

Al Maharah, Yemen



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Satellite image of
Al Maharah Governorate,
Yemen.

SAUDI ARABIA

OMAN

Al Maharah

YEMEN

Key findings

- The majority of respondents were not considering moving, but about a third expressed an interest in doing so. Of those who wanted to move, most said that they would not have the resources to do so.
- Respondents saw economic, rather than climate, as the most prevalent reason for community members to migrate. However, climate hazards are closely interrelated with economic drivers.
- Among those who expressed an interest in mobility, the vast majority expressed an interest in moving abroad, most commonly to Oman or Saudi Arabia.
- Separation of households was prevalent in mobility. Young men migrating alone were the most common profile of people moving from Al Maharah.
- The vast majority of respondents reported being affected by climate-related hazards and thought that they were getting worse, which might indicate an increasing role of climate change impacts in decision-making. IDPs and migrants emerged as particularly vulnerable to these hazards, with limited resources to adapt.
- Fishing, which is highly climate dependent, was the largest single source of livelihoods. However, many have a diversified set of livelihoods, which offers some resilience against climate hazards, and most respondents said they were able to afford their basic needs and access services. That said, broader community resilience mechanisms capable of withstanding climate stressors appear to be minimal, and support was largely deemed limited, sporadic, and largely inadequate.

Note on data collection

Data collection was conducted between 3 December 2024 and 15 January 2025. A total of 220 household surveys were conducted, with 110 men and 110 women selected from the governorate. ([see map](#))

Eight focus group discussions were held with participants from households in the sample area, with two groups of men and two groups of women from the community of origin (divided by age: 18-25 and over 25); two groups of migrants; and two groups of internally displaced persons (IDPs).¹

In addition, 17 in-depth interviews were conducted. This included eight interviews with individuals from the governorate, specifically targeting the four defined mobility outcomes (involuntary mobility, involuntary immobility, voluntary mobility, and voluntary immobility), with two interviews per outcome. Additionally, two interviews were conducted with migrants and two with IDPs. To gain broader contextual insights, five key informant interviews were also carried out with policymakers, local authorities, community leaders, international non-governmental organisation (INGO) representatives, and climate change experts.

About this project

This case study forms part of a wider piece of research examining how climate-related factors influence mobility aspirations, capabilities, and outcomes in four different locations in the Middle East. It examines decision-making at the individual and household levels, drawing insights into how people process and respond to climate challenges through (im)mobility. The research draws on a framework conceived by the Mixed Migration Centre (MMC) to explore the idea of mobility in the context of climate change impacts. The framework delineates mobility outcomes into four categories: involuntary mobility, voluntary mobility, involuntary immobility and voluntary immobility.² It illustrates how climate-related environmental stressors affect mobility outcomes and how they directly and indirectly impact the aspiration and capability to move. While recognising that these categories are often overlapping and are rarely tidy, it provides a framing for considering the multiple and shifting forms of movement that characterise the region.

The research focused on Aden and Al Maharah governorates in Yemen, Al Qadissiya governorate in Iraq, and Al-Hasakeh governorate in Syria. These are all areas particularly vulnerable to climate-related stressors and represent a diversity of socioeconomic contexts. One case study was developed for each location, and a synthesis report was produced integrating analysis from the four case studies and highlighting key insights gleaned from the research. Data collection for this research included household surveys, focus group discussions and individual in-depth interviews to shed light on experiences of (im)mobility, connections to climate-related hazards, and the perceived outcomes of mobility. Additional expert interviews were used to address any evidence gaps. See the [synthesis report](#) for a more comprehensive overview of the analytical framework and methodology.

MMC carried out this project with funding received from the Foreign, Commonwealth and Development Office (FCDO). It builds on prior research to assess the state of knowledge on climate change impacts on mobility and migration dynamics in the Middle East.³

¹ For the purposes of this research, we defined internal mobility as those coming from outside the governorate, excluding movement within it.

² MMC (2024) [Climate Change Impacts and Mobility in the Middle East What do we know?](#)

³ MMC (2024) [Climate Change Impacts and Mobility in the Middle East What do we know?](#)

A note on terminology

MMC developed a list of key terms used throughout this project, including:

- **Climate change:** A change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer (IPCC (Undated) [IPCC — Intergovernmental Panel on Climate Change](#)).
- **Climate-related environmental stressors:** Perceived and experienced long-term meteorological impacts on the ecosystem that may affect the functioning of the biological system (e.g. NCBI (2016) [National Center for Biotechnology Information](#)).
- **Climate-related hazards:** Natural meteorological events that pose danger to humans and the environment. These events occur due to deficiencies or excess of precipitation, destructive winds and anomalous temperatures (based on WMO and UNFCCC terminology around climate-related risks / hazards and extreme events).
- **Resilience:** The ability of individuals, households, communities, cities, institutions, systems, and societies to prevent, resist, absorb, adapt, respond and recover positively, efficiently, and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning and without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all (IOM (2019) [Glossary on Migration](#)).
- **Vulnerability:** The limited capacity to avoid, resist, cope with, or recover from harm. This limited capacity is the result of the unique interaction of individual, household, community, and structural characteristics and conditions (IOM (2019) [Glossary on Migration](#)).

A note on limitations

This is a comparative project looking in-depth into people's perceptions across a range of locations. However, the scope and timeframe were limited to specific areas within the case study governorates at a particular moment in time. As a result, the findings from these areas may not reflect the full range of experiences and responses to climate change and mobility across the governorate, and conditions and responses could vary in other areas. In addition, while the findings offer insights into perceptions of climate-related environmental stressors and adaptation, the research represents a snapshot in time, and so provides limited insights into how perceptions and attitudes develop over time. Finally, given the adoption of non-probabilistic sampling, the findings should be considered indicative.

Al Maharah and climate risks



The Hawf District in Al Maharah Governorate. Located in Yemen's eastern highlands near the Omani border, Hawf benefits from monsoon-driven seasonal rainfall, which supports unique biodiversity and lush vegetation rare in much of the country. However, shifting climate patterns threaten the area's delicate ecological balance and traditional livelihoods.

Photo credit: © Alkhaleej online/ Flickr (2018)

Geographic and demographic context

Al Maharah governorate is located in southeastern Yemen and shares a border with Oman to the east. Despite being the second largest governorate in the country, covering an area of 67,000 km², it is the least populated, with an estimated population of 175,000.⁴ Its capital, Al-Ghaydah, lies along the Arabian Sea. Al Maharah's remote location has historically kept it somewhat insulated from the direct effects of Yemen's civil war, which began in 2014. However, it has not remained untouched.⁵ While conflict intensity has declined since the 2022 ceasefire, no formal peace agreement has been reached, and political and military tensions persist.⁶

Al Maharah has historically been within Oman's sphere of influence, owing to shared cultural, linguistic, and tribal ties, particularly with the neighbouring Dhofar region.⁷ Oman has maintained this influence through soft power strategies, such as providing humanitarian aid and offering citizenship to local residents.⁸ However, in recent years, Saudi Arabia has significantly increased its presence in the governorate. Since 2017, Saudi forces have taken control of key infrastructure, including Al-Ghaydah Airport, the Nishtun port, and the Sarfit and Shahan border crossings with Oman.⁹ The United Arab Emirates has also sought to expand its reach in Al Maharah, notably by supporting the formation of local military units and engaging in infrastructure projects.¹⁰ These overlapping actions by Saudi Arabia and the Emiratis have heightened regional competition, leading to increased tensions and concerns over the erosion of local autonomy and traditional conflict resolution mechanisms.¹¹ Al Maharah has also felt the effects of Yemen's financial crisis, resulting in the withdrawal of several government actors from the region in 2016,¹² and continues to grapple with elevated inflation rates.

