

# MOVING TOWARDS RESILIENCE:

A STUDY OF CLIMATE CHANGE,  
ADAPTATION AND MIGRATION



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# FOREWORD

**By Richard Santos**  
**President and CEO of Church World Service**

In 2021, Church World Service marks 75 years of helping communities around the world to transform themselves through just and sustainable responses to hunger, poverty, displacement, and disaster. From our very beginning in 1946, we have been a grassroots movement to welcome people who are displaced, and an advocate for the dignity and safety of all those who are on the move.

As we celebrate our 75th anniversary, this includes the growing number of people whose lives are impacted by climate change. In 2020, disasters related to sudden weather events displaced at least [30 million people globally](#). Other impacts, such as rising temperatures, water scarcity, and shifts in seasonal rainfall, are being felt more gradually. While these slow-onset changes may not get the attention of massive storms or wildfires, in many farming communities where CWS works around the world, these are what people most feel in their daily lives, and what increasingly affect perceptions regarding adaptation and migration.

As a community of faith, CWS works for justice for all people, and for future generations. The world's poorest communities and countries did not produce the greenhouse gasses that science has proved to cause climate change. People who are suffering the most are those who have contributed to the problem the least.

Efforts to mitigate climate change, including an urgent shift from fossil fuels to renewable energy, are critical to avoiding the most extreme scenarios. And that is something that we can achieve – and indeed, must achieve – to avert unnecessary harm and suffering.

But even under best case scenarios, both science and human experience tell us that climate change will continue to impact, and in some cases devastate, vulnerable families and communities. Investing in disaster risk reduction, livelihoods adaptation, and community resilience is crucial; particularly for women and girls, who often are disproportionately impacted, and at the frontlines of adaptation within families and communities.

We must also stand with people displaced by climate change. Expanding the use of existing protection mechanisms and safe migration pathways, and developing new ones where needed, reflects our long-held value to welcome the stranger. Above all, we must respect the dignity and autonomy of climate-impacted people to assess adaptation and risk management options – including mobility – and to make informed decisions for themselves.

The accelerating climate crisis requires a truly global response, in which as many organizations and movements as possible contribute. CWS joins like-minded and like-hearted people worldwide, in calling for, and contributing to, the safety, dignity and human rights of those whose lives and livelihoods are impacted by climate change.

*Our desire is not that others might be relieved while you are hard pressed, but that there might be fair balance. At the present time your plenty will supply what they need, so that in turn their plenty will supply what you need. The goal is fair balance.*

– 2 Corinthians 8:13-14 ■

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Our pilot research project was a collaborative effort involving staff, consultants, and partners in seven countries. This included contributions by multiple individuals to: framing our research questions; reviewing existing literature; designing and testing qualitative research tools; identifying sampling approaches; training enumerators and ensuring human subjects' protections; organizing and conducting data collection; translating interview tools and responses; reviewing data and conducting preliminary analysis; writing, reviewing and editing report content; discussing report content with partner communities and incorporating feedback; and preparing the report for publication.

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This report would not have been possible without the time and contributions of more than 300 women and men in five countries, who participated in one-on-one interviews, focus group discussions, and community report-back workshops. CWS thanks all of you, for your confidence in partnering with us. We hope that this report is useful in your own climate action, and in making migration safer and more beneficial for your communities. ■

## ACRONYMS AND ABBREVIATIONS

ASAL	Arid and Semi-Arid Lands (Kenya)
CC	Climate Change
CCA	Climate Change Adaptation
COVID-19	Coronavirus Disease of 2019
CWS	Church World Service
DRR	Disaster Risk Reduction
FGD	Focus Group Discussion
MARNDR	Ministry of Agriculture, Natural Resources and Rural Development (Haiti)
NGO	Non-Government Organization
RCDA	Rural Communities Development Agency (Georgia)
USD	United States Dollar
VSLA	Village Savings and Loans Association (Kenya)



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# EXECUTIVE SUMMARY

## KEY MESSAGES

- This study on climate change, adaptation, and migration – which drew on more than 200 interviews and 26 focus group discussions in five countries – reaffirms that **climate change is very much felt in people’s daily lives** in places where we work.
- Through its impacts on agriculture, rural livelihoods and disaster risks, the study also shows how **climate change is already a factor in migration** – though, not the only factor – in several of our partner communities.
- In some communities, like ones where CWS works in Cambodia and Haiti, **many people describe migration as a way of coping with slow-onset climate change impacts**, such as increasingly unpredictable rainfall, extreme heat and growing water scarcity.
- In two of the most extreme experiences shared in this study, both in Haiti, **climate change is described as a source of fear** and as a tipping point for displacement.
- In other places—such as communities where CWS works in rural Kenya—migration is not seen as a climate coping strategy, partly because of **perceptions that it has high costs, uncertain outcomes, or could lead people into difficult situations**.
- **Perceptions and actions related to migration vary** across locations, even among individuals within the same community.
- Across the board, **this study finds a strong desire for locally led climate adaptation (such as conservation farming, or expanded use of resilient seed varieties) to succeed**, to reduce the risk of displacement and to bring to life ‘the right to stay’ even in increasingly harsh conditions.
- Climate-impacted **families and communities are already putting their limited resources toward coping strategies**, and more must be done to ensure that additional resources are made available for locally led adaption and disaster risk reduction.
- In locations where migration is already one way of coping with climate change, **mobility can and should be considered in adaptation planning**, including expanded opportunities for safe and dignified migration within countries and across borders.
- As we redouble efforts to stop further human-made climate change, even amid the many urgent migration and displacement challenges our world faces, **we must plan now for new, humane responses to climate-related mobility – as the need for these will only grow in the future**.





## STUDY OBJECTIVES

CWS has long stood for the dignity and safety of people on the move, and for responsibly stewarding the gifts of our natural environment. In 2020, we began an effort to learn systematically about how perceptions of climate change, adaptation and migration are related, in five countries – Cambodia, Georgia, Haiti, Indonesia and Kenya – where CWS supports community-based activities.

This study aimed to: (1) improve planning for climate adaptation and disaster risk reduction activities, so that they reflect diverse and emerging needs; and (2) identify new ways to strengthen the dignity and rights of people for whom climate impacts are a factor in migration. Research was conducted alongside support to livelihoods adaptation activities, rather than as a stand-alone activity, to reflect accountability to impacted communities by extending resources toward adaptation needs that had already been identified.

## METHODOLOGY

The focus questions for the study were: (a) In communities feeling the impacts of climate change,

how do people perceive the costs and benefits of adapting in place, as compared to the costs and benefits of migration? and (b) how do these perceptions vary across gender, age groups, occupation, and lived migration experience? As this was a pilot study, we anticipated that we might reframe our initial questions or even identify new ones, as we moved forward in our learning process and engaged community partners in the research.

CWS designed qualitative tools – semi-structured interviews, focus group discussions, key informant interviews, and community report-back workshops – as a multi-country research team and with feedback from community partners. These qualitative methods were identified as viable approaches to strengthen systematic learning at the local level, and as methods that could be implemented within COVID-19 guidelines and with minimal technological requirements.

From February to May 2021, we conducted 211 one-on-one interviews and 26 focus group discussions, in a total of 30 communities in Cambodia, Georgia, Haiti, Indonesia, and Kenya.<sup>1</sup>

<sup>1</sup> CWS country teams led the research activities in Cambodia, Haiti, Indonesia and Kenya, with support from community partner organizations. In Georgia, research activities were led by the Rural Communities Development Agency (RCDA), a non-governmental organization that is a CWS partner in responding to climate change.

Interviews with 43 key informants were also conducted across the five countries. In June 2021, 12 community report-back workshops were conducted to share interpretations of the data, and to discuss potential recommendations with study respondents and local stakeholders.

## KEY OBSERVATIONS

In interpreting the qualitative data, we sought to identify patterns and perceptions behind the responses, rather than just inventory the responses themselves. Key observations include:

- In communities where CWS works, climate change is very much felt in people’s lives and is perceived to negatively impact rural production, household income, health conditions, and access to education.
- Slow-onset climate change impacts are contributing to or exacerbating human insecurity, particularly food insecurity, in several study locations. In one of the most extreme examples, a respondent described this in terms of subjective fear.
- There is strong desire for climate adaptation to succeed. In some places, people are already adapting agricultural practices or increasing climate resilience in other ways, with resources available and with modest external technical support.
- Migration is relatively common in communities where CWS supports climate adaptation. Climate change impacts, particularly on agriculture, are one factor in migration, though not the only factor. In at least one community, the cumulative effects of climate change were described as a tipping point for displacement.
- In some locations, migration is not widely perceived as a viable climate coping strategy, even where there is a high level of mobility in general. This may reflect high perceived costs of migration, and a sense of lacking the skills and assets needed to migrate in ways that would genuinely improve living conditions.
- There is awareness of threats that exist in migration – e.g., fraud, employer abuse, detention, even deaths in transit – particularly among people with lived experience of migration. Some respondents perceive migration as a viable option, even knowing about potential threats; for others, awareness of threats is a deterrence to migration.
- There is high demand for access to accurate information about migration and for opportunities to use this information in planning and decision-making.
- In some locations, remittances and investments by return migrants are contributing to climate adaptation. Generally, though, more could be done so that migration contributes positively to adaptation and resilience in communities of origin.

## SUMMARY OF COUNTRY FINDINGS

Location	Climate change perceptions	Migration perceptions
<b>Cambodia: Bavel district, Battambang province</b>	Hotter dry seasons, shorter wet seasons, and more frequent floods and storms were the impacts described by most interview respondents from Bavel district of Cambodia. Land has become dry and unproductive, and water quantity and quality have gone down. These changes have affected crops yields and contributed to poor harvests, and a large drop in income from agriculture. Many respondents are trying to cope by creating or finding an alternate source of water, and some indicate that they are simply “relying on nature.” To make up for income deficits, people are selling their land, or taking loans with high interest, and thus falling deeper into debt.	Many people in the study area migrate to the other parts of the country, or across the border to Thailand, for work opportunities. If successful, this helps them clear their debts and improve their family’s economic conditions. Unfortunately, there are cases where people return in worse condition than before migrating (e.g., being arrested and serving prison sentence, falling seriously ill after migrating). Some respondents linked this to a lack of awareness of risks in migration or of basic labor rights; and noted a need for information on – and access to - safe and regular migration. Because of concerns about family separation, many prefer in-place adaptation over migration, or migration within Cambodia rather than across borders.

Location	Climate change perceptions	Migration perceptions
<b>Georgia: multiple regions</b>	Respondents in Georgia described changes in temperature extremes, e.g., colder winters and hotter summers, more frequent and more intense rainfall, and drier conditions in some regions. Groundwater sources are drying up in some locations, and land is becoming less arable, while more intense rainfall is increasing the risk of flooding and landslides. Although many respondents are aware of adaptation strategies in relation to slow-onset impacts (e.g., new water management techniques or climate resilient crops), they described a need for more external support, including from local and national government agencies, in managing the risks of sudden-onset events.	Many study respondents are eco-migrants, who had relocated previously because of avalanches and landslides. Because of their past experiences, most eco-migrants have a very negative perception of migration, which they generally associate with displacement by a sudden disaster or involuntary relocation. In contrast, persons who had not experienced relocation or displacement are relatively more open towards considering migration as a climate coping strategy, particularly in areas where agricultural livelihoods are becoming more challenging and other work opportunities are limited. Without support to access safe housing or employment, though, people face risks of migrating into situations of vulnerability.
<b>Haiti: Northwest Department</b>	In Haiti, study respondents described climate change impacts in terms of unpredictable and irregular rainfall, extreme heat, and intensifying hurricanes. In addition, respondents from the island of La Tortue described sea level rise among the challenges faced. These changes are making the land dry and unproductive, and fishing more difficult, and these effects are contributing to reduced household income and food insecurity. Coping strategies include finding alternate sources of income (e.g., starting a small business), purchasing with credit or borrowing money through mutual solidarity or microcredit, and reducing consumption of food and water.	Migration – both internal and international – is considered by some respondents as a strategy of coping with climate impacts, though migration is more commonly perceived as a way of finding work or educational opportunities, or a response to human insecurity more broadly. Interviews reflected stories of successful migration (e.g., migrants who help their families back home by sending remittances), as well as stories of pain and loss (e.g., arrest and deportation, accident on the way). Respondents identified a need for improving access to information and support services for safe and regular migration, alongside increasing access to resources for climate adaptation and livelihoods diversification.
<b>Indonesia: Sigi district, Central Sulawesi province</b>	Longer dry seasons, unpredictable heat, erratic rainfall, and frequent flooding are ways in which Central Sulawesi respondents feel climate change. Flood risks partly reflect reduced capacity of rivers, and floods have left large amounts of sand in farmland, making agriculture difficult. Many respondents also described growing water scarcity, especially scarcity of clean water during dry seasons. Common strategies for adaptation in agricultural households include changing crop varieties, using more fertilizer, and working together to clean the sand from the farmland. People are also finding alternate sources of income, such as by starting small home-based businesses (mostly by women), doing casual labor, and shifting to fishing during the rainy season.	While there is a high level of mobility in the study area, mostly short-distance and for temporary or seasonal work, migration is generally not perceived as a way of coping with climate change, and there is a strong preference for in-place adaptation. Some respondents talked about risks and uncertainty that are generally associated with moving to a new place but, unlike other CWS study locations, they do not generally associate migration with threats of abuse or risk of accidents or illness. Interview responses show strong family ties and place attachment, which could also be a reason why many study participants do not consider migration as an adaptation strategy.

Location	Climate change perceptions	Migration perceptions
<b>Kenya: Kitui County</b>	People are feeling the impacts of climate change in terms of extreme heat, unpredictability of rainfall, change in land (drier, desert-like conditions) and increasing water scarcity. These impacts are directly affecting agriculture and the crop yield. Adaptation strategies include ensuring water access, adopting resilient farming techniques, and finding short-term casual labor to make up for the income deficit. People engaging in these strategies tend to consider them to be succeeding. A good number of respondents did not indicate any coping strategy, though, and more resources for adaptation – particularly access to water, climate-resilient agriculture, and new livelihoods options – are widely seen as needed.	Migration is quite common in the study area, including both rural-to-rural (in search of better farming land) and rural-to-urban migration (for work or educational opportunities). In most cases migration is perceived to bring positive economic results, particularly for younger people. However, most study respondents do not see migration as a viable option for themselves – for climate change adaptation or otherwise – because of its perceived high cost, unforeseen challenges and uncertainties, family separation, or strong place attachment. As climate conditions become increasingly harsh, support to adaptation and resilience for people choosing to stay will be critical in mitigating risks of food insecurity.

## RECOMMENDATIONS

The following recommendations are drawn from the interviews, focus groups, and community workshops; and from CWS experience in working with climate-impacted communities to adapt livelihoods, manage disaster risks, and increase resilience.

**A. Invest in adaptation and resilience in ways that recognize that staying in increasingly harsh climatic conditions is a difficult choice.** While we found that there is a strong desire for adaptation to succeed, it was by asking about both mobility and in-place adaptation that we heard clear demand for longer-term investments that are most needed to bring to life ‘the right to stay’:

1. **WATER.** Improving access to water, particularly for agriculture, is a prominent concern. This requires moving beyond customary irrigation and introducing new ways to harvest rainwater; improving access to technology; and mobilizing public investments to access groundwater sources, expand clean water distribution systems, and maintain community water infrastructure.
2. **RESILIENT AGRICULTURE.** Agriculture remains a key source of food, income, and social and cultural identity. There is demand for expanding climate resilient agriculture, including conservation farming and use of drought-resistant crops and hardier livestock breeds.
3. **COMMUNITY-BASED FINANCE.** Access to microfinance and working capital remains critical for expanding livelihoods beyond agriculture and other activities highly dependent on natural resources. It is particularly needed in places where climate-induced debt is a factor in migration, or where financial resources are needed to adopt or scale-up adaptation and disaster risk reduction technologies.
4. **PARTICIPATORY DRR AND LONG-TERM RECOVERY.** For early warning systems to be effective, information on risks and disaster risk reduction needs to be communicated in ways that are accessible and understandable. Community participation in recovery from sudden-onset events can ensure that long-term needs are addressed.
5. **CLIMATE ACTION.** While many respondents have some information about locally experienced climate change, there is little information available about national government plans or global climate action commitments. This can be addressed through national information campaigns and community information sessions, establishing municipal and regional climate resource desks, and

the digital divide so that online information is more accessible.

B. While resources and information for adapting to climate change may be available at national and global levels, less than 10% of climate finance currently reaches local communities.<sup>2</sup> We must **do more to reach families and communities who feel climate change most acutely** and to support community-based organizations and local governments that serve them:

1. Provide longer-term, multi-year funding support.
2. Ensure flexible funding that is adaptable to local contexts and to locally defined needs and resource gaps.
3. Keep reporting and accreditation processes simple for community-based organizations or local government units to access climate finance.
4. Prioritize and/or incentive activities that incorporate community participation, such as through participatory hazard mapping, climate vulnerability assessments, or mobility assessments.

