also mentioned as factors that could affect decisions to migrate. In Tunisia, discrimination against rural citizens is believed to affect integration and inclusion goals in cities. Particularly among more conservative and traditional communities, urban centres may seem as not receptive and accommodating to these communities’ aspirations. Respondents underline the lack of social support available in destination areas as a commonly perceived challenge and potential deterrent for aspiring migrants.

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<sup>27</sup> (Mixed Migration Centre . 2022)

Women are particularly exposed to barriers to internal as well as international mobility. Concretely, it is very common for rural women to have to require the household's head to authorise mobility projects, even if short-distance. Gender discrimination and gender-based violence is also a factor in destination areas. Most studies on internal mobility reveal that men are usually the first ones to migrate, followed later on by their families, provided the initial relocation has borne fruit<sup>28</sup>.

Respondents point to the exploitative nature of work in major cities as a critical deterrent to migration aspirations. Rural dwellers in cities are often confined to the informal labour market as they lack the skills and peer networks to access formal employment. On this account, it is reported that rural emigrants are particularly vulnerable in light of the informal sector's abusive working conditions and the low remuneration levels generally applied. In addition, respondents have noted that rural emigrants have to contend with insalubrious and crowded housing due to their lack of resources.

Rural dwellers in cities are often confined to the informal labour market as they lack the skills and peer networks to access formal employment.

### Informal factors of immobility

One of the arguments put forward in relation to mobility barriers is the attachment of different communities, particularly rural communities, to their lands. According to previous research, this narrative is abundant in the case of farm-dependent communities. Attachment to land, in its emotional and affective dimensions, is an overlooked yet critical factor informing people's decisions to move.

According to respondents, migration decisions in rural areas are consistently balanced with considerations relating to connections to place, culture and communities. Very often, ancestry or trans-generational bonds explain why farmers may be reluctant to give up their lands, despite signals of decreasing commercial value and/or inevitable climate risks. In rural societies worldwide, land is deeply associated with farmers' norms and sense of identity.

According to respondents, migration decisions in rural areas are consistently balanced with considerations relating to connections to place, culture and communities.

In Morocco and Tunisia, respondents highlighted that many of those living in rural communities might opt out of migrating abroad or to urban areas to avoid leaving their "ancestral" homes. In Morocco, in addition to emotional ties to land, stakeholders interviewed mentioned young people's attachment to their parents, and particularly to the elderly, and the social norms around caring for the elderly as a duty. In Egypt, stakeholders interviewed mentioned that migration would imply the loss of social capital and support networks, an important resource for those already in situations of precarity and that decisions to migrate are therefore delayed or reconsidered, even in a context of threatened livelihood due to climate change.

In relation to this, respondents also shared that agricultural communities might seek to hold on to their ownership titles on land despite having migrated to cities and without drawing returns from it. Significantly, land attachment and related considerations contribute to question the assumed linearity of climate mobility, and challenge the idea that moving out is inevitable in the midst of climate pressure. This type of attachment might play a moderating influence on migration projects, nudging people to stay as close as possible from their origin areas and muting desires to migrate internationally.

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28 (McLean, 2022)



## Vulnerabilities arising from immobility

Stakeholders agree that policy-makers need to focus on the needs of the most vulnerable populations when tackling climate change and its possible mobility implications. The fate of “trapped” population is particularly concerning given their limited visibility in national and international climate change narratives. Shedding light on these groups and their particular vulnerabilities is essential to building just climate responses.

With regard to vulnerabilities, it has been observed that youth, women and small-scale agrarian communities as a whole are disproportionately bearing the burden of climate change and are more inclined to consider migration as a solution. Income represents a further predictor of climate sensitivity with low-income households far less likely to adapt to climate change. Being at the intersection of these groups naturally multiplies exposure and resulting vulnerability.

Stakeholders agree that immobility represents a serious risk in the region, particularly as the effects of climate change intensify and become more tangible. The three countries surveyed are still host to about 80 million rural people, including 62 million in Egypt alone<sup>29</sup>. The youth accounts for a substantial share of these populations as birth rates in rural families exceed national averages. Many of these communities have very little means to cope with the effects of climate change and cannot afford better irrigation, technology and/or fertilisers that would maintain farming yields. As one stakeholder summarises: “if you cannot afford to improve your living conditions, you cannot afford to migrate”.