Geographically, the southern part of the governorate is characterised by desert terrain, while the east includes a mountainous zone. The coastline, home to the majority of the population, is rich in fish and marine resources. Fishing is therefore a key livelihood activity, although most households rely on a mix of income sources.¹³ In the sparsely populated interior, pastoralism remains an important economic activity.¹⁴ The governorate also holds untapped natural resources, including gold, marble, granite, and black sand.¹⁵

As of December 2024, Al Maharah was hosting an estimated 19,719 internally displaced persons (IDPs) out of the 4.5 million across Yemen.¹⁶ Most had relocated to urban centres in the governorate from more insecure parts of the country,¹⁷ although disaster-related displacements are growing

4 ACLED. Yemen Conflict Observatory (2024) [Regional Profile: Al Mahra](#).

5 Ibid.

6 Center for Preventive Action (2024) [Conflict in Yemen and the Red Sea](#).

7 Martin W. Lewis (2015) Yemen's Beleaguered Al Mahrah Seeks Autonomy. GeoCurrents | Anadolu Agency (2021) Saudi Arabia, Oman compete for control in Yemen's Mahra.

8 Ibid.

9 Jamestown Foundation (2019) Saudi Arabia and the UAE in al-Mahra: Securing Interests, Disrupting Local Order, and Shaping a Southern Military.

10 ACLED. Yemen Conflict Observatory (2024) [Regional Profile: Al Mahra](#).

11 Middle East Institute (2023) [The war next door: Omani foreign policy toward Yemen](#).

12 Center for Preventive Action (2024) [Conflict in Yemen and the Red Sea](#).

13 International Fund for Agricultural Development, (1999- 2009) [Al Mahara Rural Development Project](#).

14 Sanaa Centre for Strategic Studies (2021) [The need for climate preparedness in Al Mahara](#).

15 ACLED. Yemen Conflict Observatory (2024) [Regional Profile: Al Mahra](#).

16 UNHCR [Operational Data Portal](#) (2024) Yemen.

17 UNHCR [Operational Data Portal](#) (2024) Yemen.

more common. In 2023 alone, an estimated 931,000 people were displaced by disasters nationwide, 761,000 of them due to flooding.¹⁸ As of January 2025, Al Maharah also hosted approximately 3,000 refugees and asylum seekers, primarily from Somalia.¹⁹

Climate hazards in Al Maharah

Yemen, and Al Maharah in particular, is vulnerable to multiple climate hazards, including cyclones, flooding, extreme temperatures and sea level rise.

- **Cyclones:** Over the past decade, Al Maharah has become increasingly susceptible to cyclones, which have grown in both frequency and intensity.²⁰ In 2015, Cyclone Chapala brought heavy rains and strong winds, causing widespread damage. In 2018, Cyclone Mekunu, which was less intense, but still had a notable impact. In the same year, Cyclone Luban struck Al Maharah, particularly Ghaydah, with considerable force, eroding agricultural land, destroying homes, and displacing more than 2,000 families.²¹ Then, in October 2023, the governorate was hit by Cyclone Tej, which killed seven people²² and displaced an estimated 65,000.²³
- **Flooding and cyclones:** Shifts in rainfall levels and intensity have triggered flooding and increased its frequent.²⁴ Flash floods in 2008 caused significant damage to infrastructure and property, and several cyclones, including Chapala and Megh, have also triggered serious flooding.²⁵
- **Extreme temperatures:** Al Maharah has a semi-arid climate, and daily high temperatures average about 36 degrees Celsius during the summer months.²⁶ While location-specific data is limited, Yemen as a whole is warming at a rate faster than the global average.²⁷
- **Sea level rise** is a further hazard, particularly for coastal populations.²⁸

Population profile and perceptions

Profile of survey respondents

220 individuals interviewed

Gender:

50% men and 50% women

Age:

18-25: 8%;

26-65: 91%;

Over 66: 1%

Average household composition:

5.5 members, 1.5 financial contributors, 1 child

Education completed:

20% university or higher;

5% vocational;

30% secondary education;

30% primary education;

16% none

Remittances:

20% receive remittances from elsewhere

Economic activities and livelihoods

The population of Al Maharah is heavily dependent on fishing, a sector highly vulnerable to climatic impacts. The largest single sector mentioned by respondents was fishing (occupying 20% of respondents). However, reported livelihoods were relatively diverse, offering a degree of resilience through activities less sensitive to climate variability. For example, 19% of respondents reported working in education, and 11% in administrative and support activities. In focus group discussions, participants mentioned a combination of agriculture, fishing, livestock rearing, and government employment as sources of income, although government salaries were often considered insufficient to meet household needs. A few key informants also mentioned beekeeping and trade with neighbouring Oman as supplementary sources of livelihood.

18 Internal Displacement Monitoring Centre (2023) [Yemen](#).

19 UNHCR [Operational Data Portal](#) (2024) Yemen. Governorate-level figures are accessible only for the refugee and asylum seeker population registered by UNHCR. Estimates of the migrant population are only available at the national level (approximately 132,330 migrants in Yemen, according to [UNOCHA](#). For the purpose of this research, and unless stated otherwise, individuals engaged in mixed migration, including refugees and asylum seekers, are categorised under the term "migrants".

20 Safia M. (2024) [Al Maharah: Bearing the Brunt of Hurricanes and Climate Change](#) Yemen and Gulf Center for Studies.

21 OCHA (2018) [Yemen: Cyclone Luban Flash Update](#).

22 WHO (2023) [Yemen struck by Tropical Cyclone Tej as its health system struggles to cope](#)

23 IDMC (2024) [Yemen](#).

24 Sanaa Centre for Strategic Studies (2021) [The need for climate preparedness in Al Mahara](#).

25 Ibid.

26 Ibid.

27 Red Cross Climate Centre, [Yemen Country Profile](#).

28 Mixed Migration Research Centre (2024) [Climate Change Impacts and Mobility in the Middle East: What do we know?](#)

Reflecting this diversity, respondents' household dependence on farming and fishing for daily food varied considerably. Twenty-one percent of respondents reported that their household was fully dependent on fishing and/or agriculture for daily food needs, 15% indicated partial dependence, and 62% reported no dependence on these sectors.

Climate vulnerabilities are not experienced evenly across Al Maharah, with notable disparities between rural and urban populations. One key informant described three broad livelihood groups, highlighting potential differences in exposure to climate impacts: Bedouins and desert dwellers primarily depend on pastoralism and agriculture; coastal residents mainly engage in sea fishing; and city dwellers rely on government jobs, private sector employment, and trade.²⁹ Although focus group participants noted that incomes were rarely sufficient across all professions, the differing types of livelihoods suggest a divergence between rural and urban households, with rural populations more reliant on activities highly sensitive to climate and environmental changes.

Regular employment was the most common form of work among survey respondents, though securing steady jobs remained a particular challenge for migrants. Twenty-nine percent of respondents reported being regularly employed, 27% were casually employed, 25% were self-employed, and 15% were unemployed.³⁰ Focus group discussions illuminated barriers to regular employment, which appeared to be a particular challenge for migrants. As one interviewed Somali man explained: "It is very hard to find work, and the main sources of livelihood for us are hard and dangerous work in the host community. For example, difficult construction work without guidance and without safety equipment."

