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UN MIGRATION

AFTERSHOCK

An assessment of how climate change is influencing migration and vulnerability in Libya

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Cover picture: Following five consecutive below-average rains, millions of people across the East and Horn of Africa region have been displaced because of the drought compounded by the impact of conflict and insecurity. Photo credits: Tobin Jones/UN (1), Abir Abdullah/IOM (2), Rashad Mammadov/ Shutterstock (3).

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KEY FINDINGS

(based on 3,418 individual interviews with migrants conducted by DTM in Libya in September and October 2023)

CLIMATE CHANGE IS A THREAT MULTIPLIER

Findings of this study confirm that climate change acts as a threat multiplier, further exacerbating the vulnerabilities of migrants in both their countries of origin (pre-migration) and in Libya, particularly among those in precarious situations (e.g. fleeing conflict or war).

25%

of migrants interviewed in Libya had experienced at least one climatic shock or stressor in the year prior to migrating to Libya, and 56 per cent estimated that this shock had had a severe impact on their wellbeing, for example on their food consumption and income levels.

LIVELIHOODS

Overall, two in five migrants (40%) reported having suffered from a lack of income-generating opportunities owing to climate-related shock(s) in their country of origin prior to migrating to Libya.

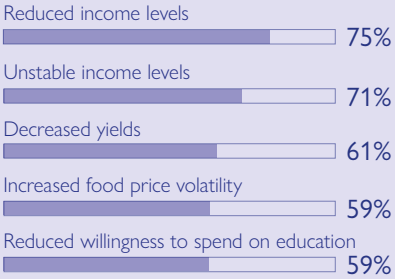
MULTIPLICITY OF SHOCKS

Over half of migrants (59%) had experienced ten or more shocks in the year prior to migrating to Libya, which include environmental, economic, idiosyncratic (e.g. death or illness in the family), or health- or conflict-related events.

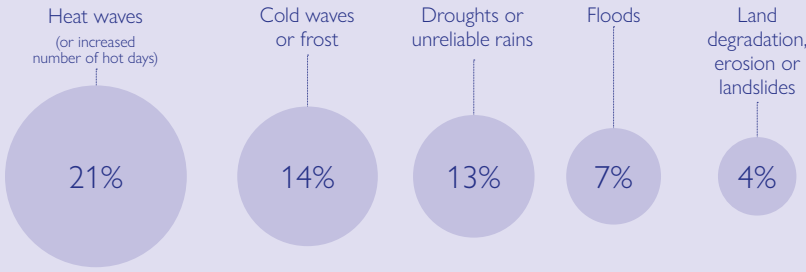
INCREASED VULNERABILITY

Migrants who had endured a climatic shock in the year prior to migrating to Libya had a higher level of debt and fared worse in Libya; more of them faced financial difficulties, safety issues, food insecurity, a lack of clean drinking water and had limited or no access to healthcare.

TOP 5 IMPACTS OF CLIMATIC SHOCKS



THE MAIN ENVIRONMENTAL SHOCKS MIGRANTS ARE FACING IN THEIR COUNTRY OF ORIGIN



11%

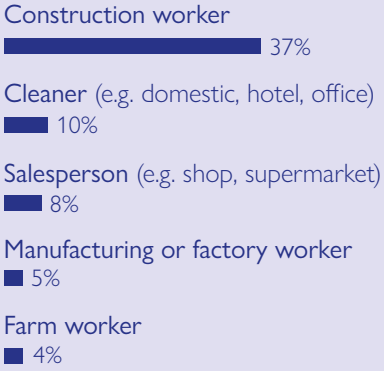
of migrants interviewed by DTM in Libya reported having experienced at least one climatic shock in combination with at least one political or conflict-related shock such as armed clashes, displacement, theft or destruction of assets.

MIGRANT DEMOGRAPHICS IN LIBYA

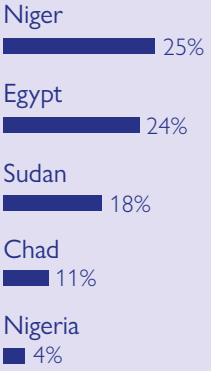
704,369

migrants were identified by DTM Libya in May and June 2023 in the 100 Libyan municipalities. Around eight in ten (79%) were adult males, 11 per cent were adult females, and 10 per cent were children (among whom 4% were unaccompanied).

TOP 5 MIGRANT JOBS IN LIBYA



TOP 5 MIGRANT NATIONALITIES



CLIMATE CHANGE AS A DRIVER OF VULNERABILITY AND MOBILITY

The relationship between climate change and human mobility is complex[1]. People migrate for a range of reasons including economic and social incentives, conflict and political instability, the wish to reunite with one's family or the search for a better education. Because climate change triggers and intensifies a range of slow- and sudden-onset events that can have an adverse effect on communities and exacerbate pre-existing vulnerabilities, such as poverty and unemployment, climatic conditions are but one factor[2] driving human mobility. As such, individuals may not always link[3] directly their own migration aspirations and trajectories with ongoing environmental changes. For example, between two and four per cent of migrants from Mali, Niger, Sudan and Chad mentioned that sudden- or slow-onset environmental events were the most, second-most or third-most important driver behind their migration to Libya (Fig 1). At the same time, between 22 and 36 per cent mentioned having experienced at least one climatic shock or stressor[4] in the year prior to their migration to Libya[5]. Overall, a quarter of migrants (25%) interviewed by DTM Libya in September and October 2023 stated having lived through at least one climatic shock in the year prior to migrating to Libya. The most commonly cited shocks were heat waves (or an increased number of hot days) (21%), cold waves or frost (14%) and droughts (13%) (Fig 2).

Although environmental shocks had a severe or catastrophic impact for 31 per cent or more of migrants, it is the economic, political and idiosyncratic shocks — all of which can be directly or indirectly related to climate change — that were identified as having had the most acute impact by the largest proportion of migrants (56% or more) (Fig 2).

Figure 1: Share of migrants who reported that sudden- or slow-onset climate-related events was one of the three main drivers of their migration compared with the share of migrants who mentioned having experienced at least one climatic shock in the year prior to migrating