C. In locations where migration is perceived to be a climate coping strategy, **incorporating mobility into adaptation planning and climate action** can expand – and make safer and more dignified – the options that are available:

1. Establish information centers that can make available accurate, reliably sourced information about migration, including requirements for safe, regular migration.
2. Link information to migration support services, such as skills training, financial planning, and other pre-departure planning; and provide information, incentives, and support services for the reinvestment of skills, savings, and remittances in climate adaptation.
3. Expand options for internal migration, in consultation with climate-impacted communities

- and local governments; and increase access to decent work, safe housing, and social protections for persons migrating internally.
4. Assist people to access government-issued identification and passports, which are required for accessing regular international migration; and which may add some protection in irregular migration.
5. Expand safe and regular migration opportunities that are accessible even by the poorest households.
6. Provide know-your-rights information and facilitate community discussions about staying safe in migration; and encourage well-informed communication about personal safety and rights in migration, across communities of origin, transit locations, and places of destination.
7. National government should increase their capacities to monitor the treatment of their citizens who migrate to other countries, and to safeguard human rights.
8. In locations where climate impacts are linked to high demand for safe and regular migration, support community groups to connect with trans-local and transborder efforts to improve migration governance and increase climate resilience.
9. Encourage research that reflects accountability to climate-impacted communities, including approaches in which climate-impacted communities, and people who are on the move because of climate change, are leading or co-leading research agendas and knowledge production. ■

<sup>2</sup> See: Soanes, M, Rai, N, Steele, P, Shakya, C and Macgregor, J (2017). *Delivering real change: getting international climate finance to the local level*. IIED Working Paper. IIED, London. Available at: [10178IIED.pdf](https://www.iied.org/10178IIED.pdf).



**CHAPTER 1**

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# Introduction

## 1.1 BACKGROUND

As an organization rooted in faith, CWS believes that all people deserve to lead lives of dignity, wherever we find ourselves. We believe that creation is sacred, and we are called to steward responsibly its gifts to us and to future generations. In the context of climate change, we live out our mission by increasing access to information, skills, technology, and financial resources needed by climate-impacted families and communities to adapt to slow-onset changes, manage disaster risks, and increase resilience.

While many people desire to remain safe, secure, and thriving in their home communities, migration has always been part of human history, and is a fact of life in many places where CWS supports climate adaptation and disaster risk reduction. We have heard from community partners that climate change is one factor in people's decisions to migrate; and that sometimes migration is the only option available for people to support themselves and their families. Yet migration, just like in-place adaptation, requires resources, and involves uncertainty. As climate change impacts livelihoods and erodes asset bases, it may become more difficult for vulnerable people to move out of harm's way, even as the costs and risks of adapting in-place also increase.

According to the [6th Assessment Report](#) by Working Group 1 of United Nation's Intergovernmental Panel on Climate Change (IPCC), human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years. This is already resulting in changes such as extreme heat, heavier rainfall, drought, and ocean warming across the globe -- changes that will become even more intense and frequent if urgent climate action is not realized.

Projection models used by The World Bank's 2018 [Groundswell](#) report suggest that significantly reducing greenhouse gases, coupled with robust support to climate adaptation and inclusive socio-economic development, could reduce the future number of climate-displaced persons by nearly a factor of five. Still, the same report projects that in best case scenarios for climate action, 31 million people in Africa, Latin America and South Asia will be displaced internally by slow-onset climate change, by the year 2050.

CWS has long stood for the dignity and safety of people on the move. Even as we redouble efforts to stop further human-made climate change, and even amid the many urgent migration and displacement challenges that our world faces, it is only prudent that we plan now for new, humane responses to climate-related mobility – as the need for these will only grow in the future.

## 1.2 SCOPE AND OBJECTIVES

In 2020, we began an effort to learn systematically about how climate change, migration and adaptation are related, in five countries – Cambodia, Georgia, Haiti, Indonesia and Kenya – where CWS and partner organizations support climate resilience activities. Building on our relationships with partner communities, this pilot study aimed to improve planning for adaptation and disaster risk reduction, so that CWS activities reflect diverse needs and emerging demand. It also sought to identify ways to strengthen the safety, dignity, and rights of people for whom climate impacts are a factor in migration.

Before starting on this project, we were aware that many partner communities increasingly feel the impacts of climate change in their lives, and particularly in agriculture and land-based livelihoods. We were also aware that some forms of both adaptation and migration are taking place in program locations, though not necessarily whether or how these are related.

In considering how to learn more systematically about these trends, we developed an initial learning framework that was informed by a brief review of literature, starting with the UK Government's Foresight report *Migration and Global Environment Change*; reports from the Where the Rain Falls research initiative; research from IOM's MECLEP<sup>3</sup> project; and the World Bank's *Groundswell* report. Key observations from these and other studies include:

- Typically, climate change is not a sole factor in migration. Climate change intersects with other social, political, environmental, and economic factors, to affect migration and displacement ([Foresight 2011](#); [Boas et al. 2019](#); [Ferris 2021](#); [Ajibade et al. 2020](#); [Durand-Dulacre 2021](#); [Weerasinghe 2021](#)).

<sup>3</sup> [IOM's Migration, Environment and Climate Change: Evidence for Policy \(MECLEP\) project.](#)

- Slow-onset climate change erodes communities' ability to manage natural hazards (e.g., drought, erosion, desertification, salinization) and decreases the ability to adapt in place and manage risks over time ([Foresight 2011](#); [Warner et al. 2013](#); [Warner and Afifi 2014](#); [Weerasinghe 2021](#)).
- Migration can be an adaptive response to climate and environmental change, in or from locations where environmental degradation is negatively affecting livelihoods that are dependent on land or other natural resources ([Foresight 2011](#); [Ober 2014](#), [Warner and Afifi 2014](#); [Melde et al. \(eds.\) 2017](#); [Riguad et al. 2018](#); [de Sherbinin 2020](#)).
- The more livelihood assets an individual or family has, the more risk management options will be available, and the more likely that migration will improve household resilience ([Foresight 2011](#); [Warner and Afifi 2020](#); [McLeman 2020](#)).
- Environmental changes can decrease asset bases and leave households and communities with fewer resources, at a greater risk of becoming 'trapped' – i.e., involuntarily immobile in the face of adverse impacts of climate change ([Black et al. 2011](#); [Foresight 2011](#); [Warner and Afifi 2014](#); [McLeman 2020](#)).
- Migration may lead people to face new climate or environmental hazards in places of destination ([Black et al. 2011](#)).
- Most climate-related migration takes place within countries and across relatively short distances; and is not necessarily permanent nor linear ([Riguad et al. 2018](#); [Boas et al. 2019](#); [Ferris 2021](#); [Zickgraf 2020](#); [Durand-Delacre 2021](#)).
- While remittances are more commonly used for immediate needs by relatives in communities of origin, they may also help in coping with or adapting to climate change, such as through investing in small businesses or education. Migration can also facilitate skills transfer, which in turn may contribute to climate adaptation ([Warner and Afifi 2014](#); [Riguad et al. 2018](#); [Zickgraf 2020](#)).
- Perceptions and actions regarding migration reflect both people's aspirations and their capabilities to be mobile; and may reflect subjective or intangible factors such as attitudes toward risk, place attachment, or individual personality traits ([de Haas 2021](#); [Hagen-Zanker and Hennessy 2021](#)).

With this as our starting point, CWS country teams and partners were invited to frame research questions that would be relevant to the specific contexts where our program activities are taking place. Based on responses, the focus questions for this pilot study were initially framed as: (a) In communities feeling the impacts of climate change, how do people perceive the costs and benefits of adapting in place, as compared to the costs and benefits of migration? and (b) how do these perceptions vary across gender, age groups, occupation (i.e., livelihood), and/or lived migration experience? We intended to consider “costs and benefits” in a broad sense – not only economic costs and benefits, but also other ways that people may feel positive and negative impacts in their lives (i.e., “pros and cons”).

### 1.3 LIMITATIONS

This was a pilot study and we anticipated that we might reframe our initial questions or even identify new ones, as our learning process moved forward. For example, we started with an intention to collect and compare financial cost perception data, for both in-place adaptation and migration (see Appendix I Interview Guide, questions 31 and 41). We soon realized that the figures offered by interview respondents were generally on-the-spot estimates or, more typically, people shared a qualitative response or simply indicated that they did not know this information.<sup>4</sup> This encouraged us to focus our analysis more on perceptions of non-economic factors, and to consider perceptions of financial costs as part of broader access to information about migration and in-place climate adaptation.

As a qualitative study, we anticipated that our findings may be more illustrative than conclusive, particularly in making observations across different locations. Additionally, actions and decisions related to migration are complex and influenced by many factors, and direct questions about perceptions and experiences may not lead to the real response or may reveal only a partial perspective. In interpreting the qualitative data, we sought to identify patterns and perceptions behind the responses, rather than just to inventory the responses themselves.

<sup>4</sup> In response to question 41, about perceived financial costs of migration, 141 out of 211 respondents (about 67%) did not provide a figure; they either gave a qualitative response such as “very expensive” or said that they did not know.

By involving multiple staff and using team approaches to name and interpret observations from the data, and then engaging community members directly in report-back workshops, we aimed to compare interpretations and ultimately to increase the robustness of our findings. This involved multiple translations of questions, responses, and analyses, to and from national languages (and sometimes also local languages) and English, the common working language of our project group. Our teamwork approach sought to triangulate understandings of both specific terms and broader perceptions, to mitigate against information and meaning being 'lost in translation'.

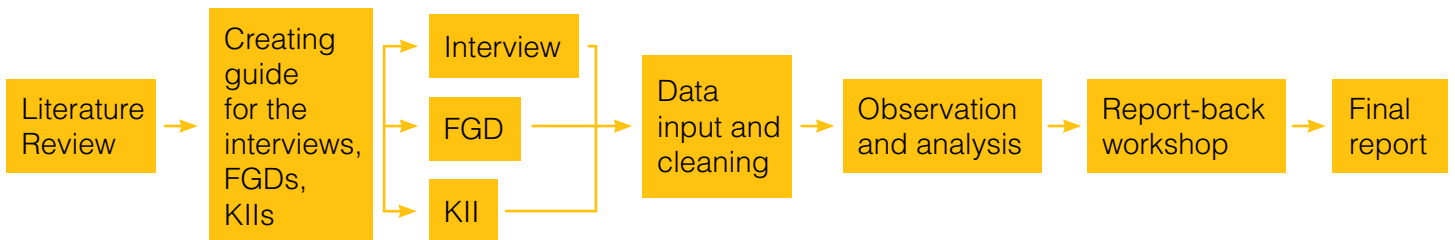


**Figure 1:** The study locations – Cambodia, Georgia, Haiti, Indonesia and Kenya

The time required to conduct interviews and focus group discussions varied across study locations. In some places, time estimates that we used for planning was not sufficient to complete a given activity. This left some questions unasked. In both the focus groups and the interviews, some respondents (and possibly some enumerators) interpreted certain questions differently than we had intended. In some cases, we were able to clarify data gaps; in others, a few questions remained unanswered.

## 1.4 SELECTION OF STUDY LOCATIONS

We organized the pilot study to be conducted alongside support to livelihoods adaptation



**Figure 2:** Study methodology

<sup>5</sup> Study activities in Georgia were led by Rural Communities Development Agency (RCDA), a long-standing CWS partner in the country. This is the only location where direct support to livelihoods adaptation and climate resilience was not built into the pilot study, although RCDA extends support to communities through other program activities.

<sup>6</sup> In its contributions to the Fifth Assessment Report of the IPCC, Working Group II (on Adaptation) defines constraints as “factors that make it harder to plan and implement adaptation action,” for example, lack of required resources or gaps in institutional frameworks; whereas limits to adaptation reflect the point at which “no adaptation options exist, or an unacceptable measure of adaptive effort is required, to maintain societal objectives or the sustainability of a natural system.”

## 1.5 METHODOLOGY

From October to December 2020, CWS designed qualitative research tools with participation from its country teams and feedback from community partners. These included: (a) semi-structured interviews; (b) focus group discussions; and (c) key informant interviews (KII) with local government officials and customary leaders. These methods were identified in discussion with CWS country teams and community partners, as viable approaches to pilot systematic learning at the local level, and as methods that could be implemented within COVID-19 guidelines and with minimal technological requirements.

Data collection began in February 2021, with **one-on-one interviews**. Interviews were conducted by local enumerators who live in the study locations. CWS provided a remote training to enumerators before interviews began, to orient them to the project's objectives, the interview tool content and sampling approach, and to human subjects' protections and other standards (e.g., confidentiality, informed consent) that should be reflected. Interviews took place over several weeks, and CWS staff (and RCDA staff in Georgia) communicated with enumerators throughout this period to offer guidance.

Interviews were recorded in national languages,<sup>7</sup> and then were translated into English. Enumerators

were advised to transcribe as much of the interview as possible, i.e., record verbatim the words that respondents used, rather than summarizing responses. In some locations, enumerators and/or respondents interpreted certain questions differently than CWS had expected. Where possible, we circled back to enumerators to clarify these responses and to fill in data gaps. The responses were then organized on spreadsheets for analysis.

Drawing on lessons from conducting the one-on-one interviews, we updated the focus group tool in March. The revised tool included discussions questions on three themes: (a) climate change perceptions and adaptation strategies; (b) personal experiences and perceptions of migration; and (c) perceptions of positive and negative impacts of migration within the community, including in relation to climate change adaptation. This third theme was included as a way of exploring whether and how mobility could be incorporated into climate action planning, through leveraging its positive impacts and/or mitigating its negative impacts, given the extent of mobility identified in the one-on-one interviews. CWS drew on the TransRe Project's *Migration for Adaptation Guidebook*, in developing this third set of focus group questions ([TransRe 2018](#)).

**Focus groups** began in Georgia and Indonesia in March, and were conducted in Cambodia, Haiti and Kenya in April. CWS and community partners followed all local COVID-19 guidance in conducting

Country	One-on-one interviews	Focus group discussions	Key informant interviews	Community report-backs
Cambodia	40 people from 4 villages	4 sessions in 4 villages	4 key informants from 4 communities	4 workshops with 118 participants
Georgia	31 people from 12 communities	6 sessions in 5 regions	25 key informants from 10 communities	4 workshops with 101 total participants
Haiti	60 people from 7 communities	8 sessions in 7 communes	5 local government officers in 3 communities	1 workshop with 22 participants
Indonesia	40 people from 4 villages	6 sessions in 3 villages	7 key informants (4 village leaders, 3 government officers)	4 workshops with 52 total participants
Kenya	40 people from 2 communities	2 sessions in 2 communities	2 local government officers in 2 communities	2 workshops with 32 total participants
Total	<b>211</b> people from <b>30</b> communities in <b>5</b> countries	<b>26</b> sessions in <b>21</b> communities	<b>43</b> key informant interviews	<b>12</b> workshops with <b>325</b> total participants

**Table 1:** Overview of research activities

<sup>7</sup> In Indonesia, some interviews were conducted through interpretation between Indonesian and Kaili, a language spoken locally in Central Sulawesi.

focus groups. Country teams in Cambodia, Georgia and Indonesia facilitated focus group discussions directly. In Kenya, staff were not able to travel to Kitui county because of COVID-19 restrictions and provided remote guidance to facilitators in organizing and conducting the focus groups.

**Key informant interviews** were conducted where possible, to provide a starting point for comparing how local officials perceive adaptation and migration trends, with the perceptions from interviews and focus groups. A standard set of KII questions were used across the five countries.

In June, CWS organized **community report-back workshops**, to share and discuss findings in locations where interviews or focus groups were conducted. The workshops provided: (a) general background on CWS and the pilot study; (b) observations from across the five pilot study locations; and (c) observations and potential recommendations specific to each location. Workshop participants were asked whether the findings presented seemed accurate and complete; which findings or recommendations seemed most important; who should be made aware of information collected; and whether there are ways that community groups or local government can use this information.

At the start of the project, CWS reviewed available literature on climate change impacts and migration trends in Cambodia, Haiti, Indonesia, and Kenya; and RCDA reviewed available studies in Georgia. CWS country teams also compiled study area profiles to summarize administrative data, where available, related to local climate and climate change. These included: location (map); area size and population; rainfall and temperature data; recorded changes in climate and environmental conditions over the past 10-20 years; and recorded disasters over the past 10-20 years.<sup>8</sup> The literature reviews and study area profiles were used to contextualize findings from interviews and focus groups, and to connect our pilot study with a larger body of migration research and climate data.

## 1.6 RESPONDENT SELECTION AND HUMAN SUBJECTS' PROTECTIONS

CWS used a purposive sampling approach for

the one-on-one interviews. This intended for interview respondents to reflect a mix of gender, age, previous migration experience, and livelihoods (e.g., farming / non-farming) or asset bases (e.g., own land / landless). This sampling strategy was the result of collective discussion among the CWS research team; and was implemented with support from community partners. In organizing the focus groups, we aimed for participants to reflect at least one common characteristic, e.g., gender, age, occupation or livelihood, or previous migration experience.

We applied human subjects' protection safeguards in the pilot research, as outlined in an internal CWS guidance note on responsible use of data. CWS staff reviewed these safeguards with interviewers in enumerator training; and safeguards were described in the interview and focus group tools. Interviewers signed confidentiality statements and were instructed that all personally identifying information about respondents (e.g., names, phone numbers) must be kept confidential.

Interviewers were instructed to conduct interviews in safe settings, where respondents would feel comfortable answering the questions; and to respect the emotional well-being of respondents, especially if questions were related to difficult memories or traumatic experiences. Informed consent of respondents was obtained before interviews and focus group participation.<sup>9</sup> Respondents were informed that they may freely decide not to answer any questions that make them feel uncomfortable. A local CWS contact number was provided for respondents to share any concerns about the conduct of research activities. All local guidelines and regulations related to COVID-19 were followed throughout this study.

## 1.7 REPORT STRUCTURE

This report summarizes the observations and findings from the pilot study. First, this Introduction chapter provided an overview of the objectives, methods, and limitations of this study. In the five following chapters, observations from each of the country locations for the study are

<sup>8</sup> While 30-year periods are typically used to assess climate changes, our research tools used 10-20 years to make for easier recall by interview and focus group respondents. (See appendices I and II.)

<sup>9</sup> In one focus group in Haiti, invited participants (young adults) declined to provide informed consent. They were thanked for their time, and the discussion did not proceed.

presented and discussed. These five “country snapshots” each include a brief overview of the study areas, followed by observations from the interviews, focus group discussions, and key informant interviews. The observations are summarized at the end of each chapter, followed by recommendations that came from the interviews, focus groups, and community workshops. Finally, a Conclusions chapter summarizes the general observations and findings, and offers recommendations for relevant local and national government bodies, NGOs and community-based organizations, funders, and other stakeholders. Our hope is that the findings and recommendations will help communities in their locally led adaptations and contribute to future climate action and community-driven research, in the study locations and beyond. The interview and focus group discussion guides used for this study are included in the appendices.