Despite the context of ongoing civil war, 99% of respondents reported not having been concerned about conflict in the three months preceding data collection. This may reflect both the overall decline in conflict intensity since 2022 and the relative insulation of Al Maharah due to its geographic location.



Fishing boats line the coast of Al Maharah Governorate, eastern Yemen. Fishing remains a key source of income for many coastal communities, though the sector is increasingly affected by changing sea conditions and economic instability. The area also serves as a maritime entry point for migrants arriving irregularly from the Horn of Africa.

Photo credit: © Brendan C/Flickr (2021)

²⁹ Multiple Key informant Interviews.

³⁰ Others reported engaging in household or family responsibilities (10%), studying (6%), being retired (3%), undertaking professional training (1%), and doing unpaid volunteering, community or charity work (1%).

Basic needs, access to services, and future outlook

Although Yemen remains one of the poorest countries globally, many respondents in Al Maharah reported being able to meet their basic needs. Sixty-one percent of respondents indicated that they had access to sufficient resources to meet their basic needs, while 38% reported insufficient resources.³¹ However, water access remained a challenge, with 40% of respondents frequently needing to fetch water from outside for drinking or other household uses.

Access to services did not appear to be significantly constrained. The vast majority of respondents (97%) said that services such as schools and healthcare were at least somewhat accessible: 50% considered them somewhat accessible, 32% said they were easily accessible, 15% described them as very accessible, and only 3% reported difficulty accessing services. Ninety-four percent of respondents reported not experiencing discrimination when accessing services, suggesting that intra-communal strife is not significantly compounding existing hardships.

While most respondents reported living in adequate housing, a sizeable minority were residing in subpar or temporary structures, pointing to persistent shelter vulnerabilities. Seventy-seven percent of respondents reported living in adequate shelters, while 13% reportedly lived in damaged or unfinished housing, and 7% in prefabricated structures.

Migrants and IDPs in Al Maharah, on the other hand, face particular challenges in accessing adequate housing, leaving them more exposed to climate-related hazards. Many reportedly live in temporary or precarious shelters, including dilapidated buildings, tents, and even on the street.³² IDP focus group participants also reported that because they live on land that does not belong to them, they also face harassment from government authorities from time to time.³³

Inadequate housing conditions directly contribute to heightened vulnerability to climate hazards for both IDPs and migrants, who often lack sufficient protection from extreme heat, storms, and flooding. Their shelters are frequently fragile and exposed, making them particularly susceptible to damage during adverse weather. An interviewed Somali man described having to relocate repeatedly: “Floods and strong rains or weather depressions often cause us to be displaced again—it destroys our shelter, which is mostly tents... everything is destroyed and we have to start again.” A Somali woman similarly described the difficult living conditions and resulting climate vulnerability, despite feeling safer in Al Maharah than in Somalia: “My whole family lives in one small room. We suffer from extreme heat, lack of air conditioning and fans, and constant mosquito infestations. But at least we are safe.”³⁴ Such conditions can increase health risks both from heat and from mosquito-borne illness, which in turn can disrupt livelihoods and education.

While many respondents were coping in the present, there was a strong sense that conditions are likely to worsen. Indeed, many of the household respondents were negative about the prospects for the future. When asked whether their household would be able to provide for its members over the next five years, the most common response (34%) was that their situation would deteriorate. Thirty-one percent thought it would remain the same, only 16% believed it would improve, and 20% were unsure.

31 One person responded that they didn't know. Numbers do not add up to 100% due to rounding.

32 Focus group discussion, female IDPs.

33 Focus group discussion, male IDPs.

34 Interview with refugee woman.

Impacts of climate-related events

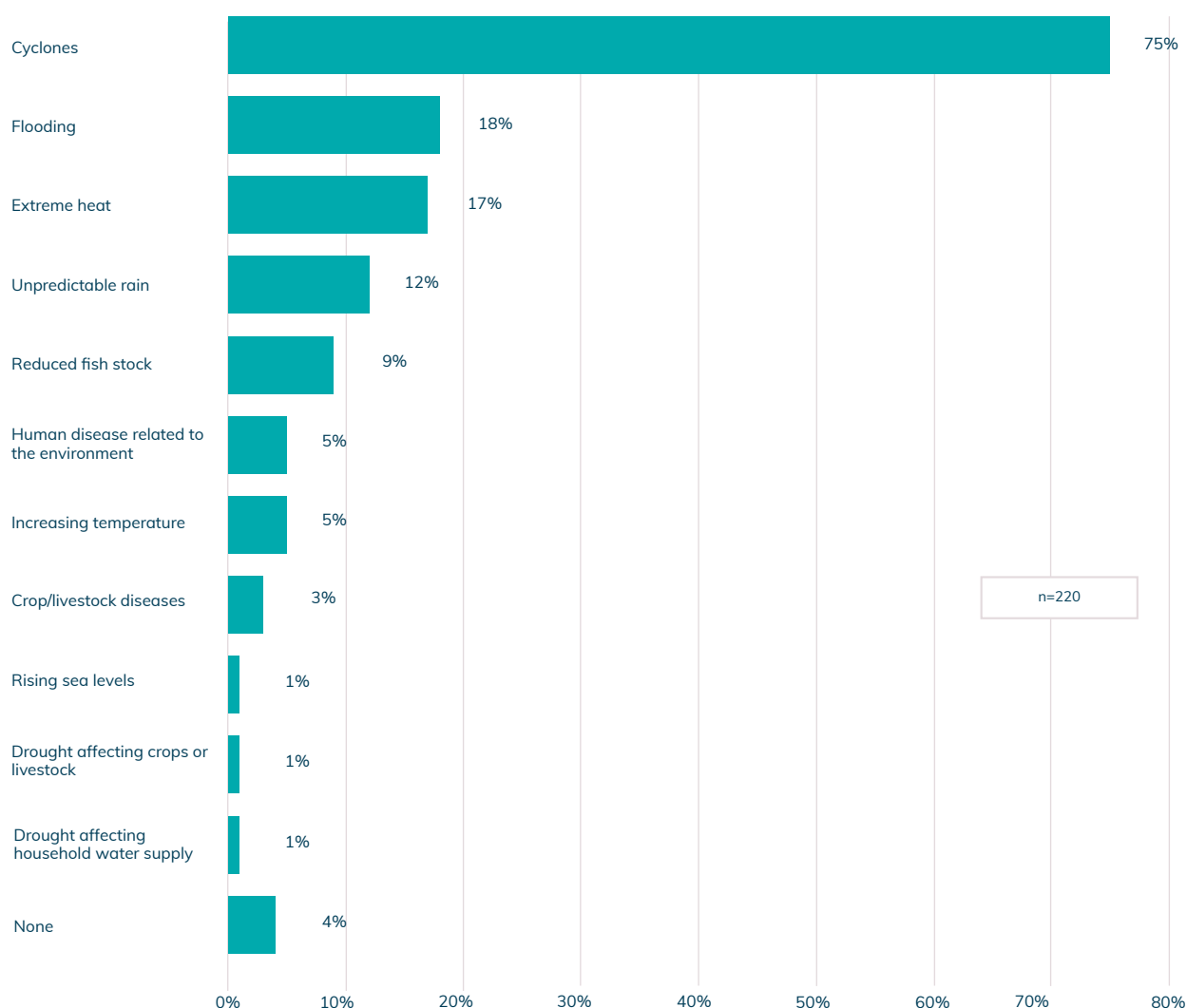
Climate hazards are growing more common in Al Maharah, and their impacts are increasingly severe as a result.