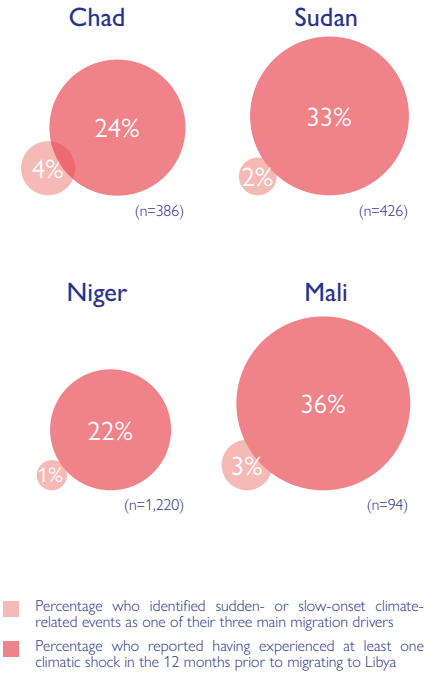
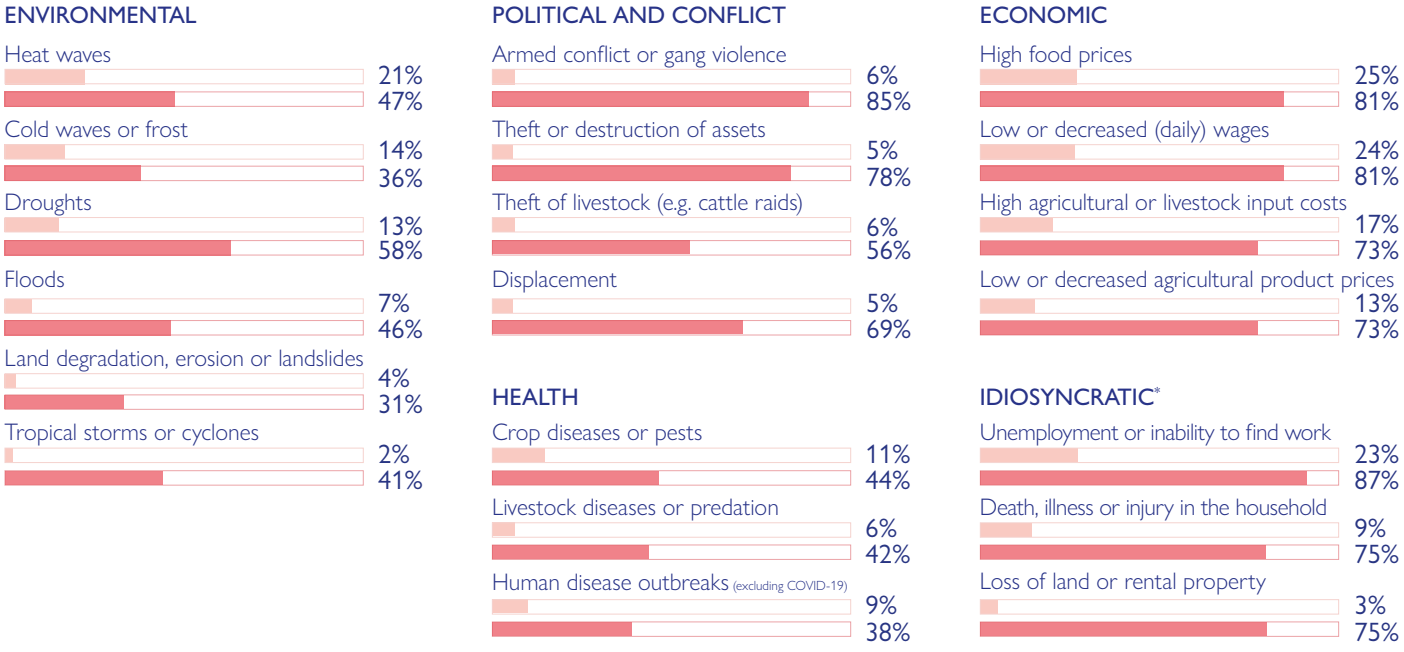


Figure 2: Types of shocks that migrants experienced in the 12 months prior to migrating to Libya and percentage who perceived these shocks as having had a severe or catastrophic impact on their households' food consumption and income levels



1 IOM (2022). People on the Move in a Changing Climate - Linking Policy, Evidence and Action. Available at https://publications.iom.int/books/people-move-changing-climate-linking-policy-evidence-and-action (accessed November 2023).
2 IOM (2023). Climate Change and Human Mobility: Quantitative Evidence on Global Historical Trends and Future Projections. Available at https://www.migrationdataportal.org/sites/g/files/tmzbdl251/files/2023-06/Final5_2023%20Climate%20Change%20and%20Human%20Mobility.pdf (accessed November 2023).
3 Van Praag, L., Lietaer, S. & Michellier, C. (2022). A Qualitative Study on How Perceptions of Environmental Changes are Linked to Migration in Morocco, Senegal, and DR Congo. Hum Ecol 50, 347–361. Available at https://link.springer.com/article/10.1007/s10745-021-00278-1 (accessed November 2023).

4 For the purpose of this report and to avoid repetition, the term "shock" is used in place of "shock and stressors" and should be understood as encompassing both short-term and long-term changes or abnormal events that may have impacted migrants' wellbeing, such as droughts, unemployment armed conflict or illness.
5 For the purpose of this report, and to ease reading any reference to migrants' experience of a climatic shock should be understood as having occured in the year prior to their migration to Libya.

* Idiosyncratic shocks refer to shocks that principally affect only individual households.

Impact of climatic shocks on livelihoods

One reason for the difficulty of linking climate change to migration is that climatic hazards and environmental factors can be closely related[6] to economic drivers, such as reduced crop yields or insufficient income from agriculture.

The data suggests that climate-related events are indirect migration drivers[7] through their negative impact on local economies and workers, particularly those reliant on agriculture. For example, nearly twice as many migrants whose primary source of income in their country of origin was agriculture reported having experienced a climatic shock prior to coming to Libya (35%) compared to those whose livelihoods were not related to agriculture (17%). Among migrants whose primary source of income was agriculture, a greater proportion of those who had endured a climatic shock reported that insufficient income or a lack of job opportunities in their country of origin was a primary push factor (58%) compared to those who had not lived through at least one climatic shock (49%) (Fig 3).

These findings are in line with an extensive IOM review[8] of econometric analyses on climate mobility, which highlighted that climatic shocks tend to increase internal and cross-border mobility in agriculture-dependent regions because of decreased agricultural wages. The data is also aligned with a recent IOM study[9] on Niger, which highlighted that issues around livelihoods (e.g. lack of natural resources to develop subsistence activities, more frequent droughts) were a primary driver of migration (internal or international) in all regions surveyed, highlighting the role of climate change as a risk multiplier[10], exacerbating pre-existing vulnerabilities.

The data also shows that migrants who come from communities having experienced climatic shock(s) but who were not engaged in agricultural livelihoods were driven to migrate to Libya because of a lack of job opportunities or the search for job opportunities to a greater extent than others (Fig 2). This is likely related to the fact that beyond its impact on agriculture, climatic shocks tend to reduce local economic opportunities, particularly in countries that are highly dependent on natural resources[11] and have a low capacity to cope with the adverse impact of climate change.