In light of the factors tackled in this section, the capacity and readiness of vulnerable people to move, even internally, is subject to various and sometimes conflicting considerations. Importantly, the existence of formal and informal barriers to mobility in the context of climate change suggest the relationship between climate and mobility is much more nuanced than generally reported.

With regard to vulnerabilities, it has been observed that youth, women and small-scale agrarian communities as a whole are disproportionately bearing the burden of climate change

## 4.5 Reflections on adaptation efforts and future migration trends

As discussed under various international fora, the effectiveness of adaptation measures is instrumental in reducing climate risks and protecting populations<sup>30</sup>. The insights collected in the framework of the study help to outline key avenues relating to adaptation strategies in the North Africa region. Adaptation is widely considered a priority to achieve SDGs in the region but also to mitigate the scope of both internal and international movement resulting from climate impacts.

In terms of adaptation efforts, experts mentioned that agricultural strategies need to be more coherently aligned on climate goals for example by promoting existing initiatives aimed at adapting to climate change. In Morocco, one stakeholder emphasised the need for limiting water-intensive cultivations, such as watermelon, particularly in regions where water is becoming increasingly scarce. The expansion of the solar energy industry in

Adaptation is widely considered a priority to achieve SDGs in the region but also to mitigate the scope of both internal and international movement resulting from climate impacts.

<sup>29</sup> (World Bank Data, 2021)

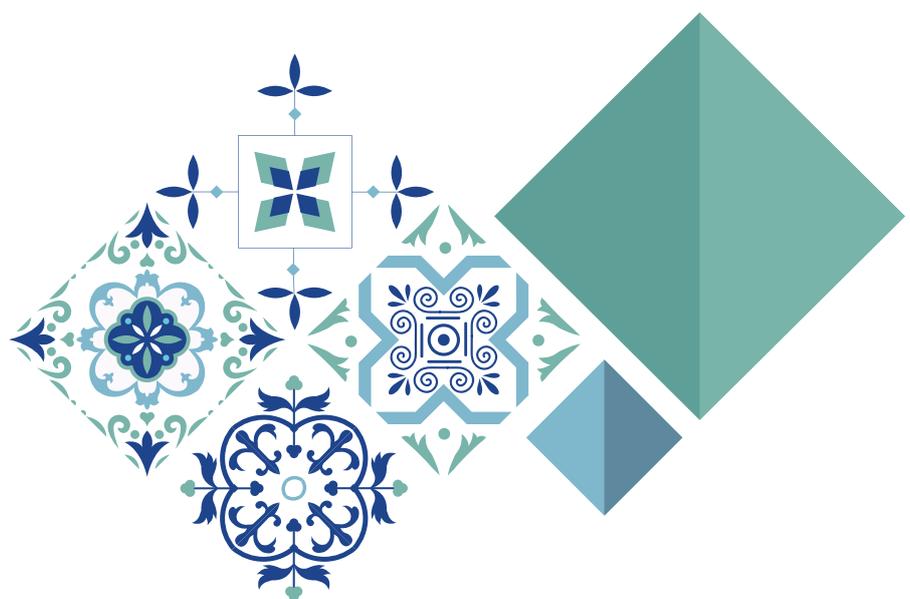
<sup>30</sup> (Intergovernmental Panel on Climate Change , 2023)

Morocco was also highlighted as an important adaptation measure that will help the country in its transition to a greener economy. More broadly, in Tunisia, as in Morocco, stakeholders underlined the need to ration the use of water in agriculture, and promote for sustainable irrigation methods.

Across contexts, stakeholders affirm the utmost importance to build adaptation strategies on locally-led solutions. For this to happen, experts advocate empowering farmers, fishermen and other professional groups and their communities through consultations and inclusive, participatory-based processes of public decision. In line with observations made globally, they believe that institutions need to better integrate communities in order to achieve solutions best tailored to the contexts.