Almost all respondents (96%) reported that their household had been exposed to at least one climate hazard (see Figure 1). Cyclones were by far the most commonly cited hazard among respondents (75%), followed by flooding (18%) and extreme heat (17%). When asked about the severity of cyclones, 62% of respondents described the impacts as moderate or slight, 30% reported severe or very severe impacts, and 6% said they were not impacted at all.

Sea level rise was only mentioned by two respondents in the household survey, although it was cited as a significant risk in the literature review and key informant interviews. This is perhaps a reflection of the very localised nature of the threat near the coast, and its tendency to manifest through storm surges may limit its visibility as a standalone concern among the general population.

Cyclones were widely seen as increasing in recent years. Of those who mentioned cyclones as a hazard (n=154), 81% said that they were getting more severe, compared to 6% who said that they stayed the same and 13% who said that they were getting less severe. Focus group participants likewise mentioned that these hazards have increased in frequency over the past five years.

Figure 1. Reported climate-related hazards experienced in the five years prior to data collection³⁵



³⁵ Respondents could choose multiple options.

Findings show that climate hazards are leading to negative and even fatal health impacts, disrupting utilities, damaging homes and property, limiting access to education, and impeding livelihoods. Notably, all respondents who reported exposure to at least one climate-related hazard in the five years prior to data collection indicated that these stressors impacted their household. Among those, 77% associated these impacts with cyclones, although negative impacts were also attributed to flooding, extreme heat, unpredictable rain and reduced fish stocks, among others. All reported impacts of cyclones, the most commonly mentioned hazard, are presented in Figure 2 below.

- **Health consequences** emerged as the most common impacts of cyclones. Among respondents who reported being impacted by this hazard (n=164), 64% mentioned such consequences. High winds, flying debris and sudden flooding can also result in longer-term health impacts, and in some instances, fatalities. As recognised globally, floods can contaminate water supplies, increasing the risk of cholera and diphtheria outbreaks.³⁶ Stagnant water in the aftermath can increase the mosquito population, leading to a rise in the occurrence of malaria and dengue fever. Storm conditions and or flooding in the aftermath can also interrupt access to medical facilities and care. Children are particularly vulnerable to these risks.³⁷ The extent and frequency of the hazards also have negative psychological effects. As one woman participant in the group discussions put it, “we live in constant fear of the next terrible weather event.”³⁸ Health consequences were also attributed to extreme heat, according to respondents.
- **Disruption of utilities**, including water and electricity networks, was the second most commonly cited consequence (60%) by those who reported cyclone-linked impacts. For example, Cyclone Tej took the electrical system offline³⁹ across much of the governorate and disrupted water systems in several areas.⁴⁰ Restricted access to water remains a key concern, exacerbated by the destruction of water and sanitation infrastructure during the war and the over-extraction of groundwater resources.⁴¹
- **Destruction of property** was reported as a major impact of cyclones and flooding. Among those who indicated impacts of cyclones, 55% mentioned damage to or destruction of housing, while 47% reported destruction of personal belongings. Focus group participants highlighted the destruction of substandard homes, damage to stores, and the loss of fishing boats and equipment. Several key informants also noted that roads had been damaged, limiting access and trade.⁴²



Flooding in Al Maharah Governorate. The governorate has experienced increasingly severe and unpredictable rainfall events in recent years. Floods like these have damaged roads, isolated communities, and disrupted livelihoods.

Photo credit: © albarjeel/Flickr (2015)

- **Displacement** was also mentioned in focus group discussions as a key consequence of cyclones and other storms, resulting in the destruction of homes and flooding of certain areas.

- **Disruption of livelihoods** was further identified as a key consequence of climate hazards. This was most commonly associated with cyclones, but also with declining fish stocks and flooding. Indeed, 39% of those who had been impacted by cycles reported the loss of livelihood assets.

Qualitative data highlighted the severe repercussions of cyclones on both agriculture and fishing. In some areas, cyclones were said to have altered coastal flood patterns.⁴³ An interviewee who made his living from fishing explained, “our daily lives depend on the natural environment. Changes in weather conditions, such as shifts in temperature or increased storms, significantly impact fishing seasons. Environmental changes such as water pollution or fish mortality also affect the sustainability of our income. In short, ... [we] realised the importance of preserving natural resources to sustain our way of life.”⁴⁴

36 MMC (2024) [Climate Change Impacts and Mobility in the Middle East What do we know?](#)

37 The Lancet (2024) [Risks of infectious disease hospitalisations in the aftermath of tropical cyclones: a multi-country time-series study.](#)

38 Focus group discussion with Yemeni women 25+.

39 OCHA (2023) [YEMEN: Flash Update #1 Cyclone Tej.](#)

40 OCHA (2023) [Yemen: Situation Update - Cyclone Tej.](#)

41 Mixed Migration Research Centre (2024) [Climate Change Impacts and Mobility in the Middle East: What do we know?](#)

42 Multiple Key informant Interviews.

43 Key informant Interview, Community leader.

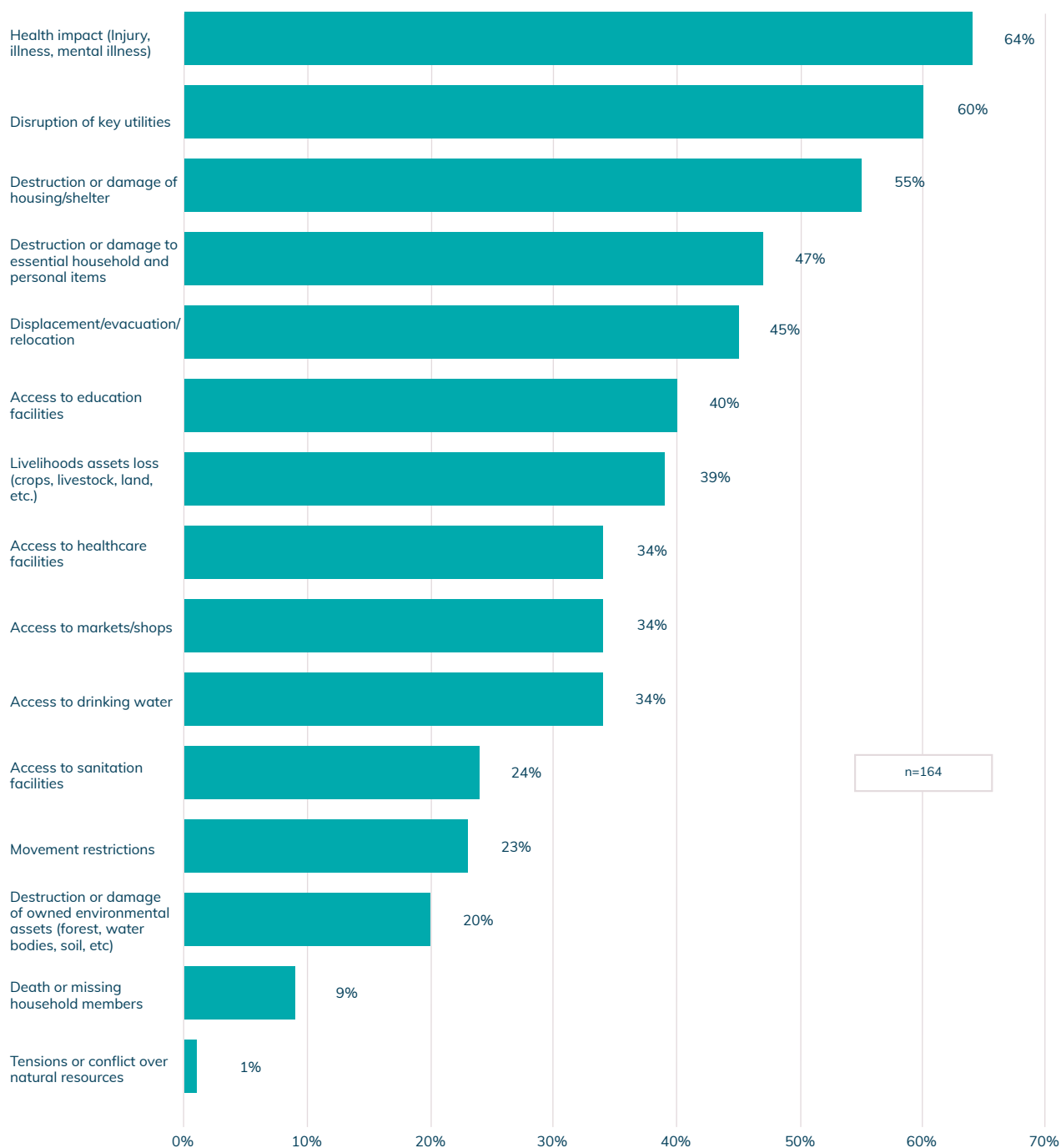
44 Interview with returnee man.