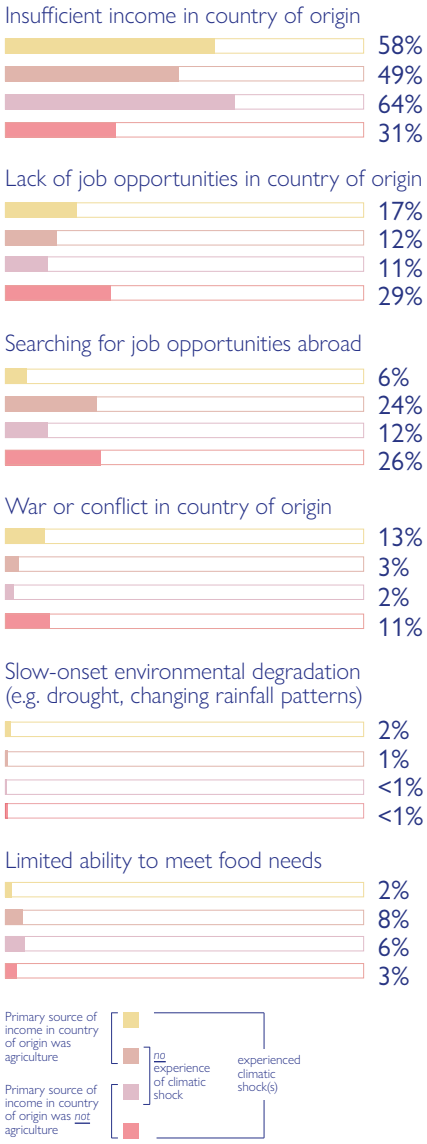
Overall, a total of 85 per cent of migrants estimated that the climatic shocks they had experienced had a medium or strong impact on their livelihoods as well as on those of the members of their community of origin. Unemployment (87%) and low or decreased wages (81%) were identified as having had the most acute impact by the largest share of migrants (Fig 2).

Impact of climatic shocks on food security

Around seven in ten migrants who had experienced at least one climatic shock in their country of origin stated that the shock(s) had impacted their households' income levels (75%) and stability (71%), potentially affecting their ability to purchase food and hindering their overall food security (Fig 3).

At the same time, 61 per cent of migrants stated that climatic shocks had led to a reduction in yields in their community of origin and 30 per cent mentioned it had impacted the supply of food in markets for consumers, which can affect[12] dietary diversity.

Figure 3: Top six migration drivers by sector of employment in Libya and whether migrants experienced a climatic shock



Furthermore, nearly three in five migrants (59%) mentioned that they had experienced increased price volatility further compounding the issue of access to food, particularly in countries where a large portion of the population spend a significant share of their income[13] on food, such as poorer households[14] in sub-Saharan Africa. In line with these results, a greater proportion of migrants from Eastern Africa (86%) and West and Central Africa (35%) than those from North Africa (23%), Asia (<1%) or the

6 IOM (2023). Climate Change and Human Mobility: Quantitative Evidence on Global Historical Trends and Future Projections. Available at https://www.migrationdataportal.org/sites/g/files/tmzbdl251/files/2023-06/Final5_2023%20Climate%20Change%20and%20Human%20Mobility.pdf (accessed November 2023).
7 World Economic Forum (2022). Global Risks Report 2022 - Chapter 4: Barriers to Migration. Available at https://www.weforum.org/publications/global-risks-report-2022/in-full/chapter-4-barriers-to-migration/ (accessed November 2023).
8 IOM (2023). Climate Change and Human Mobility: Quantitative Evidence on Global Historical Trends and Future Projections. Available at https://www.migrationdataportal.org/sites/g/files/tmzbdl251/files/2023-06/Final5_2023%20Climate%20Change%20and%20Human%20Mobility.pdf (accessed November 2023).
9 IOM Niger (2020). National Study on the Nexus between Migration, Environment and Climate Change in Niger. Available at https://environmentalmigration.iom.int/sites/g/files/tmzbdl1411/files/documents/study-iom-migration-environment-and-climate-change-niger.pdf (accessed November 2023).
10 IOM (2019). Climate Change and Migration in Vulnerable Countries. Available at https://publications.iom.int/system/files/pdf/climate_change_and_migration_in_vulnerable_countries.pdf (Accessed November 2023).
11 OECD (2003). Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation. Available at https://www.oecd.org/env/cc/2502872.pdf (accessed November 2023).
12 WFP & UK Met Office (2012). Climate Impacts on Food Security and Nutrition. Available at https://documents.wfp.org/stellent/groups/public/documents/communications/wfp258981.pdf (accessed November 2023).
13 FAO (2015). Climate Change and Food Security: Risks and Responses. Available at https://www.fao.org/3/i5188e/I5188E.pdf (accessed November 2023).
14 World Bank (2022). Food Share in Households' Budget across sub-Saharan African Countries. Available at https://issuu.com/world.bank.publications/docs/9781464818714/s/15512460 (accessed November 2023),

Middle East (<1%)[15] mentioned that the climatic shock(s) they had experienced had a strong impact on their access to food. Nearly half of migrants in Libya[16] (48%) come from sub-Saharan Africa.

The increased frequency and scale of climate-related hazards, along with insecurity and economic shocks are some of the main drivers of food insecurity worldwide, including in West, Central[17] and East[18] Africa, according to the Global Report on Food Crises 2023[19]. Food insecurity is a critical driver of international migration[20].

While a greater percentage of migrants who were not affected by climate change identified their limited ability to meet their food needs as the primary driver of their migration (Fig 3), overall, twice as many migrants who had endured a climatic shock cited this reason as first, second -most or third-most significant migration driver (28%) compared to those who had not (14%).

Nearly nine in ten migrants (89%) estimated that the climatic shock(s) they had experienced had a medium or strong impact on access to food and income levels in their community of origin.

Impact of climatic shocks on access to essential services (e.g. health, education)

A total of 78 per cent of migrants estimated that the climatic shock(s) they had experienced had a medium or strong impact on their access to essential services, such as health and education in their community of origin (Fig 4). The most commonly cited impact of climatic shock(s) on migrants' ability to meet their essential needs was related to the reduced willingness or ability to spend on children's education (59%) or health (48%) (Fig 5). This is likely related to the fact that a greater percentage of those who mentioned that they were less willing to spend on education (34%) or health (36%) reported that climatic shocks had had a strong impact on their livelihoods compared to those who did not mention their reduced willingness to send children to school or spend on healthcare (10% and 13%).

Impact on housing

A total of 86 per cent of migrants estimated that the climatic shocks they had experienced had a medium or strong impact on access to housing in their community of origin (Fig 4). The most commonly cited impacts included increased building material (52%) and housing prices (49%) as well as the unaffordability of housing (39%) (Fig 5). Increased rural to urban migration[21], whether directly, indirectly[22] or unassociated to climate change, may lead to, or exacerbate, a lack affordable housing[23], particularly in low-income countries. In addition to causing damage to housing - an impact which was reported by 15 per cent of migrants - extreme weather events can also affect the habitability of homes, an issue mentioned by 30 per cent of respondents. At the same time, inadequate housing

Figure 4: Extent of the impact of climatic shocks as perceived by migrants in relation to their access to food, livelihoods, housing and access to essential services in their country of origin