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**CHAPTER 2**

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# Cambodia

## 2.1 INTRODUCTION

As part of its Promoting Better Lives in Rural Cambodia initiative, CWS is working with 60 families in two communities (Preah Srae and Lor Eth villages) in Battambang province to increase resilience to climate shifts, including less predictable rainfall and prolonged dry spells. Activities focus on diversifying agriculture practices and small business opportunities, including through home gardening. CWS is also working with village authorities and community water management committees to rehabilitate and improve two canals, so that families have year-round access to water for growing rice and vegetables.

### 2.1.1 BACKGROUND

**Climate change impacts and hazards:** Climate change impacts in Cambodia include shorter wet seasons, increased temperatures, and longer and more arid dry seasons. Rainfall distribution is shifting two annual rainfall peaks, toward one single peak (Parsons and Chann 2019), and low precipitation is becoming the norm (Sigelmann 2020). Exposure to sudden-onset disasters, such as storms and landslides, is increasing and climate models project more frequent drought and flooding (Bylander 2016; Oudry et al. 2016). Perceptions of climate change can vary within the same location, depending on how livelihoods are impacted (Parsons and Nielson 2021).

Increased dryness in northwestern Cambodia has reduced crop yields, including rice staple crops (Bylander 2016). Families and communities with limited options or capacity to adapt tend to focus on short-term risk management and damage control (Bylander 2016; Quimbo et al. 2019). While Cambodia has an extensive system of canals, a 2009 study by Cambodia Centre for Study and Development in Agriculture (CEDAC) found that only 6% had a water user committee in place (Parsons and Chann 2019).

**Migration trends:** A 2012 national study found that internal migration accounted for about 70% of all migration from rural areas. Of this, more than 80% was rural-to-urban, largely to the capital Phnom Penh (Ministry of Planning 2012). Internal migration increases demand for urban infrastructure and services, though does not necessarily improve access to assets in communities of origin (Oudry et al. 2016). Nearly 90% of international migration is to

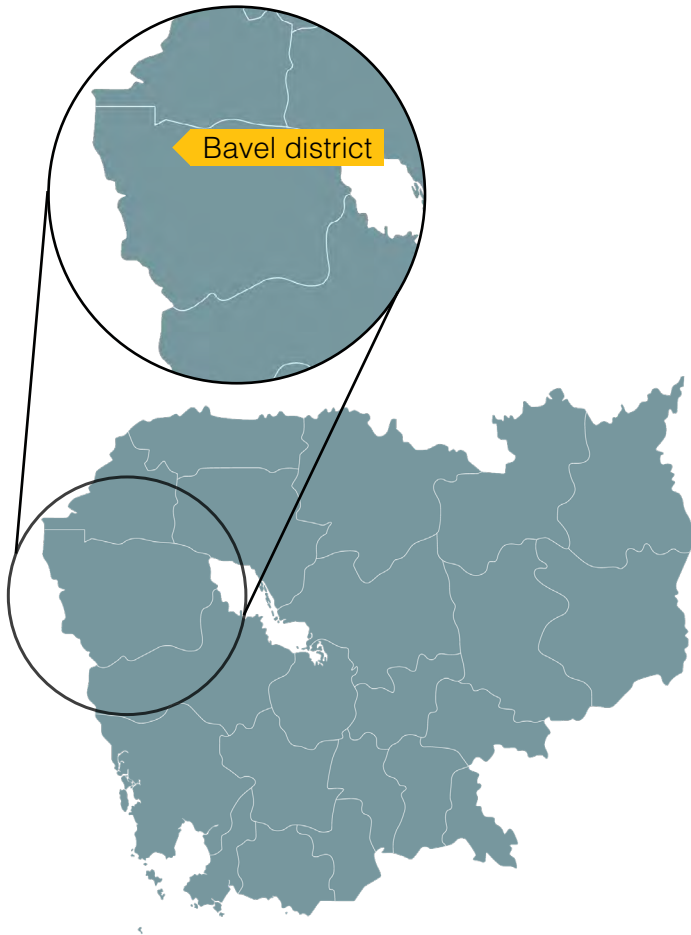
neighboring Thailand (Bylander 2016; Oudry et al. 2016), and international migrants tend to have less formal education than internal migrants (Ministry of Planning 2012). Migration may initially be temporary, and pursued alongside other adaptation strategies, and over time become permanent (Oudry et al. 2016).

**Climate as a factor in migration:** Migration from rural areas is also driven by changes in agricultural systems, which have made farming less labor intensive (Parsons and Nielson 2021). Food insecurity, household debt, poor harvests, impacts of development projects, limited employment opportunities, and family ties are among other migration factors, particularly in rural areas (Jacobsen et al. 2019; Bylander 2016). Migration may be a coping mechanism, when other in-place adaptations – such as selling assets or borrowing money – are not enough for a household to meet its needs (Oudry et al. 2016). One recent study estimated that climate change impacts account for about two-thirds of all economic impacts reported by rural respondents (Jacobsen et al. 2019). Another found that international migration from Cambodia to Thailand is associated with drought, low rainfall during the rainy season, and climate-induced crop loss (Bylander 2016).

**Migration and adaptation:** Remittances are a source of financial capital that farming families can use to adapt to climate impacts, such as through increasing access to reliable water sources. One study found that migration is more likely to increase the resilience of families who were better off initially, in terms of geographical proximity to water or ability to afford water access costs (Parsons and Chann 2019). Other studies found that about 40% of remittances were used to repay debt; and that the most economically marginal households (i.e., those not farming at all) are less likely to have migrants than better off households (Jacobsen et al. 2019; Parsons and Chann 2019; Parsons and Nielson 2021). One study found that households in areas with greater access to credit and technical skills training, are more likely to have migrants than families in locations that lack these support services (Bylander 2016). In places where migration already occurs, policies have not generally factored mobility trends into resilience planning; and local government officials may see migration as a negative outcome that should be reduced, and frame responses as “a way to minimize out-migration” (Bylander 2016; Oudry et al. 2016).

### 2.1.2 ABOUT THE STUDY AREAS

The pilot study took place in four villages of Bavel district. Bavel is located about 54 km from Battambang provincial town (Northwestern Cambodia) with a total area of 987 square kilometers, equivalent to 92,300 hectares.



**Figure 3:** Map of Bavel district in Battambang province.

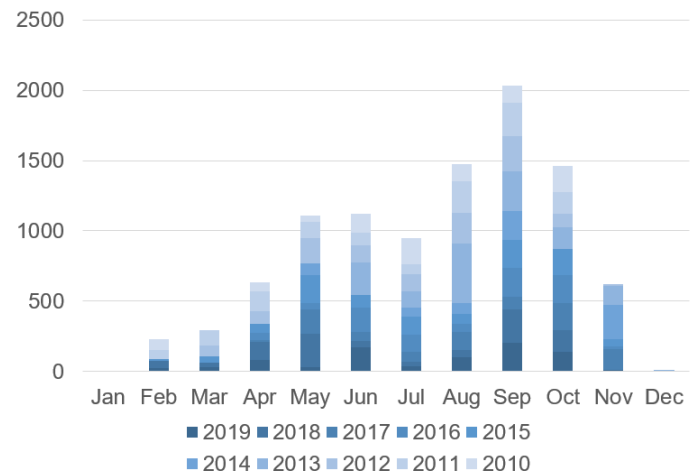
Community	Population / Households	Livelihood
Boeng Sangke	985 / 58	Agriculture: 76% Non-agriculture: 24% Average income: about \$1,000 per family per year.
Boeng Snuol	953 / 59	
Boeng Areak	460 / 53	
Kob	473 / 46	

**Table 2:** Population data of the study villages in Cambodia  
Source: Bavel District Police Station, March 1, 2021

Bavel district is both upland and flat, with the Mongkul Borei river flowing across its north and northwest. Most of the population is engaged in agriculture. Other minor occupations include factory work and small family businesses.

### 2.1.3 CLIMATE

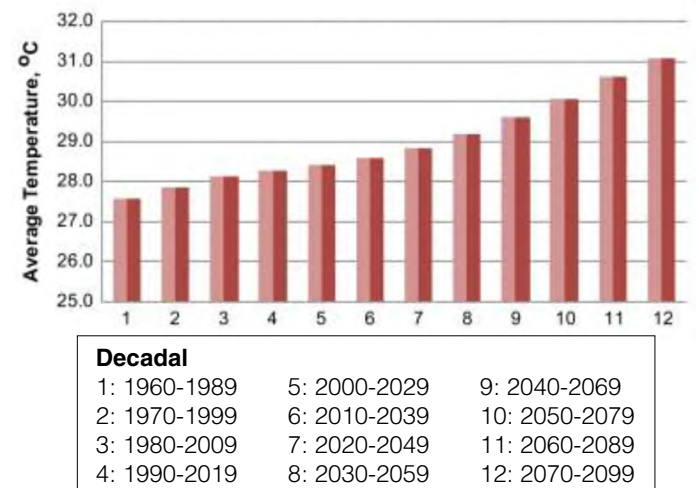
Cambodia's tropical monsoon climate is historically characterized by a rainy season and a dry season. The rainy season, which typically lasts from May to early October, would account for 90% of annual precipitation. The dry season, from November to April, brings drier and cooler air from November to March, and then hotter air in April and early May. Government data, however, shows that rainfall patterns and timing of peak rains are becoming somewhat less predictable.



**Figure 4:** Monthly rainfall in Bavel district (mm), 2010-2019  
Source: District of water resource and meteorology (Bavel district, Battambang)

Maximum temperatures are common before the start of the rainy season and may rise to more than 38°C. A regional climate change model used by the Southeast Asia START Regional Center (SEA START RC) projects an increase in average temperatures, and a faster rate of increase after the year 2030 (Thoeun 2015):

#### Average Temperature by Using Precis Model from 1960-2009



**Figure 5:** Average Temperature in Cambodia by using Precise Model from 1960 to 2099  
Source: Source: SEASTART RC, 2009, in Thoeun 2015.

### 2.1.4 RECENT DISASTERS

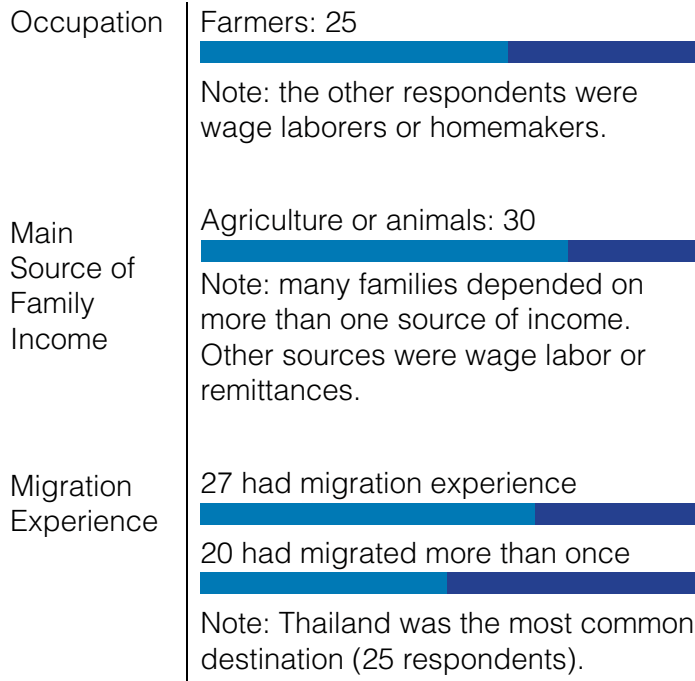
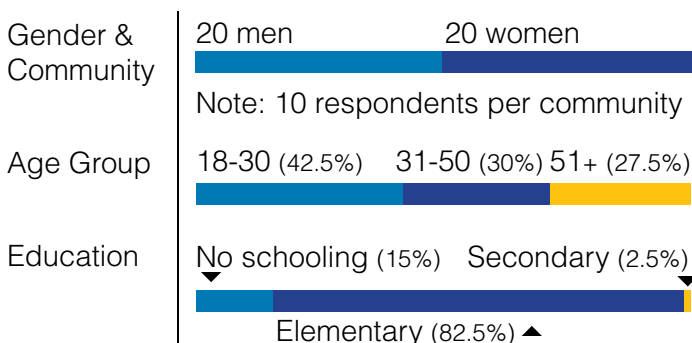
Cambodia is highly vulnerable to climate-related disasters, such as floods and droughts. Inadequate physical infrastructure and early warning systems, exacerbate the risks associated with changing weather patterns. Meanwhile, farmers face seasonal challenges of droughts in the dry season and floods due to heavy rains in the wet season. Rainfall patterns have been shifting, with longer droughts, short rainy seasons, and occasional flash floods.

Type of Disaster	Date	Brief Description of Damages
Typhoon (tropical cyclone)	A total of 9 times in 2020	<ul style="list-style-type: none"> <li>Affected and damaged 94 houses</li> </ul>
Flood	A total of 2 times in 2020	<ul style="list-style-type: none"> <li>999 families and 3,841 people were evacuated.</li> <li>Affected 17,490 hectares of rice fields, damaged 6,344 hectares.</li> <li>Affected 8,808 hectares of industrial crops, damaged 7,633 hectares.</li> <li>Affected 326 of cows and pigs</li> </ul>
Drought	In 2020	<ul style="list-style-type: none"> <li>Affected 7,623 hectares of rice.</li> <li>Water shortage for consumption and drink and for livestock rearing and cultivating.</li> </ul>

**Table 3:** List of recent disasters in Cambodia

## 2.2 OBSERVATIONS FROM THE INTERVIEW DATA

### 2.2.1 OVERVIEW OF THE SAMPLE



### 2.2.2 PERCEPTION OF CLIMATE AND ENVIRONMENTAL CHANGE

Most interview respondents perceive climate change in terms of hotter summers, more unpredictable weather, irregular rainfall, floods, and longer dry seasons. Respondents observe that water sources, such as ponds and rivers, have been drying up in recent years. Land has become dry and unproductive, forest cover is decreasing, and there are more harmful insects. These changes have impacted crops yields and contributed to poor harvests, food shortages, and a large drop in income from agriculture. They are also perceived to affect the health of both humans (e.g., colds, dengue, stomach diseases) and livestock.

### 2.2.3 PERCEPTION OF ADAPTATION AND COPING METHODS

Most respondents (30 persons, or 75% of those interviewed) have been trying to cope by creating or finding an alternate source of water, such as digging a pond or making an existing pond deeper, storing rainwater or water from other sources for the dry seasons, or even buying water for consumption. This suggests that water scarcity is a common and significant concern. However, when asked directly about their biggest concern, only a few respondents mentioned water directly. Instead, most people described concerns with food shortages, decreased income, and diseases – all of which could be directly related to increasing water scarcity.

One respondent, a 25-year-old woman, described extreme heat and water scarcity as part of her family's experience: *"The weather is very hot, leading children to get sick and animals died."* Her husband earns income by transporting casava, but lately has not been hired for work, and she expressed concern about food shortages and that available work allows them to *"earn for a day only."* Her family spent USD \$700 to buy mango trees and excavate two ponds to improve their water supply. In the meantime, her family is re-using water: *"We save water by taking shower and keep the remaining water to water crops, wash clothes and for toilet use."*

Of the 10 respondents who did not mention water supply improvements as an adaptation or coping method, most indicated that they are simply *"relying on nature"* or otherwise did not name any specific coping strategy. Persons who had migrated previously described a somewhat more diverse range of adaptations or coping strategies than respondents who had not migrated, for example, *"hire pumping machine for watering the farmland."*

One respondent, a 32-year-old woman who had previously migrated to both Thailand and Malaysia, explained that her family has invested in improving water access but that this has added to their debt burden: *"[We] have to purchase water for daily consumption, and hire a pumping machine for watering the farmland. Pump water to water the farmland would not help for all times, because the canal remains [with] less water."* From this experience, she has *"more concern about doing a farm [and] decided to rent all farmland to others because [I] could not afford to run it myself."* She went on to describe debt as a reason that she would migrate again for work in another country.

During the COVID-19 pandemic, people could not migrate because of lockdowns, and many migrant workers returned after losing their jobs. Some respondents indicated that they are raising poultry to cope with this situation, while they wait for the next opportunity to migrate. When talking about their biggest concern with staying in the community, non-migrants named climate hazards somewhat more frequently (7 of 13 respondents), including drought, flood, extreme heat, strong winds, and water scarcity. Among respondents who had migrated previously, debt and lack of jobs and income-generation opportunities were named as main concerns. Both groups named illness and inability to pay for medical costs as a concern.

## 2.2.4 PERCEPTION OF MIGRATION

Informal and unofficial routes of migration into Thailand were described by interview respondents, who have used these to seek work and income. Some had borrowed money to pay for the costs of migration, and some spent from their savings. In some cases, a broker paid for the transport and other costs, meaning that these respondents took on debt to cover these migration expenses. Ten respondents migrated only for a short term, spending three months or less where they were working. Another 12 spent about a year in migration, and five worked and stayed at destinations for more than one year. The longest time spent in migration by any respondent was 10 years. Perception of migration appeared similar between men and women – both genders migrated in similar numbers, and family expectation for migration looked similar in both groups. In terms of age, people under 50 appeared to be more positive towards migration, compared to people over 50.