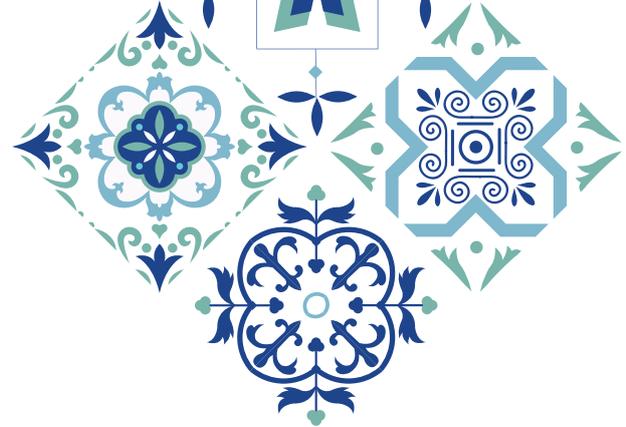
On future migration trends, some stakeholders highlighted the interconnectedness of mobility in the context of climate change. In Egypt, one stakeholder underlined two main migration trends affecting the country. Internally, urbanisation is increasing pressure on cities' infrastructure which in turn also affect the availability of arable land. The unplanned expansion of cities at the expense of agricultural areas is feeding into increased rural-urban migration, with more rural communities migrating to cities to seek better economic opportunities. Internationally, Egypt is an important country of origin of potential migrants (whose motivations, in addition to economic drivers, could be more closely linked to climate factors). The country is also on the receiving end of migration flows from the Horn of Africa, a region that is more acutely affected by climate change, and food insecurity. These two dynamics were predicted to increase over the course of the next few years, with the worsening of weather conditions affecting people's livelihoods<sup>31</sup>.

In Tunisia, stakeholders interviewed were cautious of linking climate change to future migration flows. However, one stakeholder underlined that in the past year, with the decreased rainfalls and the consecutive failed harvest seasons in rural areas, increased migration from rural to urban areas or further afield is likely, based on historical rural exodus patterns. This mobility happens against the backdrop of economic challenges the country is already facing and the reluctance of the younger generation to engage in agriculture.



31 (World Food Programme and Overseas Development Institute, 2015)

# 5. Conclusions and Recommendations



The examination of climate-related perceptions in Egypt, Morocco and Tunisia shows that climate mobility evades simplistic and categorical assessments. On this account, policy-makers in the region are recommended to keep refining their understanding of climate impacts, in particular with regards to vulnerable groups, and to build climate-sensitive strategies for an inclusive and sustainable development. In light of the study's findings, equally important is to assess people's perception of climate impacts, how they tend to affect people's livelihoods and how they are ultimately reflected in people's aspirations for the future.

The findings are summarised as follows:

- The MENA region is highly exposed to the adverse impacts of climate change. Particularly, water stress is set to be aggravated by declining rainfall, temperatures' increase and pollution of basins and waterways. For this reason, out-migration for climate reasons is widely assumed to intensify;
- Previous research indicates that awareness and perception of risks usually informs mobility-related decision processes. This includes risks both related to staying as well as to moving;
- Cross-stakeholder advocacy efforts on climate mitigation and adaptation are bearing fruit: Indicators of climate change awareness and understanding of livelihood impacts is on the rise throughout the region and across demographics;
- Nonetheless key challenges related to awareness and perceptions remain: in all three countries, environmental issues and climate change are considered in isolation. This misperception affects countries' capacity and readiness to tackle the root causes of environmental stress;
- Awareness-raising institutional campaigns on climate are frequently undermined by inadequate targeting and communication channels, as well as unfocused messaging. This contributes to blur the interdependence between climate mitigation efforts and quality of life;
- Although people don't promptly report climate as a motive for migration, it doesn't signal climatic conditions are overstated in public discourse. Rather it points to a lack of contextualisation efforts between economic problems and environmental drivers underpinning them;
- In the context of climate change, people from rural areas are the most prone to be aspiring to move or to have moved following slow-onset weather events. This is because rural livelihoods are much more sensitive to weather changes than urban ones;
- Barriers to out-migration play a decisive role in shaping perceptions and decision-making related to migration. These barriers are either formal or informal and vary according to the place, status and group considered;
- Women are simultaneously more exposed to, and more perceptive of the impacts of climate change. Nonetheless they face higher barriers to mobility than men, hampering their capacity and prospects to adapt to climate change;
- People in climate-affected areas display strong attachment to land, communities and local identity. Attachment is therefore set to play a moderating influence on migration intentions despite profound socio-economic disruptions in rural areas.