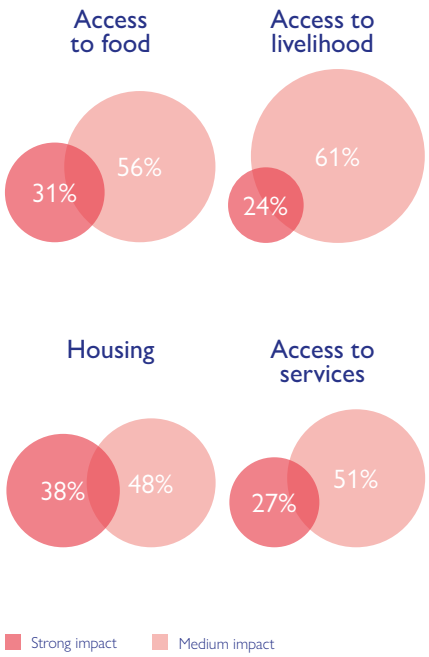
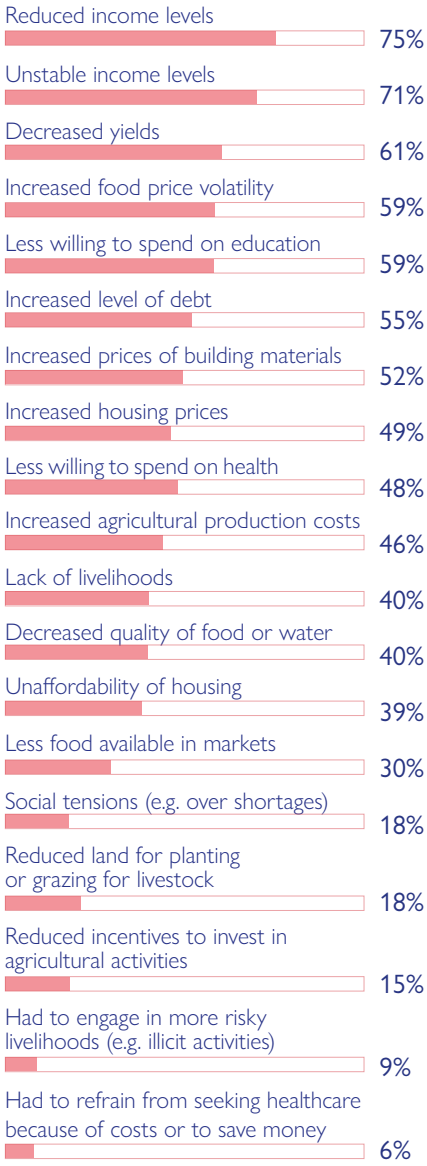


Figure 5: Impact of climatic shocks and stressors on migrants in their community of origin



15 It should be noted that the samples of respondents from Asia (n=11), East Africa (n=14) and the Middle East (n=5) who answered this question were limited.
16 IOM Libya (2023). Migrant Report Round 48 (May - June 2023). Available at https://dtm.iom.int/reports/libya-migrant-report-48-may-june-2023 (accessed November 2023).
17 WFP (2022). Hunger in West Africa Reaches Record High in a Decade as the Region Faces an Unprecedented Crisis Exacerbated by Russia-Ukraine Conflict Available at https://www.wfp.org/news/hunger-west-africa-reaches-record-high-decade-region-faces-unprecedented-crisis-exacerbated (accessed September 2023).
18 WFP & UNHCR (2022). Spiraling Costs, Surging Conflict, and Soaring Climate Disasters Create a Desperate Future for Millions of Refugees across Eastern Africa. Available at https://www.wfp.org/news/spiraling-costs-surging-conflict-and-soaring-climate-disasters-create-desperate-future (accessed September 2022).
19 Food Security Information Network (2023). Global Report on Food Crises 2023. Available at https://www.fsinplatform.org/global-report-food-crises-2023 (accessed November 2023).
20 FAO, IFAD, IOM & WFP (2018). The Linkages between Migration, Agriculture, Food Security and Rural Development. Rome. Available at http://www.fao.org/3/CA0922EN/CA0922EN.pdf. (accessed November 2023).
21 IOM (2017). Migration: Making the Move from Rural to Urban by Choice. Available at https://www.iom.int/news/migration-making-move-rural-urban-choice (accessed November 2023).
22 IOM (2014). World Migration Report 2015. Available at https://www.iom.int/sites/g/files/tmzbdl486/files/our_work/ICP/MPR/WMR-2015-Background-Paper-CTacoli-GMcGranahan-DSatterthwaite.pdf (accessed November 2023).
23 OHCHR (2023). Towards a Just Transformation: Climate Crisis and the Right to Housing. Available at https://www.ohchr.org/sites/default/files/2023-02/Climate-crisis-and-the-right-to-housing-Summary.pdf (accessed November 2023).

can increase individual vulnerability[24] to the effects of natural hazards, and as such is closely related to economic and social exclusion, as well as poverty; both conditions that can act as migration drivers.

Impact on displacement

Nearly a quarter of migrants (23%) mentioned that environmental and climate factors (including disasters) had caused members of their community of origin to be displaced on an occasional or regular basis. In line with these findings, more than three times as many migrants who had experienced a climatic shock in their country of origin mentioned having been forced to displace from their home (prior to migrating to Libya) (28%) compared to those who had not endured a climatic shock (8%).

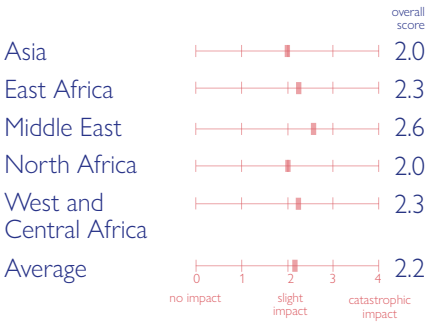
The majority of migrants (54%) reported that outmigration had not acted as a 'release valve[25]' by reducing pressure on natural resources in their communities of origin.

HOW DID THE EXPERIENCE OF CLIMATIC SHOCKS VARY ACROSS COUNTRY OF ORIGIN?

A greater proportion of migrants from East Africa (30%), Asia (26%) and West and Central Africa (24%) mentioned having experienced at least one climatic shock compared to those from North Africa (18%) or the Middle East (8%). However, respondents estimated that the average impact of the climatic shock(s) they experienced was greater in the Middle East (2.6 on a scale from 1 to 4, 4 being the most severe impact), West and Central Africa (2.3) and East Africa (2.3) compared to those from Asia (2) or North Africa (2) (Fig 6).