All the 27 respondents who have migration experience said they migrated to work, earn money, and support their families. Debt featured as a primary or secondary reason for migrating, for more than a dozen respondents. One 18-year-old woman, whose family raises livestock for their livelihood, noted *"there is no job in hometown"* and that she had migrated previously for that reason, and *"to improve the family economy and repay the debt."* While she and her brother have both gone to Thailand for work, her family is also investing in climate adaptations, *"to restore the family pond, select resilient crop seeds, plant the tree for animals' yard, and collect rainwater for consumption."* She perceives these adaptations as helpful in managing climate-related risks, though she adds, *"Migration is good because it would earn money for support family. If the drought still occurs and [there is] less water for agriculture, the livelihood will be harder."*

Of the 27 respondents who had migrated previously, 21 reported positive changes from migration, such as paying debt, managing children's school fees, or saving small amounts of money. Many (18 of 27) have considered migration to cope with the effects of climate and environment change. One respondent, a 50-year-old man who farms for a living, indicated that *"the weather is not good to do farming, and health conditions are not good, that's why [I] think to move to live in another*

place.” He had migrated twice before to Bangkok and earned money to pay off debt and complete building his home. Now, though, he would prefer to move to Phnom Penh, and return monthly to Bavel.

In addition to positive changes, respondents also described negative experiences in migration. Several mentioned the word “danger”, or described threats that they had experienced, such as xenophobic harassment, withheld wages or other employer abuses, or no access to health care in case of sickness. Some expressed concerns about being far from their family or having no one to take care of their family in their absence; or noted that the costs of migration can increase debt.

Some responses suggested a preference to stay closer to home, or a perception that migrating within Cambodia would be better than migrating across borders, if unable to stay and work in communities of origin. A 21-year-old man who had previously worked in Thailand, indicated that he is considering migration because he simply “cannot do agriculture.” He perceives migration is an option despite also knowing it “can be dangerous or [migrants can] get sick.” Still, his preference would be to remain in or close to his home community: “Staying at homeland and finding a job locally is better than going to work far away from home, as we can take good care of family and also won’t be insulted by someone.” Another respondent cautioned, “[I] don’t recommend anyone to work in Thailand, it’s so difficult to live as we don’t know their language and can be cheated by the boss, especially can get severely sick when coming back home.” Concerns about family separation were expressed, both by respondents who had migrated previously and those who had not.

Most respondents indicated that they access information on migration from family members, relatives, neighbors, and friends. Some indicated that they know about passport and work permit requirements. In responses about the perceived cost of migration, most people described only travel expenses; fewer respondents mentioned broker payments, which are usually made on credit.

As for whether they would recommend migration to others, respondents with previous migration experience tended to qualify their recommendations, for instance, they would recommend migration to others who have no farm income and who are in good health. One 25-year-old woman, who had once accompanied her mother

to Thailand for three years, described migration as “good [option] if we get a good job and are well paid. Those who own the farmland should stay in homeland or seek seasonal farm work to earn more income. But those who do not have farmland should migrate to work in Thailand for family income and to improve life.” Another respondent, a 27-year-old woman, perceives that “working in Thailand is better, at least we can get more income. If we go with many friends, it is fine because we can take care of each other and can save money to settle debt.”

Perceptions that staying in Cambodia is a better option reflect a mix of place attachment, sense of family responsibilities, such as caring for children and/or elderly relatives, and concern over threats faced in cross-border migration. “Migrating doesn’t mean it’s always good,” cautioned one respondent, “it can be bad if we meet the bad employer.” Another said they would recommend internal migration because “if [we] migrate to work somewhere in nearby province it is safer than crossing the border to other country, because [we] may lose in trap and [face] danger.”

## 2.3 OBSERVATIONS FROM THE FOCUS GROUP DISCUSSIONS

Four focus groups were organized in Bavel commune, with participants drawn from the same villages as were the one-on-one interviews. These four discussions all generated similar observations about climate change impacts. Participants described irregular rainfall and increased heat, which are contributing to drought and water scarcity and in turn impacting agriculture (mainly rice farming). When rain comes, it is sudden and more intense, and causes floods and damages crops. Communities are affected by frequent storms and heavy rain, for which they often do not get adequate warning. In several groups, participants emphasized the importance of better risk communication from local authorities; and one group pointed to the need for an early warning system for storms and heavy rain.

Descriptions of climate adaptation varied across the four community groups. In one group, participants said that they are reducing water consumption to cope, while also creating

alternate water sources by digging ponds and drilling pump wells. People have tried to plant crops by following weather forecasts but, in the group's opinion, these efforts have failed. In another discussion, participants described changing crops to get a better yield, and are willing to explore more options through adaptation support and training. In a third group, discussants shared similar perceptions of climate change as in the other groups, though they described fewer strategies for coping with climate change impacts (e.g., drink water when it is hot, protect family during storms.). There is some information available on the impacts of climate change – through government and non-government programs, and social media – but not everyone seems to have access to it.

Focus group participants described migration as a coping strategy by farmers who have lost their crop yields, and who lack resources to adapt to water scarcity or who have taken on debt in efforts to adapt agricultural practices; and by landless persons who have little or no work opportunities in the community. Most prefer to migrate to Thailand, where wages are nearly double that in Cambodia. While migration is perceived as a way of accessing work opportunities, it is also known to have financial costs, and some people must borrow money to make the move.

Several focus groups discussed risks involved in cross-border migration and raised the need for more information on regular migration pathways, and awareness raising about migration more generally. One group described unplanned movement as causing problems, particularly at the border with Thailand but also for persons migrating within the country. Participants in another group shared examples of people facing challenges in migration and requiring money from their parents, instead of sending remittances back to their families.

Groups described some ways that migration can help people in origin communities, such as through remittances, sharing new knowledge or skills, or even building new community facilities. Generally, focus group participants suggested that more and better work opportunities within their communities could reduce the negative

impacts of migration, by reducing the need for migration itself.

## 2.4 KEY INFORMANT INTERVIEWS

Four key informants, one from each community in the study, were interviewed in April 2021. They indicated that local NGOs are leading community awareness on climate adaptation, with some government support; and that local government has assisted climate-affected families to access food assistance and medical care.

There is a limited budget for climate change activities at the sub-national level. Some community water infrastructure, such as common use ponds and wells, are supported by the village budget, as well as by NGOs and community participation. Larger projects, such as canal rehabilitation, require a main contribution from the government and/or NGOs, and community contributions.

There is a perception that climate change and migration are closely related, and that if there were no drought and farmers could earn better income from agriculture, fewer people would migrate, and landless farmers would have more agricultural labor opportunities. Migration is perceived to reflect household economic constraints, including the impact of drought on agricultural yields, and debt that is subsequently incurred. Some farmers sell their land to repay debts and others seek to earn enough income to service their debts.

Among migrants who seek work in other provinces or in Thailand, some have earned good money and have repaid their debts, while others have not been as successful. Most are working in construction, textiles, and food industries. Cross-border migration to Thailand is typically by individuals, whereas sometimes whole families are migrating within Cambodia.

The government provides community education and awareness-raising on the impacts and risks of migration, and information on safety measures while in migration. Key informants are aware that there is a government policy to monitor migrant worker livelihoods, and to support migrants in any case of emergency responses; but do not have much detailed information.

Key informants indicated that information is available about migration, primarily focused on

potential risks faced. The government encourages people to seek jobs locally and is taking steps to expand work opportunities, including in agriculture and livestock. The government has supported returning migrant workers to access food and medical assistance. It also has provided post-return training, but in a limited way because of limited budget support to both migration and return migrants.

## 2.5 SUMMARY AND RECOMMENDATIONS

The people we spoke with in Bavel are keenly aware of the changing climate and its effects on their lives and livelihoods – particularly the impacts of water scarcity, increased heat, and drought. Most have been trying to cope by finding or creating alternate sources of water, such as digging ponds or making existing ponds deeper, storing rainwater, or buying water for consumption. Many respondents also reported health issues as effects of the changing climate, and quite a few said they do not know what to do to cope with these impacts.

Climate change impacts are severely affecting crop yields, and some farmers said that they are not receiving good price for whatever they are able to produce. Loss of agricultural income and increased debt are factors for people in considering migration as a coping strategy, alongside pursuing other in-place adaptations. Most people rely on families, relatives, or neighbors with migration experience for information, and have a general perception that migration, particularly to Thailand, helps people clear debts and improve their economic conditions.

While migration is common in the study locations, there is a gap in information about safe and regular migration processes and working conditions in migration. There is a sense that migration involves hard work and taking on risk, but not necessarily details of risks and potential threats, particularly those faced in irregular migration. Interview responses and focus group discussions also indicated that the costs of migration can increase debt, which some individuals and families may anticipate and prepare for more adequately than others. If better work or income opportunities were available within Cambodia, internal migration would be perceived more favorably.

The government, within its limited budget, runs awareness programs through local NGOs to educate people about legal migration and risks faced in irregular migration. In extreme cases, where a person returns in worse condition than before he migrated (e.g., being arrested and serving prison sentence, falling seriously ill after migrating), the government has extended support with food and medical assistance. The local government also encourages people to find jobs within the community. However, many residents are not aware of these policies and assistance; and/or have yet to receive any tangible benefit from them.

Recommendations from study respondents in Cambodia include:

1. Improve water access: Dig and restore ponds; expand rainwater harvesting; and rehabilitate canals and community water infrastructure.
2. Climate-resilient agriculture: Provide information on climate resilient crops; and training and support to adopt new agricultural techniques.
3. Ecosystem restoration: Afforestation and reforestation initiatives.
4. Disaster risk reduction: Early warning system for disasters; improve disaster-related communication from local authorities (e.g., by using loudspeakers); and expand community-based approaches (e.g., Community-Based Disaster Risk Reduction or CBDRR) to increasing resilience and ensuring partnership between local government and community members in mapping and managing disaster risks.
5. Information about migration: Provide information about safe and regular migration, both within communities of origin and in places of destination; and increase awareness of migration requirements, such as to registering through the Ministry of Labor and obtaining a valid document to avoid fraud and other threats.
6. Migration support services: Information and assistance in accessing passports or other state-issued identification (e.g., blue ID that allows one to work in border provinces, and is valid for two years); and provide border reception and assistance for safe transit.

7. Strengthening migrants' rights: Provide know-your-rights training, in communities of origin and in places of destination; communicate with and monitor employers to ensure that workers' rights are respected; advocacy to expand safe and regular migration channels that are accessible even by the poorest households; advocacy for migrant workers' rights; and support to migrants in accessing legal, medical, and mental health support in places of migration.

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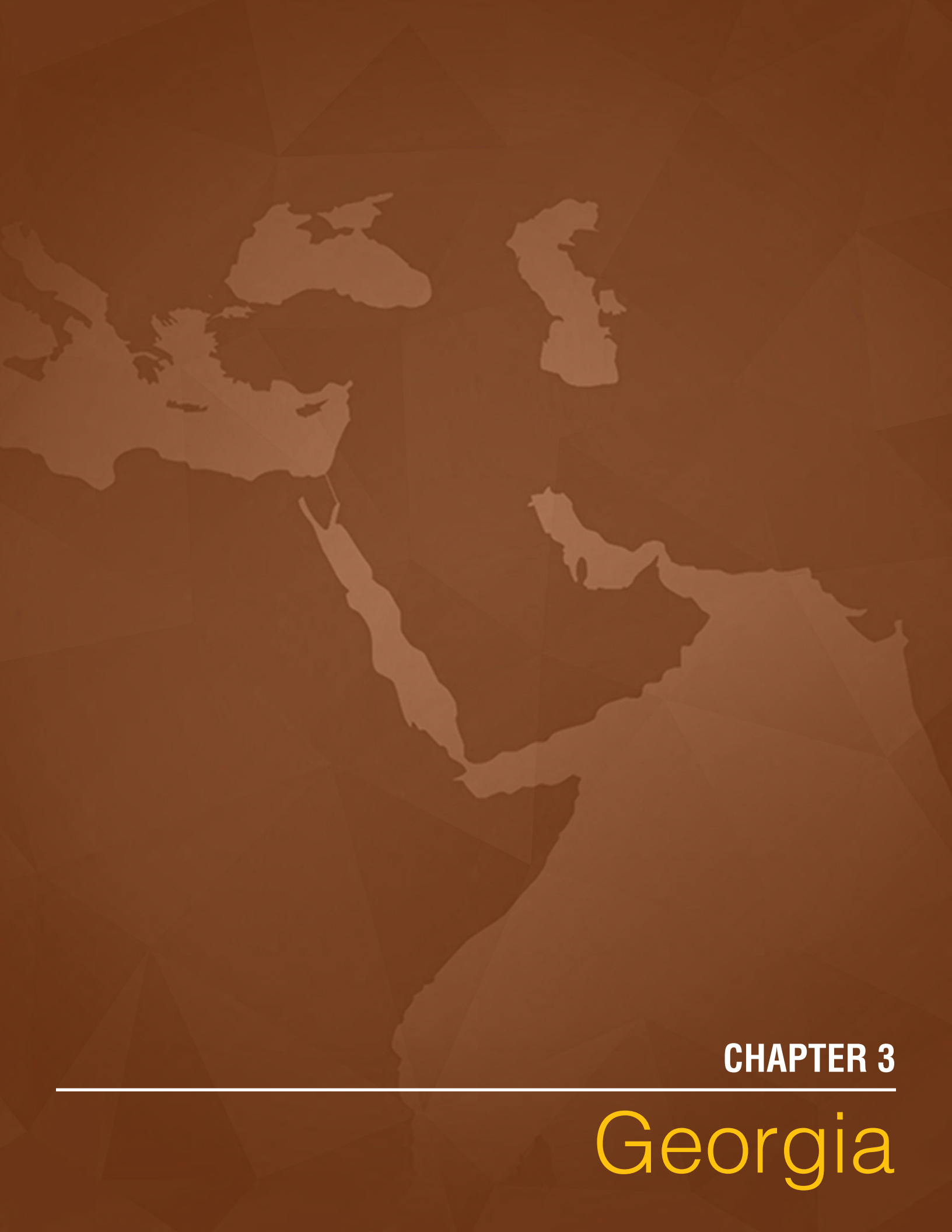
## 2.7 APPENDIX: CAMBODIA FOCUS GROUP SUMMARIES