Floods were also reported to have destroyed crops and killed livestock. As one woman interviewee mentioned, “our farm was washed away by water, and we also lost some of our livestock in the floods. We also had soil erosion, and we could not afford the fertilisers we needed.”⁴⁵

Climate risks more broadly have reportedly reduced agricultural production. For instance, key informants mentioned that Cyclone Tej eroded agricultural lands;⁴⁶ and drought has decreased agriculture and livestock production, particularly in valleys and inland regions.⁴⁷

- **Disruption of access to education facilities** was another frequently reported impact, mentioned by 40% of those who felt the impacts of cyclones, due to damage to schools and interruptions in access..

Figure 2. Reported consequences of cyclones, among respondents who indicated that their household was impacted by this hazard⁴⁸



45 Interview with involuntary mobile woman.

46 Interview with climate expert.

47 Key informant Interview, Community leader.

48 Respondents could select more than one answer.

Responses to climate-related impacts



The Huswain District, a coastal area in Al Maharah Governorate. Much of the governorate is covered by arid desert terrain, with scattered palm groves and settlements near the coast. Rising temperatures and shifting weather patterns are contributing to environmental stress across the region.

Photo credit: © Al-Harith bin Saeed bin Omar Habayshan/Wikimedia (2020)

Overall, while some forms of solidarity and mutual aid reportedly exist at the family or neighbour level in Al Maharah, broader community resilience mechanisms capable of withstanding the growing impacts of climate-related hazards appear to be minimal. Adaptation remains highly constrained by limited resources, fragile shelter conditions, and the cumulative strain of repeated shocks. While just over half of respondents reporting impacts of climate hazards indicated that their households received some form of external assistance, many focus group participants across IDP, migrant, and host communities emphasised that such support was limited, sporadic, and largely inadequate.

Community resilience and adaptation

Focus group discussions revealed very limited evidence of strong community resilience or adaptive capacity in Al Maharah. Participants across all groups - IDPs, migrants, and host community members - consistently described themselves as highly vulnerable to environmental shocks, with few resources or strategies available to manage the impacts. While some informal support existed within families or among neighbours, there was little indication of wider community-level organisation or preparedness.

Participants agreed that climate hazards such as cyclones, flooding, and extreme heat had intensified in recent years, placing growing strain on livelihoods, housing, and basic services. **Coping at the household level was typically reactive and constrained, often involving relocation to safer areas when possible, repairing damage using personal resources, or relying on extended family networks for assistance.** However, these mechanisms were frequently described as insufficient to meet the scale of the risks faced. One participant noted: "We have no strength or resilience to face climate risks and environmental changes."

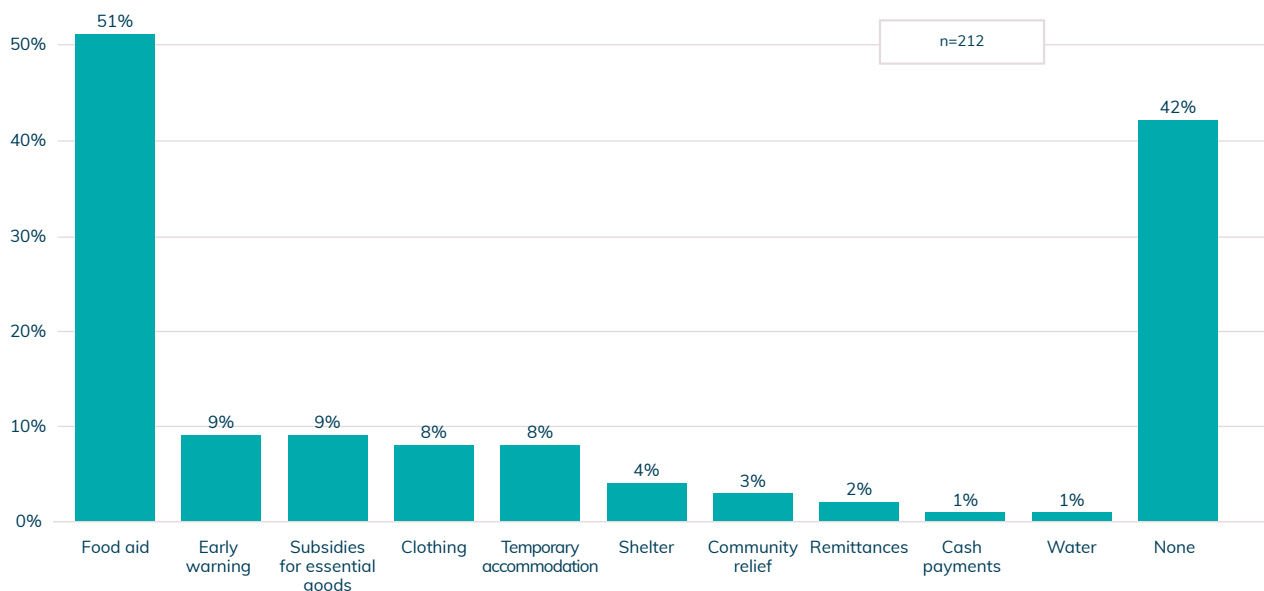
Migrants, in particular, described even more precarious conditions, relying heavily on unstable income sources such as informal work or daily-wage labour. **Their adaptation strategies often focused on finding temporary shelter in lower-cost areas, pooling limited resources among relatives, and moving when conditions became untenable.** As one participant explained: "Every family supports itself; the host community does not support us, and our conditions are very difficult."

When discussing longer-term resilience, respondents across groups emphasised that without improvements in basic infrastructure, such as better drainage systems, more resilient housing, and risk awareness, future hazards would likely cause even greater hardship.

External support for responding to climate hazards

More than half of the respondents who reported impacts of climate hazards (n=212) said their household had received assistance to adapt or respond. Food was the most common form of support, while a significant portion, nearly half, reported receiving no assistance (see Figure 3).