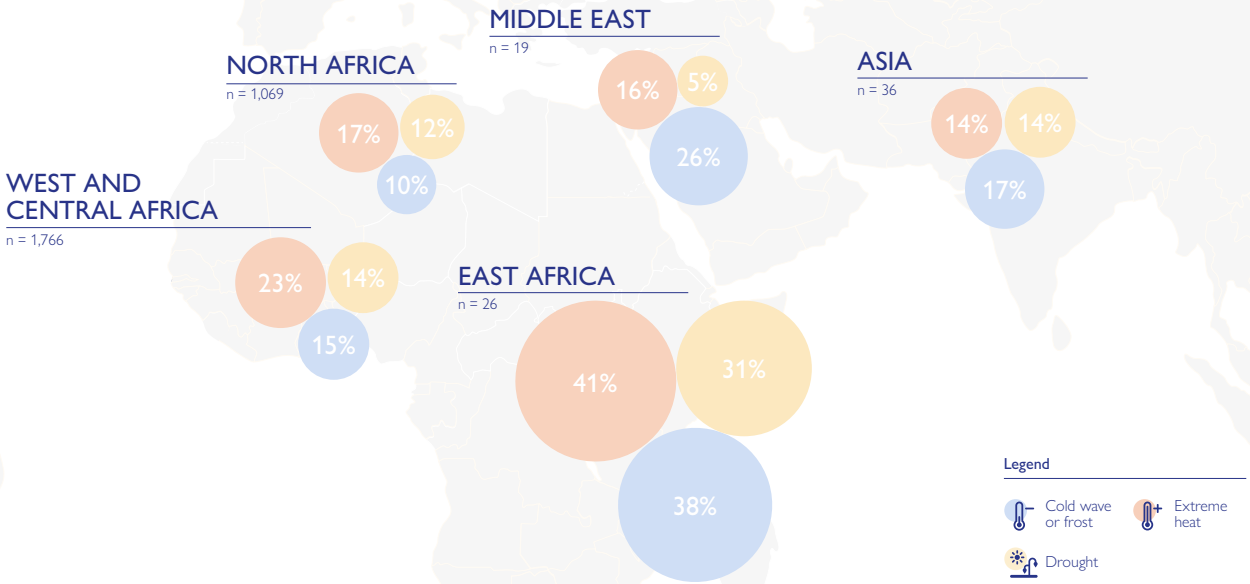
The most commonly cited climatic shock among migrants from East Africa (41%), West and Central Africa (23%) and North Africa (17%) was extreme heat whereas it was extreme cold for those from the Middle East (26%) and Asia (17%) (Fig 7).

Figure 6: Average severity of climate or environmental shock(s) experienced by region of origin



Drought was the second-most or third-most commonly cited climatic shock in all regions of origin. A greater proportion of migrants in East Africa (31%), West and Central Africa (14%), Asia (14%) and North Africa (12%) mentioned they had experienced drought compared to those from the Middle East (5%).

Figure 7: Map of the top three environmental shocks experienced by migrants in their country of origin in the 12 months prior to their migration to Libya



24 World Bank (2015). Stocktaking of the Housing Secotr in sub-Saharan Africa. Available at https://www.worldbank.org/content/dam/Worldbank/document/Africa/Report/stocktaking-of-the-housing-sector-in-sub-saharan-africa-summary-report.pdf (accessed November 2023).
25 UNEP (2016). Displacement and Environment in Africa: What is the Relationship. Available at https://www.unep.org/news-and-stories/story/displacement-and-environment-africa-what-relationship (accessed November 2023).

HOW HAVING TO COPE WITH SHOCKS AT HOME INCREASES VULNERABILITY IN LIBYA

The findings of this study confirm that climatic shocks can lead households to adopt negative coping mechanisms[26] to a greater extent than those who did not experience climatic shocks in their country of origin including pulling children out of school to support with paid and unpaid care and domestic work such as caring for younger family members or child labour to alleviate economic hardship (Fig 7).

Those who were affected by climate change and who had to adopt livelihood coping strategies to meet their essential needs in their country of origin not only endangered their capacity to withstand future shocks but potentially heightened their level of vulnerability during their migration journey as well as in Libya, as some of these strategies can damage households' productivity, wealth and wellbeing in the medium and long term.

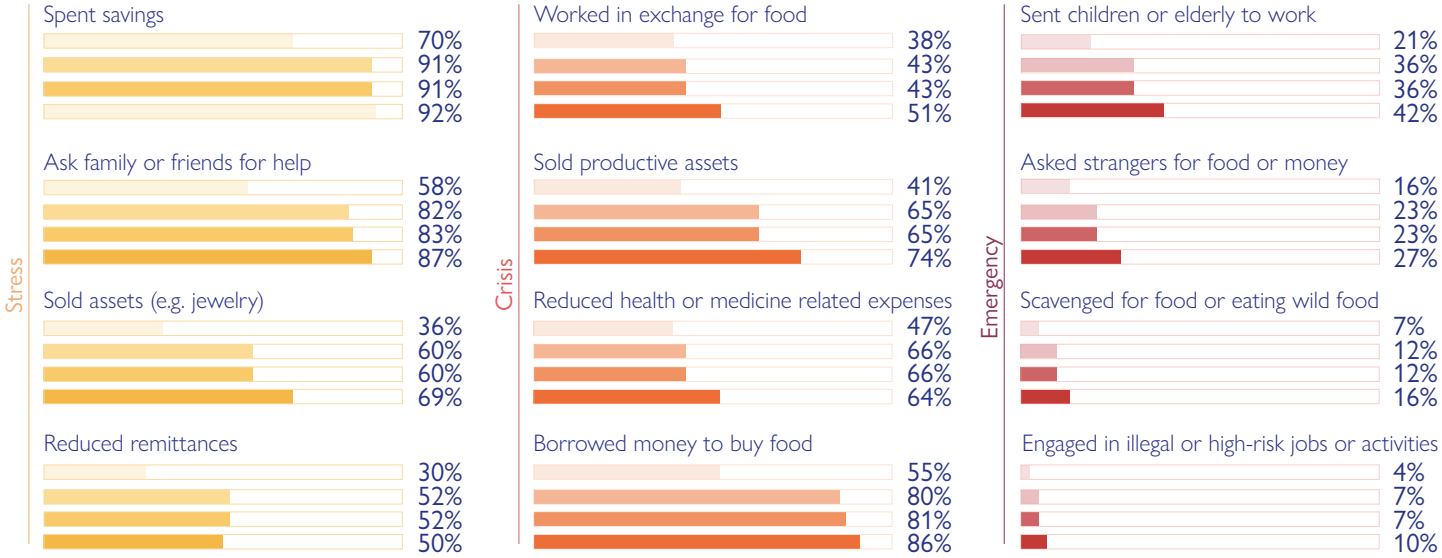
For example, a greater proportion of migrants who had experienced a climatic shock mentioned that they had financed their journey to Libya through incurring debt (54%) compared to those who had not experienced a climatic shock (40%). Having debt is associated with increased vulnerability[27] as it represents an increased challenge to repay debt after migrating while meeting their own and their household's needs.

While for many the decision to move can be a key driver[28] for the resilience of communities that potentially helps[29] households reduce the impact of environmental stressors by allowing access to new employment opportunities, the data collected by DTM Libya also confirms that the experience of climatic shocks can be associated with precarious migration[30]. For instance, twice as many migrants who had experienced climatic shock(s) stated that war or conflict in their country of origin was the main driver explaining their migration to Libya (10%) compared to those who had not endured a climatic shock (5%), regardless of whether their main livelihood was related to agriculture in their country of origin.