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>FGD 1</b></p> <p>(Mix of 4 communities. 2 men, 2 women)</p> <p>Given title:</p> <p><b>“Advantage and disadvantage and coping strategy of climate change and migration.”</b></p>	<p><b>CC:</b> Change of weather caused by deforestation. Manifested in frequent storm, floods, irregular rain pattern. Drought, more heat.</p> <p><b>Effects:</b> Wind hits stronger when there is no forest. Affects rice farming because there is not enough rain during the season. Then occasional heavy rain damages crops. Water scarcity—less rain &amp; evaporation of water because of the heat. More health issues.</p> <p><b>Opportunity:</b> Planting new crop based on weather forecast (through neighbor who can access to information)—unfortunately the efforts failed.</p> <p><b>Adaptation:</b> Dig ponds and drill a new pump well. Some families migrate to other areas.</p> <p><b>Resources people have:</b> Some people get information about climate change and its effects (mostly on health) through social media, radio, awareness raising programs.</p> <p><b>Resources people do not have:</b> Replant the new crops destroyed by drought, planting trees around the house, pond/ water source to irrigate the crops during dry season, for domestic use, raise chicken for extra income.</p>	<p><b>Migration:</b> To leave home for work in another place. To work/ do business in another place/ country for better income.</p> <p><b>Who/ where:</b> Poor, landless (or owner of small land) to pay debt. People who do not have jobs—including elderly who do not have children to be supported by. Most go to Thailand, where people can earn 10-15 USD/day (stable), compared with 7.50 USD/day (unstable) in own country.</p> <p><b>Reasons:</b> Because they are landless, or lost yields. Some migrate to earn money to pay debts. Mainly because of lack of jobs. Some owners do not pay wages. Migration will likely increase with time because of the situation here.</p> <p><b>Who returns/why:</b> Elderly. Parents who need to take care of children.</p> <p><b>Resources people do not have:</b> Information on safe migration. People need to know that they need to register through the ministry of labor and have a passport to avoid cheating and other mishaps. Some sort of communication with the job provider, provision for pick-up at the border.</p> <p><b>Forced-voluntary continuum:</b> A “must-do” for better job and income.</p>	<p><b>Effects on community:</b> Lack of people. Helps: More income, investment in the community.</p> <p><b>Hurts:</b> Those who migrate without having enough information, suffer, come back poorer.</p> <p><b>Migration and adaptation:</b> Migration contributes to adaptation.</p> <p><b>Migration making adaptation easier:</b> Cooperation of governments is needed. (*Question misunderstood as what can be done to make migration easier)</p> <p><b>Migration making adaptation more difficult:</b> Most people do not know the language; undocumented workers often get arrested.</p> <p><b>To increase positive impact:</b> Migration will increase in the future because of lack of jobs, and the standard wage is very low compared to other countries. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To reduce negative impact:</b> Information and awareness about regular &amp; safe migration, pick up at border. Create jobs at community. Increase price of agricultural products.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>FGD 2</b></p> <p>(Mix of 4 communities. 2 men, 2 women)</p> <p>Given title:</p> <p><b>“Struggle of migration and climate change impact.”</b></p>	<p><b>CC:</b> Deforestation, “changing of weather from hot to cold”, irregular rainfall, drought, heat waves. Heavy rain, floods, storms.</p> <p><b>Effects:</b> Affects agriculture (rice), human and animal health. Floods destroy crops. Food shortage. Difficult to work, travel.</p> <p><b>Opportunity:</b> People are trying other businesses, like selling things, or raising livestock.</p> <p><b>Adaptation:</b> Livestock, small businesses, casual jobs (agriculture related).</p> <p><b>Resources people have:</b> Some people are getting information about CCA through local authorities; many are not.</p> <p><b>Resources people do not have:</b> Early warning system for disasters. Better risk communication from local authority (such as use of loudspeaker).</p>	<p><b>Migration:</b> “Seeking” a job outside the home country for better income, for paying debts.</p> <p><b>Who/ where:</b> People who have no stable job, or those who lost crop yield; those who have no resource to cope with these issues, and those who have debts. Usually to Thailand, Phnom Penh and other provinces of Cambodia.</p> <p><b>Reasons:</b> Poverty, lost yield, inadequate income, no stable job, and debts. Some migrate to gather knowledge and experience.</p> <p><b>Who returns/why:</b> Those who earned enough to start a small business or to pay debts. Some return to take care of family members (elderly, sick). And some just want to return home and find something in their community.</p> <p><b>Resources people do not have:</b> Information about potential employers, passport.</p> <p><b>Forced-voluntary continuum:</b> Both by choice and by force.</p>	<p><b>Effects on community:</b> Labor force in agriculture work.</p> <p><b>Helps:</b> Better income, better family economy, small businesses—invest in the community.</p> <p><b>Hurts:</b> Irregular migration causing problem between the local authority and Thai border. Some people return poorer and in worse condition, since they earn nothing and have no land to restart agriculture.</p> <p><b>Migration and adaptation:</b> People have to be well prepared with valid documents and information about the employer. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>Migration making adaptation easier:</b> Cooperation between governments is needed to make migration easier. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>Migration making adaptation more difficult:</b> When people migrate irregularly, without having any information about the employer. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>To increase positive impact:</b> By improving the economic condition of the migrant families. By starting new businesses.</p> <p><b>To reduce negative impact:</b> Safe and regular channels for recruitment &amp; migration -- valid passport and visa, prior information about the recruiter/ employer, preparing all necessary documents.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>FGD 3</b></p> <p>(Mix of 4 communities. 2 men, 2 women)</p> <p>Given title:</p> <p><b>“Way to address the migration and climate issue.”</b></p>	<p><b>CC:</b> Drought, more heat, unpredictable rain, flood when it rains, less rainfall during the rainy season.</p> <p><b>Effects:</b> Affects crop yields, thus affect income. People often cannot support family and have to take loans. Water scarcity affects from March to June (dry season). More diseases.</p> <p><b>Opportunity:</b> Livestock rearing for additional income. Migrate to Thailand and Phnom Penh for work.</p> <p><b>Adaptation:</b> Drinking water when it is too hot. Thinking of digging a canal (not done yet). Protecting family and animals when it storms.</p> <p><b>Resources people have:</b> Information on preventing health issues (from local govt.), support from local organization on livestock rearing.</p> <p><b>Resources people do not have:</b> Information on crops that are resilience to climate change. Early warning system for disasters.</p>	<p><b>Migration:</b> To work in another place for various reasons. Can be both short and long term.</p> <p><b>Who/ where:</b> Mostly the poor and landless, those who do not have a job or have very little income. Mainly to Thailand and Phnom Penh.</p> <p><b>Reasons:</b> Higher wage, less cheating. Better income (to clear debts, to send children to school). Success stories of people who migrated before. Farming costs are high, but the price received for products is low.</p> <p><b>Who returns/why:</b> Those who need to look after children and parents at home. Those who earned enough to build a new house and clear debts. Elderlies.</p> <p><b>Resources people do not have:</b> Information on legal and safe migration, on potential employer. Valid passport or blue ID (for working in border province, valid for 2 years). Pick up service at border check point.</p> <p><b>Forced-voluntary continuum:</b> Both by choice and by force.</p>	<p><b>Effects on community:</b> People who migrate do not get involved in any criminal activity. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Helps:</b> Better income, family support. Children can have enough food and education. Returnees can apply experience in own community.</p> <p><b>Hurts:</b> Unexpected things happen, people ask parents to send money instead of sending their income; involve in crime like theft.</p> <p><b>Migration and adaptation:</b> Migration helped people understand the importance of valid documents and information on safe migration. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation easier:</b> Dissemination of authentic information by trusted and recognized authority/ organizations. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> Having no valid document makes migration difficult. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> Migration will increase because people can earn much more in Thailand. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To reduce negative impact:</b> Raise awareness so that people can avoid unfortunate circumstances like arrest and cheating (with wages). Information on passport and other documents necessary for legal migration, information on good employers.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>FGD 4</b></p> <p>(Mix of 4 communities. 1 man, 2 women)</p> <p>Given title:</p> <p><b>“Impact of climate change, natural disaster, and migration”</b></p>	<p><b>CC:</b> Irregular rainfall, drought, sometimes too much rain and flood, frequent storm.</p> <p><b>Effects:</b> Drought, water scarcity. Affect yield, income. Lack of grass and water for animals. Floods damage houses and crops. Destroy roads.</p> <p><b>Opportunity:</b> Alternate sources of income—growing vegetables, raising livestock etc.</p> <p><b>Adaptation:</b> Restoring pond. Buying more jars to store more rainwater. Saving water by reducing consumption. Changing crops—from rice to cassava and sesame (more resilient). Planting more crops to generate more yield/income.</p> <p><b>Resources people have:</b> Training from local organization on planting trees, building chicken coops, saving water.</p> <p><b>Resources people do not have:</b> Training on climate resilient crops and agriculture techniques. Early warning system for disasters.</p>	<p><b>Migration:</b> To work in another place for various reasons. Can be both short and long-term depending on the job.</p> <p><b>Who/ where:</b> Mostly the poor and landless, those who do not have a job or have very little income. Mainly to Thailand and Phnom Penh.</p> <p><b>Reasons:</b> Poverty, lost yield, lack of jobs, debts to meet basic needs, debts for medical treatment.</p> <p><b>Who returns/why:</b> Those who need to look after children and parents at home. Those who earned enough to build a new house and clear debts.</p> <p><b>Resources people do not have:</b> Valid passport and other supporting documents, information about the country and potential employer.</p> <p><b>Forced-voluntary continuum:</b> Forced. No jobs here. Crops are damaged or lost because of climate change effects.</p>	<p><b>Effects on community:</b> Lack of workforce during harvest season. No one to take care of children and elderly.</p> <p><b>Helps:</b> Remittances. Family economy improves, money gets invested in the community. Returnees apply their knowledge and skills. Sometimes successful people build facilities for the community. They can also provide the right information about good jobs and safe migration.</p> <p><b>Hurts:</b> Irregular migration causing problem between the local authority and Thai border. Some people are cheated and become victims. They do not even have the money to come back.</p> <p><b>Migration and adaptation:</b> It is a challenge to market the agricultural product. Prices are too low. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation easier:</b> Get adequate information from the employer. Prepare all valid documents needed for safe migration. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> Spending on a new passport, challenges with new language and communication etc. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> Encourage returnees to apply their skills and invest in new business in the community. Remittances, new/ renovated houses, new land or other properties increase positive impact.</p> <p><b>To reduce negative impact:</b> Raise awareness so that people can avoid unfortunate circumstances like arrest and cheating (with wages). Information on passport and other documents necessary for legal migration, information on good employers.</p>



**CHAPTER 3**

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# Georgia

## 3.1 INTRODUCTION

Since 2000, the Rural Communities Development Agency (RCDA) has organized projects on climate change mitigation and adaptation, disaster risk reduction, and community resilience, with the support of CWS. The experience of implementing these projects suggested a direct relationship between climate change and migration, because of adverse impacts of climate change on people's livelihoods. Climate change has become a factor contributing to people's decisions to migrate, particularly when migration is the only option available for people to support themselves and their families. Many people who migrate work in informal sectors and, without support to access safe housing or employment, face risks of migrating into situations of vulnerability. Perceptions of both adaptation and migration are also impacted by past experiences – predominantly negative ones – in relocating internally following natural disasters.

### 3.1.1 BACKGROUND

The impacts of climate change have become more visible in Georgia since the 1990s. Disasters and environmental hazards have been increasingly pushing Georgia's highland population to resettle in other locations. Given the continued and uncontrolled use of natural resources, this trend is not expected to change or slowdown soon. Deforestation, land degradation and agriculture use of higher hillside land are all expected to remain major factors in disasters, compounding risks posed by both climate change and natural tectonic change. The 2019 report of the Caucasus Environmental NGO Network (CENN) identifies earthquakes, landslides and mudflows, floods, and snow avalanches as the main environmental disaster risks in Georgia ([CENN 2019](#)).

In 1987, several waves of internal resettlement occurred as a state-driven response to disaster risk and disaster displacement. One took place from Svaneti in the northwest of Georgia, to the Kvemo Kartli and Kakheti regions in the southeast and east of the country; and others, from mountainous regions Adjara, Svaneti, Mtskheta-Mtianeti and Guria, to Kvemo Kartli and the regions of Shida Kartli, Kakheti and Javakheti. More than 18,000 eco-migrant families were resettled in these two instances alone, and most are still living in the

areas where they were relocated ([Chumburidze et al. 2015](#)).<sup>10</sup>

Since that time, periodic and smaller scale ecological disasters have forced thousands of other families to become displaced, or to continue living in life-threatening conditions. More than 3,000 settlements – mostly in mountain zones – comprising roughly 400,000 families, have been endangered to varying degrees since 1980 ([Chumburidze et al. 2015](#)). Some of these families need to be resettled; others have lost their agriculture land and/or need assistance in repairing their houses and recovering agricultural lands.

No legal provisions exist to provide minimal standards for eco-migrants' housing, livelihoods or labor market integration. A 2015 study by the International Centre for Migration Policy Development (ICMPD) found that: "The first steps in regulating the status and allocating protection for eco-migrants were taken in 1998, when Presidential Ordinance No. 6736 established a special commission to monitor the process. A few more attempts were made in the late 1990s and early 2000s, but they did not contribute to improved regulation." ([Lyle 2012](#), [Chumburidze et al. 2015](#))

The ICMPD report concluded that "despite the scale of the problem, as of 2014 there remained no legal framework for regulating resettlement and assistance programs." ([Chumburidze et al. 2015](#)) This continues to be true in 2021, and today, ecological migration related to climate change receives little attention from international donors, including large donor agencies. At present, only the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs, and a small number of NGOs are active on eco-migration issues in Georgia.

### 3.1.2 ABOUT THE STUDY AREAS

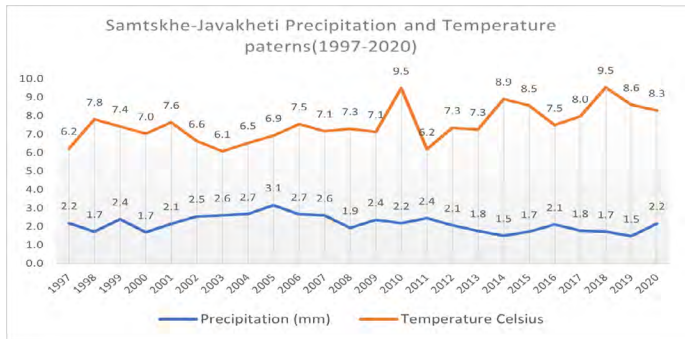


**Figure 6:** Map of Georgia showing the study areas

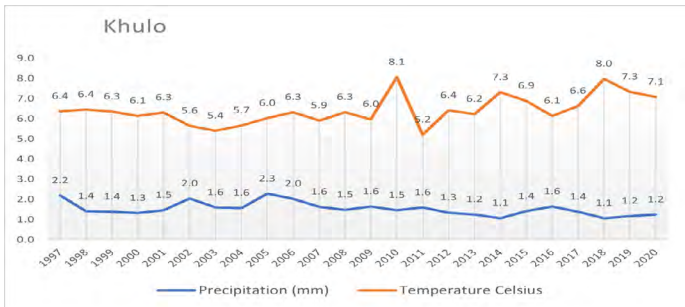
<sup>10</sup> Eco-migrants are those who were resettled by the government and have an official status as Eco-migrants.

Community	Region	Approx. Population as of January 2020	Occupation
Adigeni	Samtskhe- Javakheti	1,000	Mostly agriculture
Ambrolauri	Racha Lechkhumi	2,000	
Apnia	Samtskhe- Javakheti	160	
Dmanisi	Kvemo Kartli	2,900	
Dusheti	Mtskheta-Mtianeti	6,800	
Keda	Adjara	1,300	
Khulo	Adjara	1,007	
Kobuleti	Adjara	17,200	
Lemshveniera	Kvemo Kartli	1,600	
Tamarisi	Kvemo Kartli	700	
Tsalka	Kvemo Kartli	3,000	

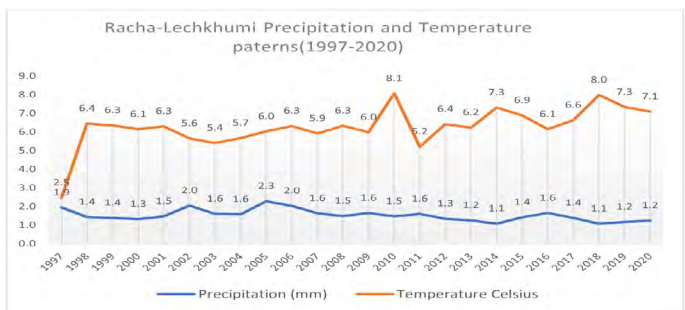
**Figure 5:** Population data of the study areas in Georgia  
Source: National Statistics Office of Georgia (Geostat)



**Figure 7:** Samtskhe-Javakheti rainfall and temperature

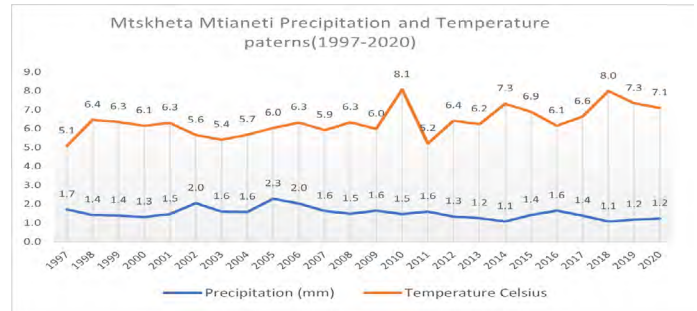


**Figure 8:** Khulo rainfall and temperature

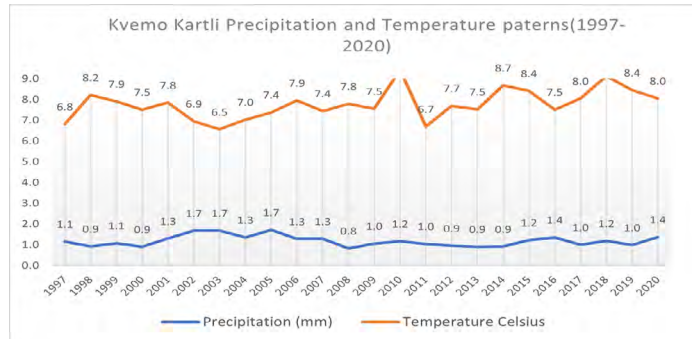


**Figure 9:** Racha Lechkhumi rainfall and temperature

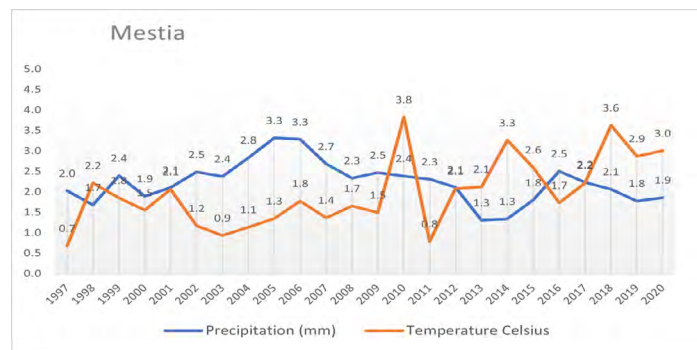
Source for Figures 7-12: These data were obtained from the NASA Langley Research Center (LaRC) POWER Project funded through the NASA Earth Science/Applied Science Program.