Figure 3. Assistance/support received when faced with or in preparation for climate shocks, as mentioned by respondents who reported experiencing climate hazards⁴⁹



Respondents whose households had reportedly received assistance (n=122) had most commonly received it from international NGOs (80%), local community groups (51%) or the government (37%).⁵⁰

Despite the widespread perception that climate hazards have intensified in recent years, **no IDP, migrant, or host community focus group participants reported receiving sustained and adequate support from government actors, local authorities, or humanitarian organisations.** Among host community members, multiple participants emphasised the absence of preparedness measures and voiced frustration at the lack of basic infrastructure improvements. As one participant explained, “there is no type of material or psychological support... no resources or additional support available to help those affected mitigate the impact of these climate risks.” One Yemeni interviewee said, “There is not enough support in Al Maharah Governorate from the local side to support families to face the circumstances they may be exposed to [by climate impacts]. As for the non-official bodies or organisations, they provide some assistance to some needy families, but not enough.”⁵¹ A government official key informant noted that there were no mechanisms in place to enhance resilience or alleviate the risk of climate hazards. The only practical support, he continued, was received from Oman.⁵²

Migrant participants described an even more acute sense of marginalisation. Although some mentioned one-off support from United Nations (UN) agencies during emergency periods, most said they relied on each other or on irregular work to survive. Several respondents expressed frustration that aid and assistance programmes largely excluded non-nationals, and that even local charities and authorities prioritised the needs of Yemeni citizens.

The type of available resources most frequently referenced in focus groups was early warning efforts. Participants in the focus groups mentioned that early warning systems, weather reports on news channels, and social media platforms helped to keep them informed of the risks.⁵³ A government official noted that early warning and increased awareness of climate change allowed communities to take action to protect themselves (like moving to higher ground).⁵⁴ One interviewee also said that early warning allowed them to “prepare by purchasing tarps to cover any exposed areas or clearing water channels to facilitate the flow of rainwater and prevent it from stagnating and causing diseases.”⁵⁵

⁴⁹ Respondents could select more than one answer.

⁵⁰ In addition, 37% mentioned government agencies or institutions, 23% family and friends, 2% private sector, and 2% religious institutions.

⁵¹ Interview with Yemeni woman.

⁵² Key informant Interview Government official.

⁵³ Focus group discussion with men 25+

⁵⁴ Key informant Interview with Government Official.

⁵⁵ Interview with Yemeni man.

Mobility patterns

Survey findings suggest that Al Maharah is characterised by significant and ongoing patterns of (im)mobility, often shaped by economic need and constrained resources. There appears to be recent acceleration in mobility, primarily among younger men seeking income opportunities to support family members left behind.

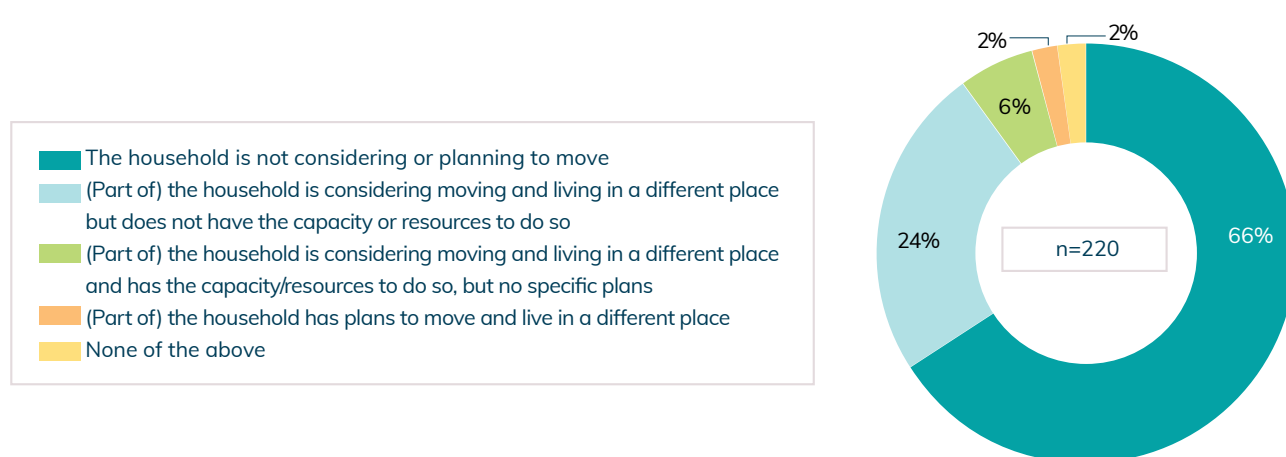
Just under half (44%) of respondents reported that a household member had moved at least once in the ten years prior to data collection. Among those who reported such movement (n=96), 35% said it had occurred within the year prior to data collection, 44% between one and five years, and 20% between six and ten years

At the time of data collection, most respondents reported that no one in their household was actively considering or planning a move. When asked about current intentions, 66% said their household was not considering moving. On the other hand, around one third (32%) reported that at least one member was considering or already planning to move. (See Figure 5)

Respondents presented these mobility intentions as moderately pressured, and it was clear that many who were interested in migration were constrained from doing so by resources, suggesting a high prevalence of involuntary immobility driven by these factors. Among those who reported that (part of) their household was considering or planning to move (n=70), the majority - 53 respondents - said they did not have the resources to do so. When those reporting these mobility intentions/considerations were asked to rate how urgently they felt the need to migrate on a scale of one to ten (in which one represents a free choice and ten represents no choice at all), most answered 4 or 5.

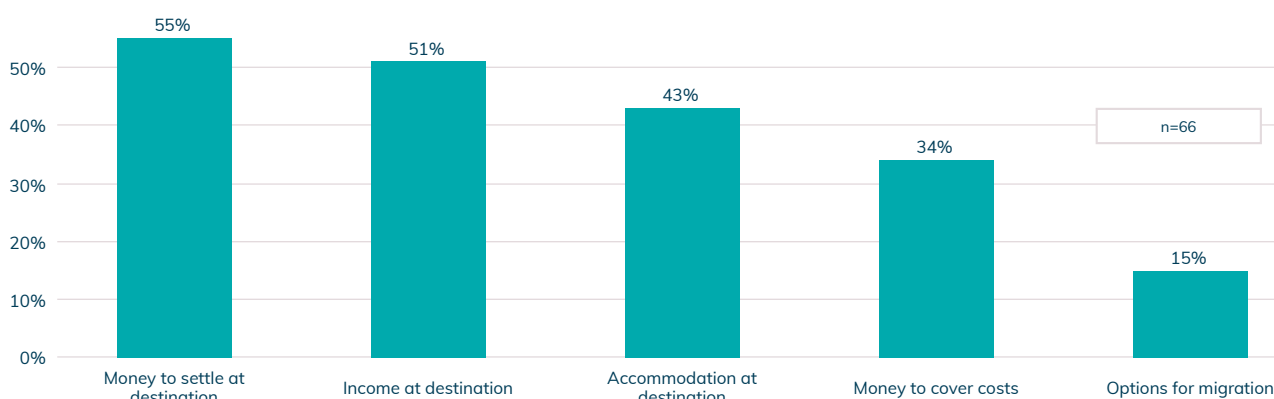
Reported destinations reflected a mix of international and internal movement, suggesting varied motivations and pathways of mobility. Among respondents whose household members had reportedly moved (n=96), 43% said the destination was another country, while 25% cited a secondary city, 16% the capital, and 16% a rural village. Interest in international movement was also high among those who reported mobility considerations or plans within their household at the time of data collection. Of those considering a move abroad (n=49), the most frequently mentioned destination was Oman (34 respondents), followed by Saudi Arabia (12), the UAE and Kuwait (2 each), and Canada and Switzerland (1 each).