Moreover, migrants affected by both conflict and climate change appear to be the most vulnerable[31] group as one shock compounds another[32]. For example, migrants who had experienced a climatic shock and a conflict-related shock mentioned having systematically resorted to more extreme livelihood coping strategies and to a greater extent than those who had lived through only climatic shock(s), or climatic and economic shocks (Fig 7).

More specifically, twice as many (or more) migrants who had experienced a climatic and a political shock resorted to emergency-level strategies including sending children or the elderly to work, scavenging for food or engaging in illegal or high-risk jobs than those who had not endured a climatic shock (Fig 7). These findings are also in line with studies that have shown that climate change contribute, often indirectly, to increased conflict by, for example, exacerbating existing tensions[33], particularly in areas where there is a lack of adequate governance and institutional capacity.

Figure 7: Types of coping mechanisms migrants' households had to adopt in the year prior to their migration to Libya due to a lack of money



26 UNICEF (2023). How Gender-responsive, Age-sensitive Social Protection is Related to the Climate Crisis: A Summary of the Evidence. Available at https://www.unicef-irc.org/publications/pdf/How_GRASSP_is_related_to_the_climate_crisis.pdf (accessed November 2023).

27 IOM (2019). IOM Handbook on Protection and Assistance to Migrants Vulnerable to Violence, Exploitation and Abuse. Available at https://publications.iom.int/books/iom-handbook-migrants-vulnerable-violence-exploitation-and-abuse (accessed November 2023).

28 IOM (2022). In the Face of Climate Change, Migration Offers an Adaptation Strategy in Africa. Available at https://www.iom.int/news/face-climate-change-migration-offers-adaptation-strategy-africa (accessed November 2023).

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30 OHCHR (2021). Human Rights Climate Chnge and Migration in the Sahel. Available at https://www.ohchr.org/sites/default/files/2021-11/HR-climate-change-migration-Sahel.pdf (accessed November 2023).

31 UNFCC (2022). Conflict and Climate. Available at https://unfccc.int/news/conflict-and-climate (accessed November 2023).

32 Jaramillo, L., Cebotari, A., Diallo, Y., Gupta, R., Koshima, Y., Kularatne, C., Lee, J. D., Rehman, S., Tintchev, K. I., & Yang, F. (2023). Climate Challenges in Fragile and Conflict-Affected States. Available at https://www.imf.org/en/Publications/staff-climate-notes/Issues/2023/08/24/Climate-Challenges-in-Fragile-and-Conflict-Affected-States-537797 (accessed November 2023).

33 Climate Diplomacy (2023). Syrian Civil War: The Role of Climate Change. Available at https://climate-diplomacy.org/case-studies/syrian-civil-war-role-climate-change (accessed November 2023).

Remittances

A greater proportion of migrants who had suffered agricultural production loss due to environmental factors mentioned that the money they send to their families were their household's primary income (43%) compared to those had not suffered any losses (31%), potentially highlighting the pressure[34] these migrants are under to send remittances. In a context where employment is scarce[35] and the cost of living is rising[36], some migrants may be compelled to accept difficult living and working conditions in Libya that may lead to a higher level of vulnerability to violence, exploitation and abuse, to be able to remit money to their family, particularly for those whose remittances are their households' primary source of income.

Although further data would need to be collected to confirm it, remittances might also be used by migrants' households as a source of financing for climate adaptation[37] in their country of origin as it has been observed in other regions.

The pressure to send remittances is likely to heighten further the vulnerability of migrants who experienced climatic shocks as they generally fare worst in Libya compared to those who have not lived through climatic shock(s). For instance, a greater percentage of migrants who had endured a climatic shock mentioned suffering from financial issues, insecurity as well as a lack of food or clean drinking water (Fig 8). In addition, more migrants who had lived through a climatic shock prior to migrating to Libya stated having no access to health services in Libya (13%) compared to those who had not lived through a climate-related shock (8%). This is likely related to the fact that while the unemployment rate was similar among both migrants who had not experienced a climatic shock (15%) and those who had (15%), the average monthly income of the former (938 LYD) was higher than that of the latter (854 LYD). Moreover, a greater proportion of those who had lived through a climatic shock had to engage in damaging coping mechanisms (e.g. incurring debt, selling assets) prior to migrating to Libya and were therefore in a heightened state of vulnerability (Fig 7). The unemployment rate was highest among those who had lived through a combination of conflict-related and climatic shock(s) in the year prior to migrating to Libya (20%).

Differences between the sexes and age groups

A greater proportion of female migrants interviewed by DTM Libya[38] (30%) reported having experienced a climatic shock in the 12 months prior to migrating to Libya compared to males (25%). A similar proportion of both female (14%) and male migrants (15%) mentioned having experienced a climatic shock which they deemed severe.

Figure 8: Three main difficulties migrants reported facing in Libya (multiple-choice question)

However, a greater proportion of female migrants stated having been unemployed and actively seeking work in their country of origin (68%) compared to male migrants (47%). At the same time fewer females reported having had access to alternative livelihoods (2%) compared to males (17%), suggesting a potentially elevated level of vulnerability.

Migrant women who mentioned having experienced a climatic shock reported facing food insecurity or lacking clean drinking water (57%) in Libya to a greater extent than migrant men who had experienced a climatic shock (33%) and more than twice as women (24%) or men (12%) who had not experienced at least one climatic shock. Similarly, among those who had experienced a climatic shock, a greater proportion of females identified financial difficulties as one of the three main issues they faced in Libya (87%) compared to males (77%). The proportion of women migrants who had not lived through a climatic shock and faced financial difficulties in Libya was similar to that of males who had lived through a climatic shock (78% vs 77%, respectively) but significantly higher compared to males who had not endured a climatic shock (49%). Similarly, the unemployment rate in Libya of both male and female migrants who had experienced a climatic shock (14% and 58%, respectively) was higher than those who did not (13% and 51%) but more significantly so among women.

Individual and structural drivers such as social norms can impede women's ability to access and control assets and crucial resources (e.g. land, markets, fertilizer, seeds, financial capital, technologies) as easily as men, which can play a role in increasing[39] women's vulnerability to climate change as well as socioeconomic exclusion. Limited or no access to employment may lead[40] vulnerable migrants to resort to unsafe work, illegal or criminal activities or work that may