**Figure 10:** Mtskheta-Mtianeti rainfall and temperature



**Figure 11:** Kvemo Kartli rainfall and temperature



**Figure 12:** Mestia rainfall and temperature

Location	Disaster Event	2015	2016	2017	2018	2019	2020
Samtshke-Javakheti	Flood	1	1	1	0	0	1
	Landslide	1	4	1	2	3	2
	Land erosion	4	2	3	3	2	1
Adjara	Flood	3	4	4	4	4	4
	Landslide	7	7	8	8	9	7
	Land erosion	4	5	7	7	8	8
	Forest fire	2	3	3	4	3	3
	Avalanche	2	1	0	0	0	0
Zemo Svaneti	Flood		3	3	3	3	
	Landslide		7	11	13	12	
	Land erosion		4	6	7	6	
	Forest fire		2	2	1	0	
	Avalanche		2	4	4	2	
Racha Lechkhumi	Flood	2	1	3	2	2	1
	Landslide	4	3	4	3	1	3
	Land erosion	3	5	3	2	3	1
	Forest fire	0	1	1	1	1	1
Kvemo Kartli	Flood	0	2	1	1	2	1
	Landslide	1	3	2	1	3	2
	Mud flow	2	2	2	2	2	1
	Hail	1	3	1	3	3	1
	Rock fall	1	2	1	2	2	1

**Table 5:** Recent Disasters in Georgia by Region

Sources: Samtshke Javakheti Regional Administration, LEPL National Environmental Agency, Racha Lechkhumi Regional administration, Kvemo Kartli Regional Administration

### 3.1.3 SOME KEY FACTS

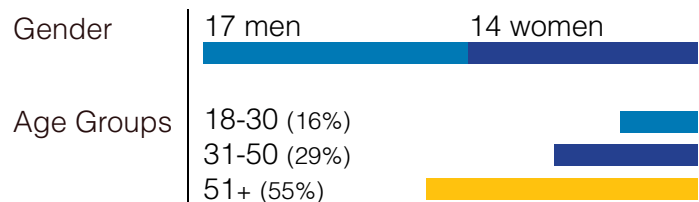
- Many kinds of disaster risks including earthquakes, landslides and mudflows, floods, and snow avalanches.
- In 1987, a series of massive avalanches were brought about by unprecedented snowfall in Svaneti region. Snow lasted for 46 days, falling 16 meters thick in several places. Over a three-week period, 330 avalanches were registered. The mountainous villages such as Chuberi, Ushguli, Mulakhi, Kala, and Khaishi were heavily hit. The village of Zhamushi was completely buried in snow, with 26 people killed. In total, 105 people died in the disaster. More than 2,000 houses were damaged and about 8,500 people had to be resettled. The total damage caused was about \$300 million.
- Two of the major waves of resettlement seen in the past three decades are: (1) from Svaneti in 1987 (mentioned above), (2) from mountainous Adjara, Svaneti, Mtskheta Mtianeti and Racha

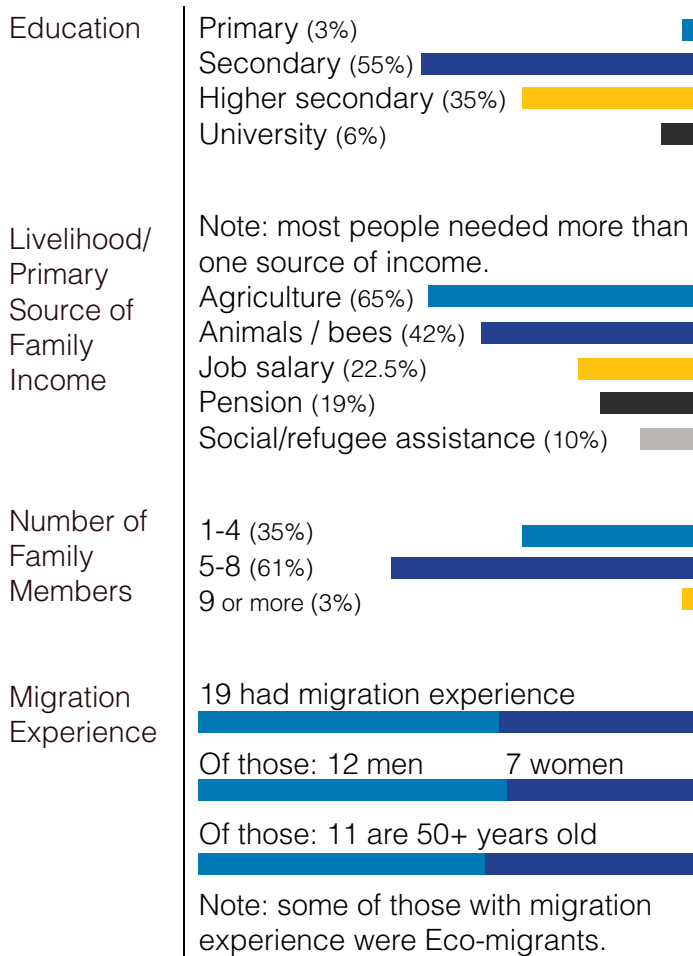
Lechkhumi in 1989 and the 2000s. More than 18,000 families were relocated in these two instances alone, and most of them are still living in areas where they were relocated.

- Smaller scale ecological disasters have displaced thousands of other families, many of whom continue to live in life-threatening conditions.

## 3.2 OBSERVATIONS FROM THE INTERVIEW DATA

### 3.2.1 OVERVIEW OF THE SAMPLE





### 3.2.2 PERCEPTION OF CLIMATE AND ENVIRONMENTAL CHANGE

Interview respondents described changes in temperature extremes, such as colder winters and hotter summers, and less frequent rain and drier conditions in some regions. At least 10 respondents in four locations perceive summer-season drought as a growing concern and noted that it is decreasing agricultural yields. Groundwater sources in some locations are drying up, and land is becoming less arable. Climate change is also perceived as bringing frequent and more intense rainfall in spring and winter. Respondents see this as increasing the risk of flooding and landslides. *“Judging by the amount of precipitation, it is no longer a moderate climate,”* described one person interviewed in Adigeni. *“If it rains, it is pouring, and then comes a drought for a long time.”*

In many interviews, respondents described increasing risk of sudden-onset events, particularly landslides, alongside growing challenges posed by drought during the hotter months. One respondent, a 55-year-old woman in Dusheti whose family depends on agriculture and livestock, remarked *“of course, the danger is growing. Life in this place becomes more life-threatening after every rain.”*

*Pastures and arable lands are being lost and the activities that my family is doing on the ground are becoming more difficult.”* A 31-year-old man, a child of eco-migrants who lives in Lemshveni, noted that *“the changes are noticeable. In winter, the snow does not fall as before. There is no such frost either, mostly drought and dried springs. Landslides increased. Heavy rains became more frequent.”* Meanwhile, in his family’s previous home community, *“drought has reduced the yields of potatoes and other crops. Water shortages have become unbearable.”*

### 3.2.3 PERCEPTION OF ADAPTION AND COPING METHODS

Most respondents (20 of 31) indicated that they are aware of coping methods or adaptation strategies in relation to slow-onset climate change. The strategies that were most frequently described include: new forms of irrigation or water management techniques (e.g., water reservoirs); cultivating new crops, such as fruits that are better suited to the changing climate; using new technologies and equipment; learning new agricultural methods; and seeking alternate sources of food for livestock.

For some respondents, the cost of adaptation strategies put them out of reach. A 45-year-old man in Kobuleti, who relies on temporary construction jobs for income, has sought to introduce new crops that are hardier to drought. He does not perceive this to be helping significantly, though. *“It [adaptation] is costly and family cannot afford without outside help. Villagers do not have enough resources.”* Others are managing for now but noted that more resources are needed to earn a living through agriculture than was the case in the past. *“Increasing productivity requires much more time, work and finances than before,”* explained a 42-year-old man in Apnia. *“It was a fertile land, now it depleted, and showing signs of desertification.”*

Managing the risks of sudden-onset events poses other difficulties. One respondent, a 66-year-old woman who had relocated twice previously, was at a loss to describe how risk reduction could be achieved. *“How would we deal with it?”* she asked to the interviewer. *“I do not know if there is any remedy against the avalanche. Probably in other countries there is something we can do too. The avalanche came out so suddenly. It was 8 meters of snow.”* Another respondent echoed this perception: *“None of the families living in the village can do anything against avalanches and landslides.”*



In his view, managing this risk requires support from the government or mobilizing resources from other external sources: *“It involves large sums of money... In places where avalanches are expected, dams and embankments must be done. It is impossible to return otherwise. It is necessary and possible to protect landslides with gabions.”*

### **3.2.4 PERCEPTION OF MIGRATION**

Many respondents had relocated previously because avalanches and landslides; one person was also affected by armed conflict before relocating. Eight respondents had migrated from Svaneti region, which was affected by the 1987 disasters; and nine from Khulo, in Adjara region, which was affected by massive landslides 1989. None reported positive changes from relocation, and many described negative changes, such as unemployment, poverty, and depression. *“We escaped one problem and faced another. We were relocated to place where we found terrible conditions. No conditions for living,”* described a 45-year-old man, who had been relocated with his family when he was a boy.

In general, the interviews suggest that this group of respondents feels very strongly against migrating again – only four of the 19 have considered migration as a way of adapting to climate change impacts. And while 18 people expressed concern over disasters or climate-related hazards, only four have considered migration as a coping strategy. The reasons described in the interviews, tend to reflect respondents’ past experiences with what many perceive as forced relocation – *“the whole village was deported,”* one respondent described the experience – as well as concerns about the high cost of migration and uncertain return on investment.

Many, however, expressed willingness to move back

to the places from which they or their families had been relocated 30 years ago. One respondent, a 66-year-old woman who had relocated twice before, explained that *“migration is not the solution to our problem. We want to return to Svaneti, but the house is completely destroyed.”* Some respondents have maintained links with their places of origin and have been visiting regularly either to meet relatives or to do seasonal agriculture.

Among respondents who had not lived through relocation, perceptions are more open to considering migration as a long-term option. Reasons to consider migration, or recommend it to others, include better safety, better income, and improved living conditions. Some respondents, irrespective of their own age, perceive that migrating temporarily for work and income can be a good option for younger people. No significant link between gender and perception of migration was noticed in our sample in Georgia.

Finding a new place to survive, given pressures on agriculture and a lack of other work opportunities, is also a factor. A 55-year-old woman in Dusheti, whose family relies on farming and livestock, perceives migration as a last resort but one that she must consider given the pressures on agriculture. *“I do not see any other way. We must migrate to a place where we can survive and carry out the same activities as here.”* She is uncertain whether migration within the district would be a viable option: *“I know it is expensive and I cannot migrate without help.”* Another respondent perceives migration as a long-term option, simply because *“life here is impossible.”*

One respondent, a 23-year-old man in Dusheti, explained that environmental changes are adding his family’s economic strain: *“We are extremely poor. Dad has heart condition... Every year arable*

*land is deteriorating and our family income is declining accordingly. [Climate change] directly affects the yield. The land slides when it rains, and the grass is not enough during the drought.”* He went on to describe that he has considered migration as a way out: *“I had some thoughts, but I have not gone anywhere yet. One thing I know for sure that living here is becoming more and more impossible.”* While he does not have much information about migration, this does not affect his perception: *“I know nothing. But my fellow villager went to Poland, and I think to go there as well.”*

Most respondents indicated that they have access to information about migration from TV and the internet; and some said they receive relevant information from NGOs. Of the 31 respondents, 12 indicated that they did not have any information on migration; including two who stated that they are simply not interested.

### 3.3 OBSERVATIONS FROM THE FOCUS GROUP DISCUSSIONS

Six focus group discussions were conducted in Georgia, in various regions. Some discussions primarily included former eco-migrants, and others included a mix of participants who had relocated previously and others who had never migrated. Participants are aware of local impacts of climate change, such as increased average temperatures during hot seasons (ranging from 39 to 45 degrees centigrade, in one location), and decrease in arable and pasture lands. These changes have impacted farming families, making life more difficult and increasing poverty.

Discussion participants see the need for more information about climate adaptation possibilities, and greater involvement of local and central government in extending information and supporting community efforts. Investments in both human capital and public infrastructure are needed. A few groups described a wide range of options, including ones they would consider if more resources were available. One group seemed to have a general idea that adaptation is possible but did not name specific ideas or options. Even in locations where environmental disasters are not common, there is growing concern that climate change is increasing

disaster risks. One group emphasized that investing state resources in places that are experiencing new or increasing hazards, including in steps to adapt to slow onset impacts and to manage disaster risks, would be a better choice than relocating people away from hazards.

Several group discussions reflected a perception that migration is a difficult, painful, and often unsafe process – particularly migration that is forced by ecological disasters. Participants expressed a lack of information about the pros and cons of migration, and a perception that there is not enough public awareness of the impacts that migration can have on communities of origin. In rural communities that are experiencing population decline and out-migration of young people, there are concerns that migration is weakening traditions and inhibiting community development. Most focus group participants associated returns with lack of success in migration; and described little or no return migration.

Remittances were described as a significant source of income for rural families, and a resource for investing in agricultural adaptation or other livelihoods adaptation. Migration is also reducing the labor force and human capital in places of origin, which some participants perceive as reducing adaptive capacity within communities and contributing to negative impacts on the agricultural economy.

Focus group participants highlighted disasters as a main cause of migration, and participants in one group described a lack of legal framework to support safe internal migration. Another group indicated that people who are internally displaced or relocated away from serious hazards require much more integration support than is currently available, as it is a long and difficult process to adjust to life in a new place. This can include support to migrants in adopting environmentally sustainable practices and contributing to climate change mitigation in their new locations.

### 3.4 KEY INFORMANT INTERVIEWS

Interviews were conducted with 25 key informants, primarily from village administrations, across all the regions where interviews and focus groups were held. A summary of responses is as follows:

Region	What are the communities doing to adapt?	Steps taken by the village authority	Resources allocated, if any	Migration support from the government	Government policies regarding migration	Migration prevention measures, if any
Svaneti	Almost nothing due to lack of money and information	Responding to disasters, fixing destroyed roads and other infrastructure	Some resources are allocated for immediate help.	25'000 GEL for housing for those who have IDP or Ecomigrant status.	People in general do not find any policy to be effective.	None
Racha	Sharing information, helping each other	Village authority collects information and reports to the local government	No financial resources are allocated in local budget for climate change	25'000 GEL for IDP and ecomigrants.	General support for mountainous regions and for disaster affected populations.	None
Kvemo Kartli	Irrigation systems	Nothing that people can recall	Climate change is not a priority for funding. Perception that all resources are directed towards rehabilitation of roads.	One-time 25'000 GEL for housing for those who have IDP or Ecomigrant status	One-time support for homeless IDP and ecomigrants	None
Achara	Irrigation systems, drainage systems.	Infrastructural works and housing of affected families.	Resources are not enough and there is no special funding for climate change adaptation.	25'000 GEL for IDP and ecomigrants.	One-time support for ecomigrants housing.	None
Mtskheta -Mtianeti	Rely on government support, mainly reinforcement of riverbanks and other infrastructural works	Road infrastructure works	Resources are allocated from the central budget for affected families, but not for adaptation.	The state has allocated a budget of 25,000 GEL for eco-migrants to buy houses	One-time financial support for housing	None

**Table 6:** Summary of key informant interviews in Georgia

## 3.5 SUMMARY AND RECOMMENDATIONS

Many study respondents are aware of climate change impacts, and keenly sensitive to their effects on agriculture. Key effects are changing seasonal patterns, unpredictable rainfall, land erosion, water scarcity and water-related diseases; as well as weather-related disasters, such as floods, droughts, landslides, and heavy hail.

While agricultural adaptation is taking place at the household level, there is a perception that more government investment is needed to increase community-wide resilience and, especially, to manage disaster risks and mitigate against the risk of displacement from sudden events.

In the final community workshop, participants agreed that climate impacts on livelihoods are pushing people to migrate under precarious situations, in some cases at any cost. Many people

who migrate are working in informal sectors and face economic and other insecurity, and migration of women from rural areas is contributing to an increased number of street children.

Because of their past experiences of relocation, most eco-migrant respondents have a very negative perception of migration. Most people interviewed associate the term “migration” with displacement by a sudden disaster or involuntary relocation that followed. Perhaps as a result, most eco-migrants do not perceive mobility as an option to cope with the effects of climate and environment changes. In contrast, persons who had not experienced relocation or displacement, are relatively more open towards considering migration as a climate coping strategy, particularly in areas where agricultural livelihoods are becoming more challenging and other work opportunities are limited.

Although many interview respondents indicated that they receive information about migration from TV or the internet, during the FGDs and community workshops, participants described friends, neighbors, and relatives as their primary sources of information. Some groups discussed the need for authentic and verifiable information on the process of safe and legal migration.

Many respondents expressed the need for more involvement of both local and central government, and for design of new and stronger strategies to support affected communities. Many also indicated the need for more budget allocation, such as for renovation of houses. Key informant interviews suggest that the resource allocation is focused more on reactive responses rather than pro-active adaptation. Some key informants indicated that there are not enough resources, and that there is no special funding for climate change adaptation. In all the regions where this study was conducted, people with IDP or eco-migrant status can receive financial assistance of 25'000 GEL for migration.

Recommendations from study respondents in Georgia include:

1. Water access and water management: Expand drip irrigation; improve drainage infrastructure; strengthen water management to protect communities from floods and water-borne diseases to protect communities from floods and water-borne diseases; and improve small scale

drinking water supply systems, particularly in mountainous areas where communities depend on springs.

2. Climate-resilient agriculture: Increase access to drought-resilient seeds; training and support for new agricultural techniques; and expand use of ecological farming methods.
3. Livelihood adaptations: Provide young people with education and skills training for work opportunities beyond farming and land-based livelihoods; and provide adult education opportunities to older people.
4. Ecosystem restoration: Rehabilitate land and introduce ecosystem restoration to increase resilience; and strengthen the links between agriculture and biodiversity management programs.
5. Disaster risk reduction: Develop or expand access to disaster information systems; increase state investments in managing risks in communities with high and/or increasing exposure to climate hazards; and intensify efforts to mobilize donor support toward disaster risk reduction activities.”
6. Coordinated climate action: Develop climate change information systems and make information on adaptation options more widely available; undertake community climate change vulnerability assessments (CCVA); increase involvement of local and central governments in climate adaptation; prioritize the development of a national climate change adaptation strategy and climate action plans for key sectors (e.g., infrastructure, tourism, agriculture); and intensify efforts to attract donor support toward climate adaptation and to increase effectiveness of international funding mechanisms.
7. Migration information and support services: Provide more – and more accurate – information on migration, especially on costs of migration and legal requirements; skills-building for work opportunities in migration; increase data available on migration trends; and if internal relocation is necessary, ensure that people have access to basic services, decent work, housing, education, health care, social protection, and physical security.

8. Migration and adaptation: Encourage migrants to invest or reinvest in communities of origin; provide incentives for migrant investments in climate-resilient agriculture; encourage migrants to share information and skills that could contribute to climate adaptation in places of origin; share examples of successful livelihoods adaptation and increased climate resilience with diaspora communities; and integrate migration management, climate adaptation and community development policy agendas.
9. Social impacts of migration: Provide support to families in places where women are migrating internationally; and expand support to internal migrants in urban centers where people are migrating into vulnerable or precarious situations.