Figure 4. Reported mobility intentions and availability of resources/capacity to do so



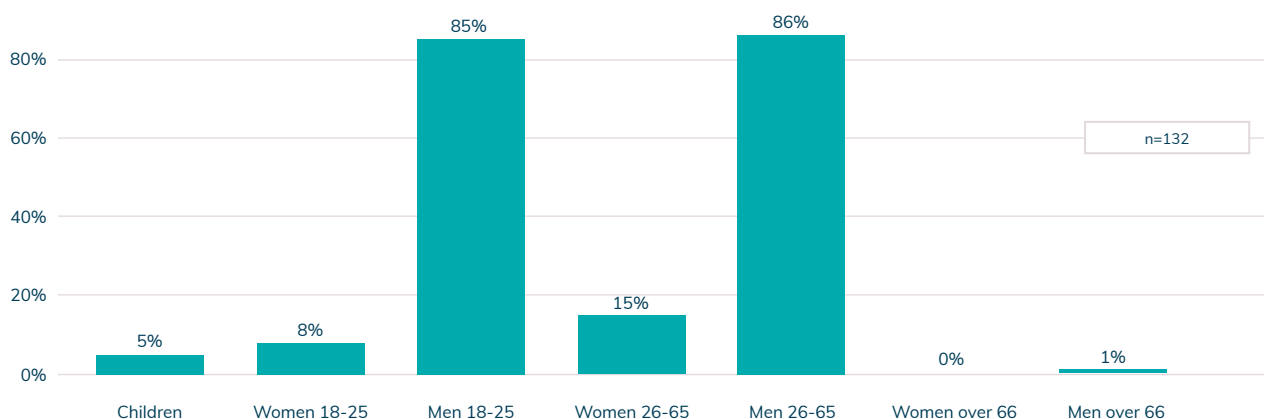
Financial constraints appear to be the main barrier to desired mobility. When asked about the resources/assistance needed to move as desired, respondents who reported mobility intentions within their household with specific plans about this movement (n=66) most frequently cited money, either to cover the journey costs or for settling into the new location, or a source of income once at destination, as shown in Figure 5.

Figure 5. Top five needs to move as desired, as respondents reported mobility intentions within their household w/24th specific plans about this movement⁵⁶



In Al Maharah, younger men, often moving without their families, were reportedly the most likely to engage in mobility, especially to other countries to secure income for family members left behind. Respondents were asked whether mobility was common within the community; only 33% reported it was uncommon or very uncommon.⁵⁷ Those who did not describe mobility as very uncommon (171) were subsequently asked whether households usually move in full or partially. The majority indicated that not all members moved together (77%), while 22% said the whole household typically moved as a unit.⁵⁸ Among those who reported partial household movement (n=132), most said that young men (18–25) and adult men (26–65) were the ones who typically moved (see Figure 6). Focus group participants echoed this pattern, frequently noting that young men commonly travelled to Oman or Saudi Arabia to seek employment and support family members back home. However, many also emphasised that moving abroad was not accessible to all; financial constraints were often cited as a key barrier for those who wanted to move but lacked the resources to do so.⁵⁹

Figure 6. Profiles of individuals most likely to move in Al Maharah, according to respondents reporting partial household mobility



Mobility was seen as both an opportunity and a source of strain, particularly in relation to household dynamics. One female focus group participant captured a widely shared sentiment: “Although mobility offers work opportunities and a higher standard of living, it often leads to the breakdown of social ties and a decrease in population in areas with high migration rates. Like when a father moves for work and leaves his children behind, it results in children growing up in an incomplete family environment. And women whose husbands are migrants face the burden of managing tasks on their own in the absence of their migrant husbands.”⁶⁰

⁵⁶ Respondents could select more than one answer. Other answers included: Social support (from family/friends) at destination (14); documentation (13); access to transportation (6); improvement of the security situation/lifting of movement restrictions (5); care for dependents (children/ people with sickness or disabilities) as individual settles in place of destination (4); someone to look after business or farming activities here in my absence (4); a route or plan for the journey (2); trusted connections to assist with the journey (2); and permission from a family member or guardian (1). one respondent declined to answer (1).

⁵⁷ Two percent said that it was very common, 5% selected common, and the majority (50%) said that it was neither common nor uncommon.

⁵⁸ The remaining 1% represents one respondent who did not know.

⁵⁹ Multiple individual interviews.

⁶⁰ Focus group discussion young Yemeni women 18-25.

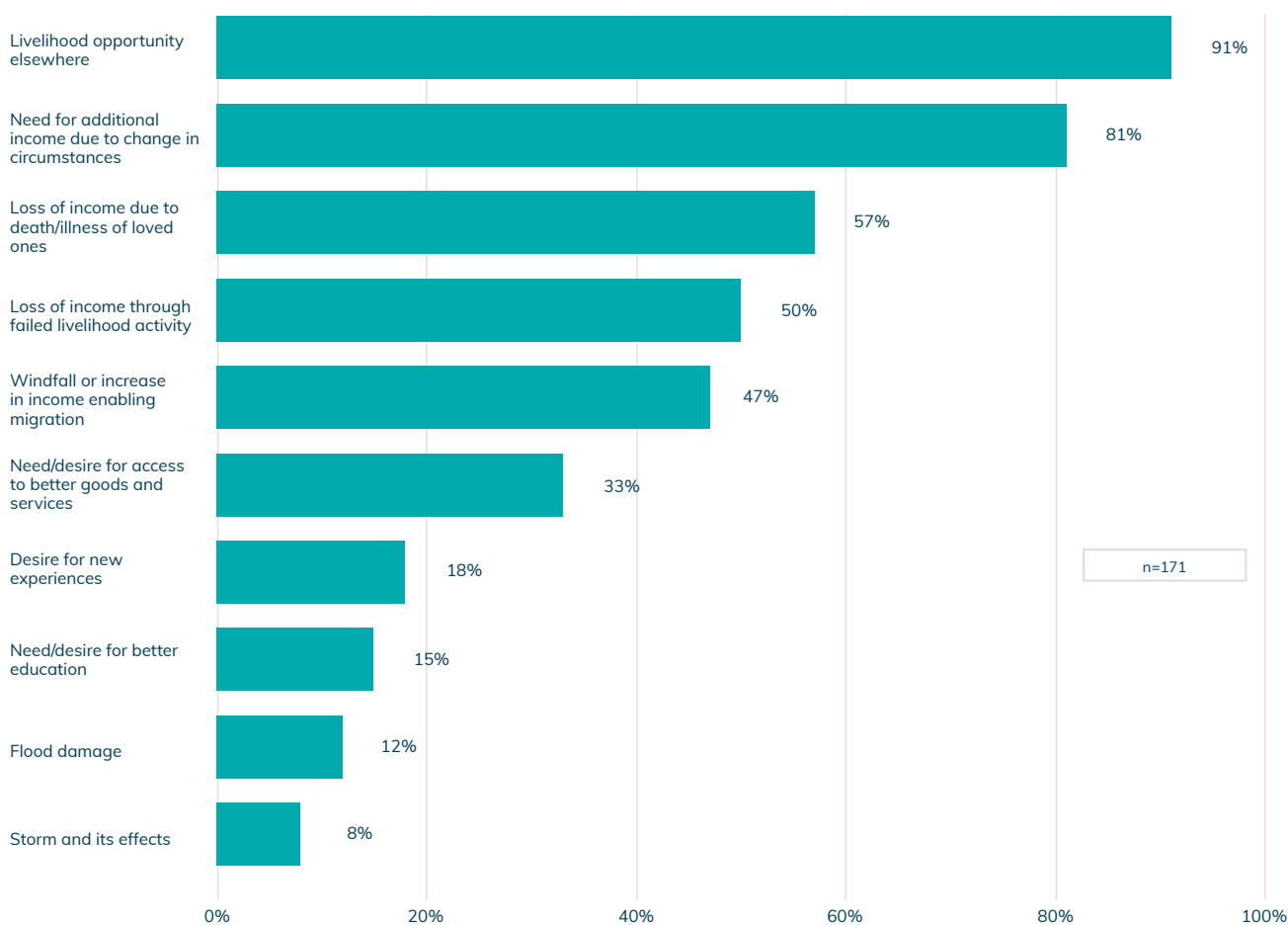
Survey findings suggest that mobility was most commonly of limited duration, with many of those who moved returning to their communities over time. When those who did not describe mobility in the community as very uncommon (n=171) were asked whether those who left generally returned, 51% reported that people returned often or very often, 36% said sometimes, and 13% said rarely or never. However, among respondents who reported considering or planning to move at the time of data collection, interest in long-term or permanent relocation appeared higher. In addition, focus group participants and key informants also mentioned temporary or seasonal mobility to avoid harsh environmental conditions, such as travelling during the hurricane season or relocating to escape extreme summer heat and autumn winds.