34 IOM (2023). Under Pressure: An analysis of remittance trends and the barriers preventing migrants from sending money home. Available at https://dtm.iom.int/reports/under-pressure-analysis-remittance-trends-and-barriers-preventing-migrants-sending-money?close=true (accessed November 2023).
35 IOM Libya (2023). Migrant Report Round 48 (May - June 2023). Available at https://dtm.iom.int/reports/libya-migrant-report-48-may-june-2023 (accessed November 2023).
36 World Bank (2023). Libya's Economy Shows Resilience and Potential for Prosperity Amid Challenges Available at Libya's Economy Shows Resilience and Potential for Prosperity Amid Challenges. Available at https://www.worldbank.org/en/news/press-release/2023/06/06/libya-s-economy-shows-resilience-and-potential-for-prosperity-amid-challenges (accessed November 2023).
37 Huber, J., Maduga-Lopez, I., Murray, U. et al. (2023). Climate-related Migration and the Climate-Security-Migration Nexus in the Central American Dry Corridor. Climatic Change. Available at https://doi.org/10.1007/s10584-023-03549-6 (accessed November 2023).
38 It should be noted however that a smaller sample of women were interviewed (166) compared to males (3,252). (The ratio malefemale migrants is around 9:1.)
39 UNICEF (2023). How Gender-responsive, Age-sensitive Social Protection is Related to the Climate Crisis: A Summary of the Evidence. Available at https://www.unicef-irc.org/publications/pdf/How_GRASSP_is_related_to_the_climate_crisis.pdf (accessed November 2023).
40 IOM (2019). IOM Handbook on Protection and Assistance to Migrants Vulnerable to Violence, Exploitation and Abuse. Available at https://publications.iom.int/books/iom-handbook-migrants-vulnerable-violence-exploitation-and-abuse (accessed November 2023).

increase their vulnerability as they are at higher risk of exploitation and abusive practices.

A slightly greater percentage of migrants under the age of 29 (27%) mentioned having experienced a climatic shock in the year leading to their migration to Libya compared to those of other age groups such as those aged between 30 - 39 (21%) or 40 - 49 (24%).

A higher share of migrants who were under 29 years old (18%) than any other age group mentioned having experienced a climatic shock of a severity which they classified as severe compared to other age groups (13% or less).

Studies have shown[41] that young people often have fewer opportunities to increase their resilience to climate change by having a sustainable income or owning land, for example. In line with the literature, fewer migrants under the age of 29 reported having had access to alternative livelihood opportunities when in need in their country of origin (13%) compared to those aged 30 - 39 (19%), 40 - 49 (33%) or 50 and over (41%). Similarly, a larger proportion of migrants under the age of 29 were unemployed in Libya (20%) compared to migrants of any other age groups (8% or less of those aged 30 - 59).

A total of 31 per cent of migrants interviewed mentioned that the majority of the youth in their communities of origin had migrated, a percentage that was more than twice among those who had experienced a climatic shock (57%) compared to those who had not (22%) (see section on «Agricultural losses and climate change» for more information).

What remains of those who stay behind

Migrants who had experienced at least one climatic shock reported that most men in their community had migrated (41%) compared to far fewer of those who come from communities who had not lived through at least one climatic shock (15%).

The outmigration of men can have positive (e.g. empowerment and space for women to adopt new livelihood opportunities and expand their role in public decision-making) or negative consequences[42] on the communities left behind (e.g. increase women's vulnerability due to a rise in their workload, unsafe working conditions or exploitation).

Around a third of migrants interviewed (31%) mentioned that the women who remain in their community of origin were worse off after the outmigration of most men, while 14 per cent stated that they were better off. The majority (54%) reported that women were in the same situation as prior to the outmigration of most men.

41 IOM (2023). Strengthening Africa Youth Voices on Human Mobility in the context of Climate Change Available at https://environmentalmigration.iom.int/sites/g/files/tmzbdl1411/files/inline-files/en-youth-engagement-workshop_continental.pdf (accessed November 2023).

42 IOM (2008). Migration and Climate Change. Available at https://publications.iom.int/system/files/pdf/mrs-31_en.pdf (accessed November 2023).

AGRICULTURAL LOSSES, CLIMATE CHANGE AND MIGRATION

Overall, a greater percentage of migrants from rural areas (30%) had experienced at least one climatic shock compared to those from urban areas (17%).

Climatic events, such as droughts affect[43] the quantity and quality of yields. Nearly three quarters of migrants who worked in agriculture in their country of origin (73%) mentioned that the climatic shock(s) they had experienced had led to a reduction in yields.

Furthermore, over a third of migrants who were interviewed between January and August 2023 and who worked in the agricultural sector (sample of 2,622 respondents) in their country of origin (35%) stated having experienced crop or livestock production losses due to environmental factors (e.g. drought, floods). A more significant proportion of migrants from Sudan (47%) and Chad (47%) than those from Egypt (35%) or Niger (26%) mentioned having suffered from a loss of agricultural production or livestock. One in ten migrants (11%) had suffered from crop diseases or pests, and six per cent reported having faced livestock diseases in their country of origin. According to FAO[44], plant pests that ravage economically important crops are becoming more destructive and posing an increasing threat to food security and the environment because of climate change.

43 WFP & UK Met Office (2012). Climate Impacts on Food Security and Nutrition. Available at https://documents.wfp.org/stellent/groups/public/documents/communications/wfp258981.pdf (accessed November 2023).
44 FAO (2021). Climate change fans spread of pests and threatens plants and crops, new FAO study. Available at https://www.miragenews.com/climate-change-fans-spread-of-pests-and-threats-570166/ (accessed November 2023).

While some rural workers are able to cope with or prevent the adverse impact of climate change, some may lack the capacity and resources to adapt[45], particularly smallholder farmers and those living in impoverished areas. In such cases, migration may be perceived as the only viable livelihood option to escape from poverty and hunger, improve life prospects and meet their ambitions. This view is particularly prevalent among rural youths.

A necessary livelihood diversification strategy with a long history

While cross-border mobility between, Niger and Libya, for example, has long been a livelihood strategy for migrant workers who constitute an important labour supply in the agricultural and construction sectors in the destination country, climate change is changing mobility dynamics by exacerbating pre-existing vulnerability, fueling displacement and increasingly leading to precarious migration.

Populations in the Sahel, for instance, are highly dependent[46] on rain-fed agriculture and pastoralism, which are practices particularly vulnerable to extreme weather events. Poor and erratic harvests as well as prolonged periods of drought have made migration a necessary livelihood diversification[47] strategy among many rural households. However, while migration can help reduce the impact of climatic shocks by creating access to new livelihood opportunities, it is not an option for all[48], as it requires financial resources.

45 FAO, IFAD, IOM & WFP (2018). The Linkages between Migration, Agriculture, Food Security and Rural Development. Rome. Available at http://www.fao.org/3/CA0922EN/CA0922EN.pdf (accessed November 2023).
46 World Bank (2023). Climate Change Knowledge Portal: Niger. Available at https://climateknowledgeportal.worldbank.org/country/niger/vulnerability (accessed November 2023).
47 FAO (2023). Climate change, migration and rural adaptation in the Near East and North Africa region. Available at https://www.fao.org/3/cc3801en/cc3801en.pdf (accessed November 2023).
48 Ibid.

REDUCED YIELDS

73%

of migrants who were employed in the agricultural sector in their country of origin mentioned that the climatic shock(s) they had experienced had led to a reduction in yields.