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## 3.7 APPENDIX: GEORGIA FOCUS GROUP SUMMARIES

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Svaneti region</b></p> <p>14 participants; all formerly displaced ('eco-migrants') from four municipalities</p> <p>Given title:</p> <p><b>“Return to Home”</b></p>	<p><b>CC:</b> Colder winter, fewer snow, unusually frequent muddy (clay-colored) rains in winter, unusually high temperature in summer, droughts in winter and summer.</p> <p><b>Effects:</b> crops are damaged, roads destroyed by frequent floods and landslides, rising temperature/ drought causes water scarcity, young people are leaving. Soil quality degraded, crop yield 1/3 compared with 15 years ago. Income is affected.</p> <p><b>Opportunity:</b> Cultivation of orchards (used to be impossible). They are growing well. Greenhouses have been set up.</p> <p><b>Adaptation:</b> Brought water from springs through rubber pipes, began to cultivate new varieties.</p> <p><b>Resources people have:</b> Did not hear much about these issues.</p> <p><b>Resources people do not have:</b> information, structural measures to protect settlements from flood/ landslide (gabion, dams, strengthening river beds). Tolerant seeds. More information on CC and how to deal with the consequences.</p>	<p><b>Migration:</b> Avalanche, landslide, new environment, distance from relatives.</p> <p><b>Who/ where:</b> Disaster-affected families, low-income family members and young people; to eastern parts of the country (such as villages of Sagarejo, Marneuli, Gardabani).</p> <p><b>Reasons:</b> Disasters, unemployment, poor living condition.</p> <p><b>Who returns/why:</b> cultural issues, not being accepted in the society. Also because tourism potential increased in Mestia. Some people return after earning enough outside the region/ country. Seasonal return—mainly for agriculture.</p> <p><b>Resources people have:</b> debt to go abroad to work illegally (repaid over many years).</p> <p><b>Resources people do not have:</b> Better information (usually depend on info provided by neighbors/ relatives), especially on legal issues, financial resources.</p> <p><b>Forced-voluntary continuum:</b> By force (even if it is for employment/ income—because they are consequences of the overall situation).</p>	<p><b>Effects on community:</b></p> <p><b>Hurts:</b> Villages evacuated, settlements destroyed, arable lands deserted, tradition lost.</p> <p><b>Helps:</b> Finding employment, income. Part of the revenue spent on rehabilitating the abandoned settlements.</p> <p><b>Migration and adaptation:</b> Adaptation reduces migration. Migration facilitates adaptation (the financial resources earned in migration can be spent on adaptation).</p> <p><b>Migration making adaptation easier:</b> Migration contributes in part to the development of adaptation strategies. Some migrants manage to mobilize some financial resources for adaptation. Some migrants return seasonally for agriculture, thus creating a precondition for constant return.</p> <p><b>Migration making adaptation more difficult:</b> Adaptation can only be done by living in a place (thus migration makes adaptation difficult).</p> <p><b>To increase positive impact:</b> By raising awareness about adaptation. Having constant communication with local authorities, their financial participation.</p> <p><b>To reduce negative impact:</b> Depopulation of villages (especially of young generation).</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Aspindza</b> – Samtskhe-Javakheti region</p> <p>9 participants; 4 women, 5 men.</p> <p>Given titles:</p> <p><b>“Messenger for Eco-migrants”</b></p> <p><b>“Migration Problems and Solutions”</b></p>	<p><b>CC:</b> Droughts in winter, freezing of the crop in early June, two-week spring, dried soil, hail more frequent, water decreased, harsher temperature.</p> <p><b>Effects:</b> health—cold etc. more frequent.</p> <p><b>Opportunity:</b> New equipment &amp; technology, possibility of cooperation.</p> <p><b>Adaptation:</b> Water, irrigation. We try.</p> <p><b>Resources people have:</b> Irrigation system. Programs such as “Produce in Georgia.”</p> <p><b>Resources people do not have:</b> Drip irrigation (expensive).</p>	<p><b>Migration:</b> New/ better employment and living conditions, result of ecological disasters.</p> <p><b>Who/ where:</b> Mostly the young, to Turkey, Greece, Germany. Also to cities like Tbilisi.</p> <p><b>Reasons:</b> Natural disasters, economic instability, search for better living conditions.</p> <p><b>Who returns/why:</b> Most people return after reaching their target income. For family, children.</p> <p><b>Resources people have:</b> Information from the internet, from settlers in other regions.</p> <p><b>Resources people do not have:</b> Info about migration process, knowledge and skills to find jobs.</p> <p><b>Forced-voluntary continuum:</b> By force because of disasters. By choice for income/ better life.</p>	<p><b>Effects on community:</b> Remittance. Cash inflow. But decrease of young population. Burden of labor on the elderly.</p> <p><b>Migration and adaptation:</b> It is connected. Migration is caused by a weakness of adaptation. Migration occurs from where adaptation policies are weak. Caused by natural disasters or scarcity of jobs.</p> <p><b>Migration making adaptation easier:</b> Families of migrants adapt better.</p> <p><b>Migration making adaptation more difficult:</b> Migration is a problem if you do not have a strategy.</p> <p><b>To increase positive impact:</b> By spreading positive information.</p> <p><b>To reduce negative impact:</b> By helping the elderly of the migrant families, so that the migrant does not have to return before the planned time.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Dmanisi –</b> Kvemo Kartli region</p> <p>10 participants. All men.</p> <p>Given title: <b>“Migration, human test!”</b></p>	<p><b>CC:</b> More frequent heavy rains, hot summers, prolonged drought.</p> <p><b>Effects:</b> Cultivation of crops, harvest.</p> <p><b>Adaptation:</b> Change irrigation system, stronger seeds, sow early, loosen soil when they become hard.</p> <p><b>Resources people have:</b> None. There is a lack of information at all levels.</p> <p><b>Resources people do not have:</b> more updated information on adaptive agriculture.</p>	<p><b>Migration:</b> Voluntary or forced relocation from one place to another.</p> <p><b>Who/ where:</b> Return to Svaneti.</p> <p><b>Reasons:</b> Better living conditions, disasters, business, to learn and acquire knowledge.</p> <p><b>Who returns/why:</b> Unlucky people, graduates to teach/work (rare).</p> <p><b>Resources people have:</b> One needs information, education and financial abilities. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>Resources people do not have:</b> People do not have either any information, or the skills, or the finances to migrate.</p> <p><b>Forced-voluntary continuum:</b> Mainly forced, sometimes voluntary (education, business).</p>	<p><b>Effects on community:</b> Lack of human resources for community, but sometimes the return of an educated person can be good for the community. Also, the money sent to the families.</p> <p><b>Helps/hurts:</b> The experience may help. But the community loses human resources and skilled persons.</p> <p><b>Migration and adaptation:</b> Yes, it is connected.</p> <p><b>Migration making adaptation easier:</b> The adaptability of a person improves. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>Migration making adaptation more difficult:</b> A person who migrated once does not want to experience again what he endured. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>To increase positive impact:</b> migrate with the thought that you will come back, return as a professional, return and use your experience in your own region, country.</p> <p><b>To reduce negative impact:</b> creation of normal conditions for human life.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Ambrolauri-Racha-Lechkhumi region</b></p> <p>16 participants</p> <p>Given titles:</p> <p><b>“Migration in our real life”</b></p> <p><b>“Climate change and community challenges”</b></p>	<p><b>CC:</b> Rain decreased, less snow, high temperature, water decreased, droughts.</p> <p><b>Effects:</b> Shortage of drinking water, decreased crop yields, pastures disappearing, bees dying, pests, plant diseases increasing. Difficult to sustain a family farm.</p> <p><b>Opportunity:</b> Govt. and NGO programs introducing new irrigation system. Several communities have new water points.</p> <p><b>Adaptation:</b> No. Lack of knowledge/ information.</p> <p><b>Resource people have:</b> No substantial information, only personal observations and efforts.</p> <p><b>Resources people do not have:</b> Irrigation system, new agriculture technologies and techniques.</p>	<p><b>Migration:</b> Mass movement of population between regions and states, which significantly changes the overall picture of settlement and the demographic and social picture of the population. Going to another region or abroad for short or permanent residence for economic or personal reasons. Leaving the area due to hard living conditions. Forced movement from rural to urban areas. Desertification of the region, abandoning highland villages.</p> <p><b>Who/ where:</b> Young people, women, to big cities and other countries for income, family support. People affected by natural disasters.</p> <p><b>Reasons:</b> Employment, economic hardship, disasters. Mainly employment.</p> <p><b>Who returns/why:</b> Retired/ pensioners. People who went abroad to earn money—after they earn enough.</p> <p><b>Resources people have:</b> Information, capital.</p> <p><b>Resources people do not have:</b> Information on safe migration.</p> <p><b>Forced-voluntary continuum:</b> 90% forced.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Remittances.</p> <p><b>Hurts:</b> Community is weakened, depopulated, and the traditions of the community are lost. Community does not develop. Children grow up without a parent. Families become too dependent on remittance.</p> <p><b>Migration and adaptation:</b> They are related.</p> <p><b>Migration making adaptation easier:</b> At the destination, the migrant tries to adapt to the new environment or is forced to adapt to the offered conditions. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> Migration makes adaptation strategies more difficult to implement when expectations and reality do not match. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> The decision for migration should be an informed, well-thought one.</p> <p><b>To reduce negative impact:</b> Increase employment resources in the field. Popularize positive examples.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Tianeti – Mtskheta-Mtianeti region</b></p> <p>9 participants. Mixed group in terms of age, HH migration profile.</p> <p>Given titles:</p> <p><b>“Develop local community &amp; reduce migration”</b></p> <p><b>“Finding the right ways for the future development of the region”</b></p> <p><b>“Self-preservation in the context of migration and climate change”</b></p>	<p><b>CC:</b> Spring shorter, lesser rain/ snow, drought, floods, increased air temperature, unpredictable weather.</p> <p><b>Effects:</b> discomfort, reduced crop yields, migration for a more stable income.</p> <p><b>Opportunity:</b> Applying modern science &amp; tech.</p> <p><b>Adaptation:</b> Not really. The effect is not felt directly. Whatever little adaptation is necessary is being done by the people themselves.</p> <p><b>Resources people have:</b> Studying the situation, informing the citizen.</p> <p><b>Resources people do not have:</b> International cooperation, technical support, correct and verified information, more theoretical and practical knowledge, adequate technical materials if necessary.</p>	<p><b>Migration:</b> Moving from one place to another (rural to urban or from developing country to developed country) for better living conditions. To recover from disasters.</p> <p><b>Who/ where:</b> Young people for work, employment to cities. Eco-migrants within the country. Disaster affected people to other countries for safety and better life.</p> <p><b>Reasons:</b> Better life, education, experience. (Choice) Disaster, persecution, war. (Force.)</p> <p><b>Who returns/why:</b> Unfulfilled expectation. Or achievement of income target.</p> <p><b>Resources people have:</b> Information.</p> <p><b>Resources people do not have:</b> Information, expenses (money).</p> <p><b>Forced-voluntary continuum:</b> Both by choice and by force.</p>	<p><b>Effects on community:</b> Reduced workforce.</p> <p><b>Helps/hurts:</b> Remittance. Improved living condition. But outflow of young workforce.</p> <p><b>Migration and adaptation:</b> When a person becomes a member of a society, they adapts to it. Adaptation policy should be one of the cornerstones of a well-managed migration. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation easier:</b> One must use adaptation strategies at all stages of migration. Experience helps. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> It does not make adaptation more difficult, but it gets easier with experience. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> Migration management with respect to the need of the community—can be integrated with the development agenda.</p> <p><b>To reduce negative impact:</b> Properly inform existing or potential migrants, prevent illegal migration and facilitate legal migration, increase the efficiency of the transfer of financial resources.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Tsalka – Kvemo Kartli region</b></p> <p>11 participants, all “Eco-migrants”</p> <p>Given title:</p> <p><b>“Beginning of improvement of the adaptive conditions of migration!”</b></p>	<p><b>CC:</b> precipitation decreased, but torrential rain increased. Hailstorm became more frequent.</p> <p><b>Effects:</b> Poor soil, poor harvest, impoverished pasture, difficult to manage livestock.</p> <p><b>Opportunity:</b> Better irrigation system installed by those who can afford. Participatory cultivation program started.</p> <p><b>Adaptation:</b> We try, but no funding.</p> <p><b>Resources people have:</b> In general, there is a lack of information. NGOs are doing some work. Young people help with new information from the internet.</p> <p><b>Resources people do not have:</b> Adequate information, relevant knowledge and skills, financial resources.</p>	<p><b>Migration:</b> Forced relocation, hardship.</p> <p><b>Who/where:</b> In Tsalka mostly from Adjara and Svaneti. Go back to places of origin for seasonally.</p> <p><b>Reasons:</b> Better life (job, business), disasters, to learn/ acquire knowledge. Mainly to find jobs.</p> <p><b>Who returns/why:</b> Losing job, not getting used to foreign environment, conflicts. Sometimes young people return after graduation.</p> <p><b>Resources people have:</b> knowledge/ skill of certain crafts, computer education.</p> <p><b>Resources people do not have:</b> Necessary information, contacts, language skill, financial means.</p> <p><b>Forced-voluntary continuum:</b> By force in case of ecological displacement. By choice in case of job/ business.</p>	<p><b>Effects on community:</b> Depopulation, lack of hand for agriculture, abandoned settlements.</p> <p><b>Helps:</b> Remittance, investment in community. Knowledge/ skill brought back by the returnees.</p> <p><b>Hurts:</b> Depopulation, lack of hands.</p> <p><b>Migration and adaptation:</b> Yes, they are connected.</p> <p><b>Migration making adaptation easier:</b> One’s ability to adapt (to a new place) is strengthened. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> Migration is a “forced form of relocation”, hence it often makes adaptation difficult. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> Attract more educated people, balance ethnic situation.</p> <p><b>To reduce negative impact:</b> Knowledge of environment protection, anthropogenic impact. (*Question interpreted differently than intended in FGD guide.)</p>



**CHAPTER 4**

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**Haiti**

## 4.1 INTRODUCTION

Repeated crises – including COVID-19, political instability, and drought, storms, and other environmental hazards – have depleted the assets and financial reserves of many rural families in Haiti’s Northwest department. While remittances by domestic and international migrants is a significant source of income for many families, migration trends often represent a loss of skill and talent in rural areas. CWS has worked for more than 10 years with ten agricultural cooperatives in the Northwest department, and more recently has partnered with GRADAID (Group of Research and Support for Agroecological, Innovative, Durable Development), AGEHPMDNG (Association of Evangelical Groups of Haiti for the Preaching of the World and the Development of a New Generation), and Cooperative Hope for Tomorrow (KED) to expand rural livelihood options, including for youth, amid climate change and deforestation.

### 4.1.1 BACKGROUND

**Climate change impacts:** Haiti ranked third among countries most affected by extreme weather events in the period of 1999-2018 ([Eckstein et al. 2018](#)). Haiti’s Northwest department is among the most climate vulnerable areas of the country, particularly in terms of coastal impacts and soil and water degradation ([Ministère de l’Environnement 2006](#)). Temperature increases and longer periods of drought have reduced water resources and increased water scarcity; and sea level rise has contributed to salinization. Rainy seasons are shifting and starting later; and while total rainfall is reduced, it has become more intense, with torrential rains causing flooding and landslides ([Leal et al. 2009](#); [Singh and Cohen 2014](#); [Borde et al. 2015](#); [Pierre 2015](#); [UNFPA 2016](#)).

Agriculture is the main source of income in Haiti, counting for 28% of gross domestic product, and farmers are among the groups most vulnerable to climate impacts. Adaptation strategies include watershed management, reforestation, agroforestry, seed banks, agricultural microcredit, construction of cisterns, use of adapted crops, and application of conservation farming techniques ([Borde et al. 2015](#); [Ministère de l’Environnement 2006](#)). Charcoal is widely used for cooking and other purposes, and its production is an important source of income when agricultural yields reduce. Cutting of trees for charcoal production exacerbates deforestation, which contributes to soil erosion, land degradation

and desertification ([Leal et al. 2009](#); [Loudior 2012](#); [Singh and Cohen 2014](#); [Toffolon 2016](#)). Specific adaptation recommendations for the Northwest include rehabilitation of water sources and improving access to climate-smart agricultural inputs ([Ministère de l’Environnement 2006](#)).

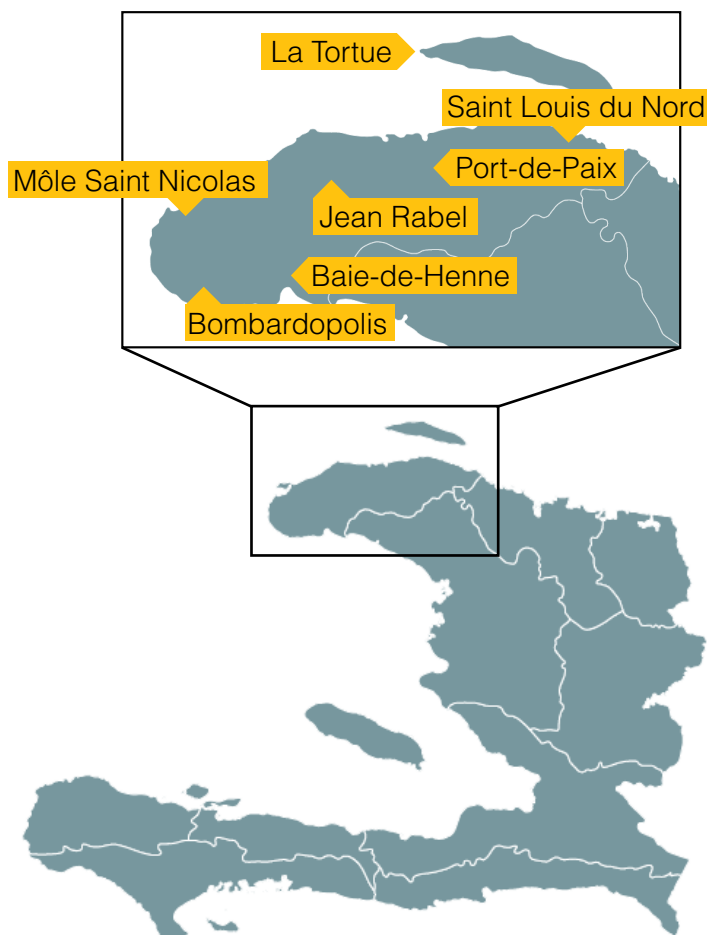
**Migration trends and drivers:** In 2015, migrants contributed nearly USD \$2.2 billion in transfers, or 25% of the national GDP, and a 2017 study found that 38% of families receive remittances from a relative living abroad ([OCDE/INURED 2017](#)). Remittances are used to support education and have also contributed positively to agriculture ([OCDE/INURED 2017](#)). Emigrants represent 11% of Haiti’s population, with the US and the Dominican Republic as the two leading destination countries ([OCDE/INURED 2017](#)). Boats leave from the Northwest department, as well as from other northern departments, for the Bahamas or the US. Both costs and risks are high; boats are often filled over capacity and at risk of sinking or being caught by coast guards ([Loudior 2012](#); [Pierre 2018](#)). There is also active internal migration in Haiti, particularly from rural areas to the capital Port-au-Prince and other urban areas, which offer more opportunities for work and education (secondary and post-secondary) than rural areas. Social networks in urban areas are also a factor in internal migration. Following the 2010 earthquake that caused major damage in the capital, internal migration was observed away from the capital to rural areas ([Toffolon 2016](#)).