Impact of climate-related events on mobility

Economic reasons were more commonly cited by respondents as the direct reason to move or to consider moving than climate hazards. However, climate and economic factors are often strongly linked.

Among those who reported that mobility occurred regularly or (very) frequently in their community (n=171), the majority cited economic reasons as the main driver for these movements, as shown in Figure 7. Economic factors were also reported as the primary reason for mobility among respondents who said that some or all members of their household were considering or planning to move. By contrast, climate-related stressors were less often linked to movement in the community by respondents: 12% mentioned floods, 8% storms, and just 1% extreme temperatures.

Figure 7. Most reported mobility drivers within the community, among respondents who did not describe mobility in the community as very uncommon⁶¹



⁶¹ Respondents could select up to five answers. Other answers included: Marriage/ family reunification elsewhere (8%); need/desire for better health facilities (6%); easing of restrictions on movement (3%); unpredictable rains (2%); eviction or threat of eviction (1%); overpopulation or demographic changes (1%); discrimination (religious, sexual, other) (1%); grief/ trauma from death/illness of loved ones (1%); water shortages (1%); easing of (social/cultural) pressures to stay (1%); no specific reason (1%); political unrest/riots in our area (1%); and extreme temperatures and their effects (1%).

However, qualitative data suggest that climate and economic drivers are closely interlinked. Several focus group participants noted that climate-related disruptions, such as reduced fish stocks, flooding of farmland, or damage to infrastructure, directly affect household incomes. Focus group participants highlighted this connection, explaining that loss of income due to failed fishing ventures or livestock losses was often related to extreme weather or environmental degradation.

Mobility was being considered as an adaptation strategy by a significant minority of respondents who were reportedly impacted by cyclones. When those who reported being affected by cyclones (n=164) were asked if a recurrence of these events would affect their household's thinking about mobility in the future, 64% said that it would not, as compared to 9% who said that it would affect their thinking a lot, and 23% who said it would affect their thinking "a bit," and 4% said that they did not know."⁶²

Although respondents most frequently cited economic drivers of migration, it was clear that climate is also playing an important role in economic outcomes and that economic and climatic factors are strongly interconnected. Focus group participants and individual interviewees mentioned that climatic factors intersect with broader rural-to-urban migration patterns from coastal areas and valleys, which are most vulnerable to climate hazards, to the capital of the governorate and other cities, perceived as safer.⁶³ Focus group participants also told the story of the village of Kaiseet, abandoned due to the frequency of natural disasters there. Some respondents described movement as a seasonal or temporary strategy during the hurricane season or periods of extreme heat, while others linked their decisions to broader histories of family migration. As one interviewed returnee explained, "We have a tradition of parents and grandparents, many of whom moved to work, especially to the Gulf countries."⁶⁴

Participants were divided, however, on how these different factors interact. For example, in a focus group discussion with women, some argued that climate had not had a strong impact on mobility, while others said that it had. Ultimately, the nuanced relationship between climate, economic strain, and mobility was revealed in individual stories. For instance, an interviewed returnee who had worked in the fishing sector cited the decline in fish availability and shifting prices as key reasons for his decision to migrate, issues that he acknowledged were deeply affected by climate variability.

However, for some, moving does not necessarily eliminate exposure to climate risks. One Somali interviewee described how repeated cyclones in Somalia destroyed his palm farm, prompting him to move to Yemen. Yet in his new role extracting frankincense, he continued to face environmental challenges: "When the rain comes, the frankincense dissolves. My work stops completely for a month or two, and I have no income."

Summary

Al Maharah has experienced a series of significant climate hazards in recent years, particularly cyclones, which have led to widespread damage to housing, infrastructure, and livelihoods. Almost all respondents reported being affected by at least one hazard, and while many described the impacts as moderate or slight, around a third reported serious or very serious consequences. Flooding and extreme temperatures were also noted as recurring concerns, especially in coastal and low-lying areas.

Despite this exposure, many showcased a degree of resilience, largely driven by community solidarity and adaptation strategies. While economic conditions were challenging, a majority of respondents said that their households could meet their basic needs, and most reported access to public services such as schools and healthcare. Early warning systems, particularly through mobile weather apps and local knowledge, were commonly cited as the main tools for preparing for hazards, with **limited evidence of broader disaster preparedness or sustained institutional support.** **Displaced communities were often found to be the least resilient,** facing compounded challenges of limited access to services, uncertain living conditions, and insufficient support mechanisms, which further undermined their capacity to effectively cope with climate impacts.

Patterns of mobility reflected a complex interaction between economic pressures, climate impacts, and social factors. Almost one-half of respondents said that a household member had moved in the ten years prior to data

62 The remaining 4% did not know.

63 Key informant Interview Climate change expert.

64 Interview with Yemeni man, returnee.

collection, most often for economic reasons. Interest in future movement was relatively high among those affected by climate hazards, though most respondents ultimately cited financial barriers as a key constraint. Among those considering movement, the majority reported lacking the resources to do so, suggesting high levels of involuntary immobility.

While two thirds of respondents did not report any plans to move within their household, the remaining respondents said that at least one member was considering or planning to move. Most described these mobility intentions as relatively moderately pressured, yet many of those wishing to move lacked the financial resources to do so. Constraints were particularly acute for low-income households, women, and other marginalised groups. For those who did move, integration in new locations was not always guaranteed, with many reporting limited access to livelihoods and persistent social exclusion. In this context, **if the basic levels of support currently available are improved and expanded, mobility pressures may remain manageable. However, if climate hazards intensify or support declines, mobility demand is likely to rise, alongside an increase in involuntary immobility and precarious migration.**

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