METHODOLOGY

DATA COLLECTION AND SURVEY DESIGN:

This study included two components: a literature review and quantitative interviews conducted with 3,418 migrants (3,252 males (95% of respondents) and 166 females (5% of respondents)[49]) from 31 nationalities in 52 municipalities (out of 100) and 20 regions (out of 22) across Libya. The interviews were held between 06 September until 31 October 2023. A minority of respondents were less than 20 (143 individuals or 4% of the total sample) or over the age of 60 (14 individuals or 1%). The majority of respondents were of working age (between 20 and 59) (3,262 individuals or 95%). The questionnaire included an adapted version of the Livelihood Coping Strategy Index to measure level of vulnerability prior to migrating and the Shock Exposure Index (SEI) to measure the overall degree of exposure to context-specific shocks and/or stressors at the household level.

LIMITATIONS

Sampling: migrants in Libya are a highly heterogenous group and their situation is dynamic. The face-to-face interviews took place mainly at work recruitment points (41%), workplaces (27%), collective sites of accommodation (23%), other urban locations such as markets (8%) and transit points along key migration routes (1%), which means that the results of the assessment are representative of migrants who frequent these public places. Migrants who may not be able to frequent these public places are less likely to have been included in the assessment. While this (purposive) sampling approach limits the findings on migrant vulnerabilities from being fully statistically representative of the entire migrant population in Libya, it represents a large-scale assessment of migrants.

Subjectivity of migrants' perception of the severity of shock(s) experienced: this study relied on the subjective perception of migrants interviewed to assess the severity of the shocks they experienced. Such perceptions are personal and can be influenced by a wide range of factors (e.g. respondent's character, mood, and a range of other cues as well as the local environment). Enumerators were trained to explain in detail the specificities of the questionnaire, including the questions on the perception of the severity of the shocks, which allowed them to ensure that the findings are as reliable and as accurate as possible.

Focus on international migration: while adverse environmental factors tend to have a more significant impact on internal mobility, most particularly rural-urban migration, this study captures mainly the experiences of migrants having migrated internationally to Libya. Some questions on those who remained in countries of origin, how they fare and whether they are left exposed to the impact of climate change were included in the study but further research to gain insight on how international migration is impacting local communities in countries of origin would be helpful in informing IOM and partners' programmatic activities.

DEFINITIONS

Climate change: as defined by the Intergovernmental Panel on Climate Change (IPCC), is a "change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer". IOM defines climate migration as "the movement of a person or groups of persons who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their habitual place of residence, or choose to do so, either temporarily or permanently, within a State or across an international border." It should be noted that this is a working definition as there is no internationally agreed one for the term "climate migration".

Resilience is the ability of an individual, household or community to absorb disturbances without long-lasting adverse consequences for their development.

Shocks are short-term events or deviations from normal conditions that cause welfare losses, such as drought, earthquake or armed conflict.

Stressors are long-term trends or pressures that undermine the stability of a system, increase vulnerability within it, and can be of economic, social or political nature. They include conditions such as low water quality, poor sanitation, environmental degradation, and challenging household or age structures (e.g. high dependency ratios). Stressors can be seasonal, such as the seasonality of prices, agricultural production, diseases and employment opportunities.

49 According to the latest DTM Libya data 88 per cent of migrants in Libya are males and 12 per cent are females. Time constraints limited the team's ability to reach a sample with a sex breakdown that is in line with demographic of the migrant population in Libya.

RECOMMENDATIONS

The findings of this study confirm that climate change is a contributing and exacerbating factor driving vulnerability and human mobility. While much like migration in general, climate-induced migration is more likely[50] to occur internally rather than across international borders, climate change remains a significant direct or indirect factor in the migration of individuals to Libya.

This study also showed that the impacts of sudden- or slow-onset events can lead to a range of consequences including a loss of income and livelihood sources, increased food insecurity, risks to human health and reduced nutrition from crop or livestock losses, land degradation and water scarcity, damage to and loss of homes or the inability to secure adequate housing — all of which in turn impact migrants' levels of vulnerability once in Libya. As such, the impact of climate change are closely intertwined with socioeconomic development as well as political and governance issues.

This study further highlighted that migrants' experiences, including whether they are able to cope with shocks, and the impact these shocks might have on their level of vulnerability in Libya is closely related to factors including the attributes and opportunities associated with being a woman or a man, age and conditions in the country of origin (e.g. war and conflict being significant drivers of vulnerability) as well as in Libya (e.g. employment status).

Based on these findings, IOM Libya recommends the following:

Provide solutions for *people to move*: enabling safe and regular migration and leveraging labour migration as a means of adaptation to climate change

This study found that migrants who have experienced climate shocks in their countries of origin may be confronted with increased levels of vulnerability in Libya as they are more likely to be indebted, unemployed, facing financial difficulties, without regular access to services and under pressure to send money home. As such, improving the ability of individuals affected by climate shocks and stressors to access labour mobility schemes in their country of origin, providing regular migration pathways and pre-departure orientation on safe migration initiatives can provide solutions for people to move as an adaption strategy while reducing their vulnerability. At the same time, these measures would also support migrants' contribution to both Libya's economy by filling gaps in the labour market[51], and that of their countries of origin by sending a portion of their earnings home through remittances.

Provide solutions for *people on the move*: expanding and improving data on the impact of climate shocks and stressors on migration to Libya

A better understanding of drivers of migration can contribute to more efficient humanitarian and development assistance in countries of origin and in Libya. To ensure the delivery and implementation of meaningful activities, programme and policy makers need to be able to identify migrants who have been affected by climate change, or those who are 'climate vulnerable'. Failing to do so will increase the difficulty of designing policies and legal pathways to support international migration as an adaptation mechanism, for example.

Provide solutions for *people to move, for people on the move and/or for people to stay*: considering how climate-related vulnerabilities may influence migration pathways and outcomes when designing policies and programmes

This study underlined the need for policies and programmes that understand, consider and address human mobility related to climate change on a spectrum from voluntary forms of movement to displacement. As such, protection- and people-centred approaches that take into account the individual factors of vulnerability that may affect migrants' conditions in both country of origin and Libya as well as on their migration journey are essential.

Moreover, greater awareness of the adverse factors, including climatic shocks, that lead individuals to migrate as a necessity rather than as a choice, often in unsafe conditions, can help policy makers address some of the root causes that drive people away from their home in search for a safer, dignified and productive life (e.g. poverty, inequality and unemployment) and implement adequate measures to ensure that people and communities can remain in dignity and safety.

50 World Bank (2022). Climatic Shocks and Internal Migration : Evidence from 442 Million Personal Records in 64 Countries. Available at: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099055001252216358/pdf (accessed November 2023).

51 Juillard H., Robalino D. Kitchingman-Roy D., Ossandon, M. and Charlot, C. (2021) Labour Market Assessment Libya. Available at https://libya.iom.int/sites/g/files/tmzbdl931/files/documents/20210811_LMA%20Collated%20Report%20ENG.pdf (accessed August 2023).

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IOM
UN MIGRATION

IOM's Displacement Tracking Matrix (DTM) tracks and monitors population movements in order to collate, analyze and share information to support the humanitarian community with the needed demographic baselines to coordinate evidence-based interventions.

To consult all DTM reports, datasets, static and interactive maps and dashboards, please visit:

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