Policy-makers and partner organisations, including advocacy and communication stakeholders are advised to promote a conducive society-level exchange on the risks and impacts arising from climate change in the countries surveyed. In particular, efforts should focus on exposing climate change's ramifications and its responsibility in increasing populations' exposition to air and water pollution, waterborne disease and related conditions, food shortages, inflation and issues of waste management. To this end, the study recommends the following:

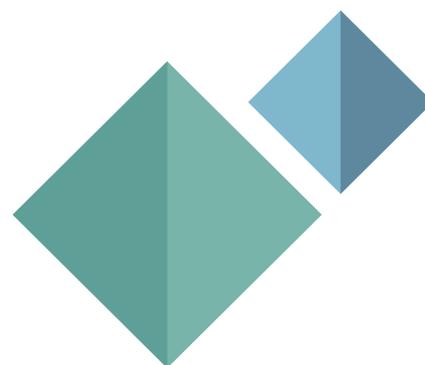
- Integrate the audience's key concerns and social realities in the conception of awareness-raising campaigns with a focus on marginalised and low-income groups;
- Reflect the target group's language, cultural values as well as preferred channels of engagement in the conception of these campaigns;
- Aim to link behavioural, consumer-oriented campaigns to day-to-day manifestations of climate change like access to water, health and disease, air quality, food shortages, etc. This will benefit the impact of the campaigns by providing solid, life-embedded rationale;
- Develop a set of key indicators measuring populations' awareness of climate change, including their propensity to identify the phenomenon as driving issues of water scarcity, etc.

When investigating climate mobility, policy-makers and partner organisations, including research entities, are advised to strengthen their approach towards polling populations in risk areas, notably to better expose linkages between climate, livelihoods and mobility. This includes the following:

- Closely tailor survey questions to the sample's geographical and environmental specificities and allow space for nuances in the answers given;
- Interrogate in priority perceived climate impacts and their incidence in terms of household income and livelihood rather than through a mobility/migration lens;
- Dedicate space to collect populations' perceptions of obstacles (or barriers) to mobility in the context of climate change;
- Disaggregate survey administration and analysis according to relevant parameters such as gender, age and area of residence.

More generally, policy-makers and their partners in the area of migration, are invited to consider the following:

- Invest in measuring internal mobility flows' composition and characteristics. Dedicated modules could for example be systematically incorporated in national household surveys or in future series of the HIMS<sup>32</sup> initiative;
- Sensitise line ministries and administrations responsible for infrastructure, agriculture, rural development and social cohesion on the migration and mobility implications of climate change, in particular with regards to rural areas and vulnerable groups;
- Build comprehensive resilience strategies for areas and demographics most affected by climate change, including by implementing tailor-made and locally-led adaptation strategies.




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<sup>32</sup> Household and International Migration Survey. <https://ec.europa.eu/eurostat/web/european-neighbourhood-policy/enp-south/med-hims>.

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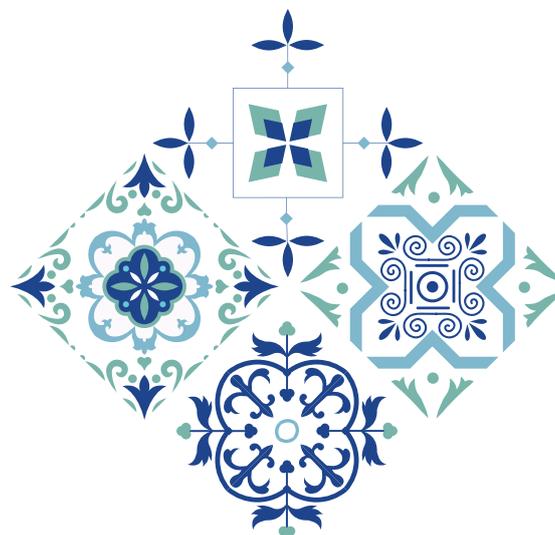
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