**Climate as a factor in migration:** Climate-related disasters and slow-onset impacts, such as salinization and erosion, are contributing factors to both rural-to-urban internal migration and international migration ([Protos 2017](#)). Disasters are a leading cause of displacement, and rising sea levels are contributing to displacement in coastal areas ([Baillat 2018](#)). Reduced rainfall and water scarcity contribute to migration and displacement, through their impacts on agricultural production and rural livelihoods. Internal migration is also increasing demand for scarce water in some destination locations ([Protos 2017](#)). Meteorological data and data on climate impacts generally, and impacts on migration and displacement specifically, are limited ([Singh and Cohen 2014](#), [Borde et al. 2015](#)). While the national government has set forth a climate action plan, much of it remains to be implemented, because of limited funding and governance challenges. The costs of not adapting to climate change has been estimated at \$15.7

million annually for the agricultural sector, and \$170 million for all sectors ([Borde et al. 2015](#)).

#### 4.1.2 ABOUT THE STUDY AREAS

Seven communes of the Northwest Department.



**Figure 13:** Map of the Northwest Department in Haiti

#### 4.1.3. LIVELIHOODS

According to a 2008 community survey of the Ministry of Agriculture, main economic activities of these 13 communal sections included: production of corn, beans, vegetables, cereals, livestock (sheep, goats, chickens, pigs, cows), production of charcoal, commercial activities, fishing, and production of canoes (on the island La Tortue). 70-99% of families in the different communal sections depend on agriculture, for an average of 91% ([MARNDP 2008](#)).

#### 4.1.4. CLIMATE VULNERABILITY

The Northwest department is among the most vulnerable areas of the country with regards to climate change effects. The sectors most at risk are agriculture and soil, coastal areas, and water resources. The most vulnerable populations are farmers, and people living in ecologically fragile areas such as near rivers or ravines or on steep hillsides ([Ministère de l'Environnement 2006](#)). Since 2018, the Northwest department has registered deficits in rainfall that have caused substantial losses in agricultural production and livestock, and limited access to food. Access to basic services is still a major challenge for the population of the Northwest, especially in the Lower Northwest. ([OCHA, 2021](#))

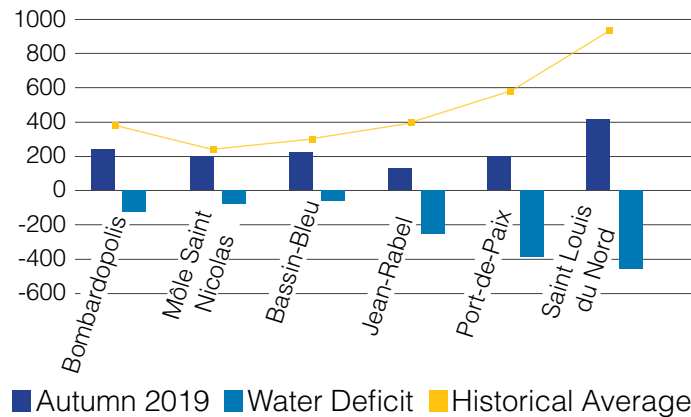
**Table 7:** Population data of the study areas in Haiti  
Source: Ministry of Agriculture, Natural Resources and Rural Development (MARNDP), 2008 ▼

Communal Section	Approx. Population (Source: IHSI 2015)			Occupation
	Male	Female	Total	
Môle Saint Nicolas, 3rd section Damé	263	250	513	Mostly agriculture. 70% to 99% of the families in the different communal sections depend on agriculture, for an average of 91%.
Baie-de-Henne, 2nd section Dos d'Ane	2,456	2,318	4,774	
Baie-de-Henne, 3rd section Réserve/Ti Paradis	8,092	7,636	15,728	
Jean Rabel, 2nd section Guinaudée	11,907	11,516	23,423	
Jean Rabel, 3rd section Vieille Hatte	14,084	13,864	27,948	
Bombardopolis, 1st section Plate Forme	6,925	6,725	13,650	
Bombardopolis, 2nd section des Forges	7,206	6,718	13,924	
Port-de-Paix, 3rd section Aubert	42,921	46,452	89,373	
Port-de-Paix, 5th section Bas-des-Moustiques	6,723	7,003	13,726	
La Tortue, 1st section Pointe des Oiseaux	9,724	9,476	19,200	
Saint Louis du Nord, 1st section Rivière des Nègres	6,050	6,202	12,252	
Saint Louis du Nord, 2nd section Derourvay	18,151	20,139	38,290	
Saint Louis du Nord, 3rd section des Granges	12,340	13,110	25,450	

#### 4.1.5. RAINFALL DATA

Data from the National Coordination of Food Security (Coordination Nationale de la Sécurité Alimentaire or CNSA) shows rainfall in 2019 that was well below 30-year averages for communities in the Northwest department. Rainfall deficits are shown in the green bars in the chart below:

#### Comparison of Rainfall in Autumn 2019 to Historical 30-Year Average



**Figure 14:** Rainfall data from 2019 in Haiti  
Source: The National Coordination of Food Security (document [available online](#) in French)

#### 4.1.6. TEMPERATURE DATA

In Port-de-Paix, the largest urban center in the Northwest department, summers tend to be long and very hot; while winters are also hot, with a dry and windy climate all year round. Historic temperature ranges between 24-31°C throughout the year.

#### 4.1.7. OTHER RELEVANT DATA

(Source: MARNDR, 2008)

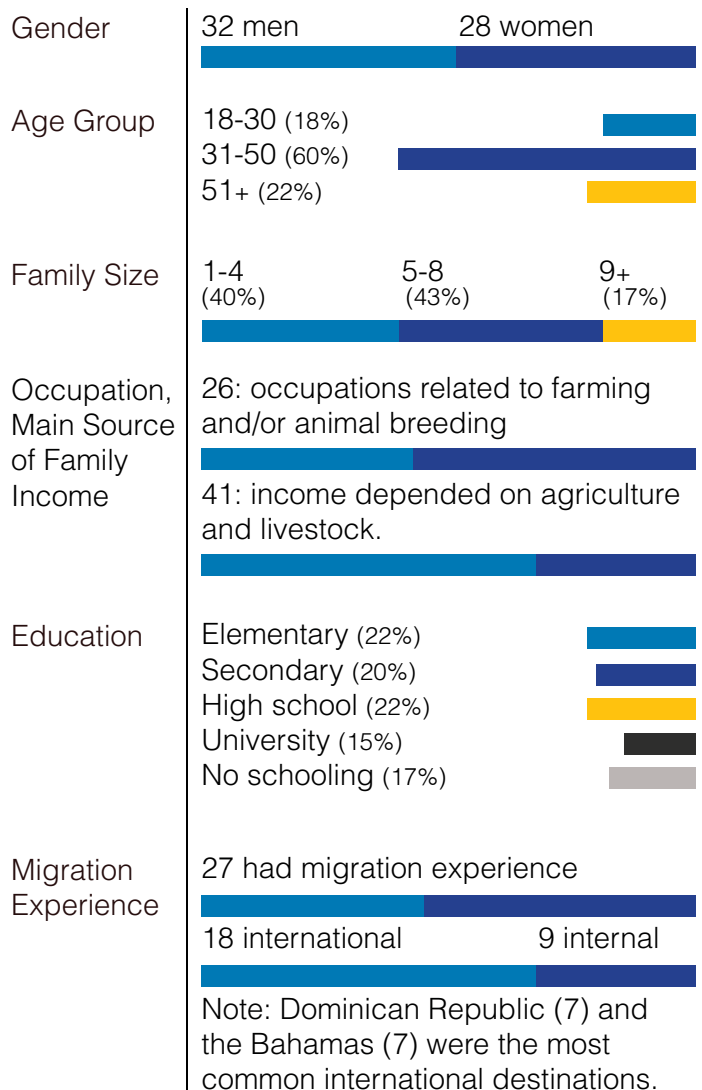
- Top destinations for internal migration from the 13 communal sections are Port-au-Prince (the capital of Haiti), Port-de-Paix (the capital of the Northwest), other departments or other communes.
- Natural risks vary between the communal sections, and include forming of ravines, landslides, water pollution, flooding, drought, mining, and salinization.
- Natural water sources represent the main point of access to water, followed by rainwater catchment and rivers.
- 10 communal sections have 0% electricity, while 3 sections have less than 10% electricity.
- Only one of the 13 sections has access to suppliers of agricultural inputs, while 8 have access to veterinary care and one has access to microcredit.

#### 1.8. LIST OF RECENT DISASTERS

- 2010: 7.3-magnitude earthquake with epicenter in the West department. Hurricane Thomas. Cholera epidemic.
- 2012: Drought. Hurricanes Isaac and Sandy.
- 2013-2014: Drought.
- 2015: Drought.
- 2016: Category 4 Hurricane Matthew.
- 2017: Hurricane Irma.
- 2018: 5.9-magnitude earthquake with epicenter in the Northwest department.
- 2020: Hurricane Laura.

## 4.2 OBSERVATIONS FROM THE INTERVIEW DATA

### 4.2.1 OVERVIEW OF THE SAMPLE



## 4.2.2 PERCEPTION OF CLIMATE AND ENVIRONMENTAL CHANGE

The effects of climate and environmental change were described by all interview respondents, across gender, age, and previous migration experience. Changes in rainfall patterns is a common concern – respondents indicated that both the frequency and the amount of rainfall has reduced significantly, and that sometimes it does not rain for months. Hotter and longer summers are another change that was often described.

Almost all respondents agree that these changes are making the land dry and unproductive, contributing to crop failure and food shortages. These changes are also affecting livestock, because their growth and breeding process are hampered by the lack of food and water. Respondents from the island of La Tortue described sea level rise among the challenges faced, reflecting that *“the sea is getting closer.”* In coastal areas, when there is not adequate seasonal rainfall, there are fewer fish to catch.

Of the 60 persons interviewed, 12 indicated climate and environment changes as their biggest concern for staying in their community. The concern described most by respondents is the lack of income-generation or work opportunities. Other concerns named were security, persecution, the broader socio-political situation, and a lack of educational and training institutions.

## 4.2.3 PERCEPTION OF ADAPTATION AND COPING METHODS

Many respondents (23 of 60) are trying to find alternate sources of income to cope with the effects of climate and environment change. Small business activities are a primary adaptation or coping strategy, described by 20 interview respondents. Coping strategies also include adjusting (i.e., reducing) consumption of food and water – *“live simply,”* in the words of several respondents – which may have negative impacts on health. Another coping method is purchasing with credit or borrowing money, often at high interest rates, to sustain oneself temporarily. Seven people mentioned mutual solidarity or microcredit as ways to sustain themselves; other respondents described increased reliance on remittances from family members.

The coping methods described in the interviews suggest that there is a large gap between daily needs and available income and food supply, in

part because of successive poor harvests and declining livestock health. One young man, whose family relies on agriculture and livestock for a living, considers that *“it is a suffering nowadays to work on the land because it doesn't rain on time anymore.”* While his family's options for adapting to climate change are limited, they try to make do. *“Well, if we don't find something big, we just take what we get. Sometimes we also have a small commerce. We have taken loans at high interest. For me, another resource should be good work. There should be irrigation and we should find an appropriate loan system.”* Only two respondents described adaptation underway in their agricultural practices.

One respondent, an older man who had spent 20 years in Port-de-Paix before returning to his community of origin, described the challenges his family faces in coping with climate impacts. *“We can no longer count on seasons, because it does not rain often,”* he said. *“To find means to live, sometimes a child sends some means for us and we have a small commerce that does not generate much money. Our land is there but due to [the lack of] rain we cannot find food.”* He does not perceive that climate adaptation is succeeding, nor that it will succeed without additional support *“No. Because there is a reduction in food security. Many types of animals have disappeared. I would need to find some lakes in the area, some agricultural banks to help us find seeds. I need to have more techniques about the way to prepare our crops.”*

Overall, 22 of 60 respondents indicated water access was their primary resource need, in terms of adapting to climate change. Other resource needs that were named include: improved access to financial capital (15 respondents); support to small businesses (12 respondents); agricultural extension (8 respondents); seed banks or drought-resistant seeds (5 respondents); and a wider range of work or livelihoods opportunities (5 respondents).

## 4.2.4 PERCEPTION OF MIGRATION

Between their own lived experience and having migrant family members, migration has directly touched the lives of three-quarters of the persons who were interviewed. Of the 27 respondents who have personally experienced migration, 13 had migrated once, and 14 more than once. More than half (15 of 27) reported positive changes from migration, including increased income, better family support, or small savings. One respondent, a 40-year-old man, described migration as positive, although not quite as impactful as he had hoped:

*"The problems of food and school were solved, even though the project I had was not solved, which was to have a big business before I left Nassau."*

Some responses conveyed negative changes from past migration experiences. *"I had problems because I left my home and all of my activities, I had a reduction in my savings,"* described a man in his 60s who had previously migrated to Port-de-Paix. Another respondent perceived *"no major changes"* because he was detained and deported back to Haiti. He plans to try migrating again, though, *"because there are no activities to make money to ensure the future of my children."*

Of the 17 respondents who have not migrated themselves but are from migrant households, nine reported positive changes from their relatives' migration. One respondent, a 53-year-old woman, described how relatives had migrated to Port-au-Prince, and how this made contributions to her family, including to agricultural activities. *"They found some activities that generate revenue. They always send money to us, even when we do not expect it. And at planting and harvest seasons, they always send money for us to pay the workers, which gives us a relief."* Another person, whose brother had migrated to Chile, perceives *"no change at all, because he does not help the family. Only we miss his presence among us."*

Among the 27 respondents who had migrated previously, 17 indicated that they did so for better work, income, or educational opportunities. The chance to earn even relatively small amounts of money may be seen as an improvement. *"Yes, cousins [have migrated to] the Dominican Republic,"* described one respondent, a 28-year-old man. *"The change is that every month some money is made, however little it may be."*

Many respondents (25 of 60) articulated threats such as insecurity or persecution in their home communities, as factors in considering migration. Responses such as *"the situation is difficult"* and references to *"misery," "hunger"* and *"suffering,"* point to a broader feeling of human insecurity. A few responses indicated significant life events, such as a spouse's death, or family reunification as motivations for migration. When asked about the

main reason for past migration, only one respondent directly named climate: *"The rain, because there is no work in my area, no means to take care of my family. I moved for a specific season - summer season. With the hot sun, there was no work."*

The links between climate change and migration, however, came through in respondents' descriptions of adaptation challenges and their related perceptions of migration. One respondent, a 42-year-old man, had previously migrated to the Dominican Republic and has a sibling who is working in the Bahamas. He described efforts to cope with reduced agricultural productivity in terms of survival strategy: *"When I see that the soil can no longer produce, I have to search for other means to live with my family so that we don't die of hunger. I gather piles of sand and gravel to sell. These adaptations are useful. If I did not adapt to the changes, life would have already thrown me down, it would have been difficult to cope with these difficult situations."* For these reasons, he has come to view migration as a coping strategy: *"There is no work in my home area, and the soil can no longer produce, [so] I have to say it is an option."*

Slow-onset climate change impacts are part of the story of human insecurity, and particularly food insecurity, for some families. In one of the most extreme examples, a 53-year-old woman described this in terms of subjective fear: *"I feel changes in weather conditions here because it hardly rains... there is a lot of impact, especially on the harvests, which means there is more hunger. Adaptations are not useful at all because things are getting worse, they become more difficult for people to function."* She had previously migrated and would consider doing so again: *"The main reason I left is to search for life because misery wanted to kill me and my children. I consider the option of migration as a way to cope with change and weather. If I leave, I will find some relief."*

The number of respondents who indicated that they have considered migration as a climate coping strategy (23 of 60), was just about the same as those who said they have not considered it (22 of 60).<sup>11</sup> In our small sample, women have experienced migration less than men (32% compared with 56%), but when it came to considering migration as a

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<sup>11</sup> This question was asked twice with slightly different wording, as the interview shifted from a focus on perceptions of climate change and adaptation to perceptions of migration. The first question (Q30) asked, "Have you considered migration as a way of coping with these changes [i.e., climate changes that the respondent had just named]? The second question (Q34) asked, "Have you or others in your family thought about moving away, because of the weather changes, and/ or changes in the land, water, or other natural resources?" Of the 60 respondents, 23 replied 'Yes' to both; 22 replied 'No' to both; 15 replied 'Yes' to one and 'No' to another.

coping strategy, their percentage (61%) was slightly more than men (56%). Financial costs, physical risks, and concerns about life in other places – people *“still may experience misery”* in migration, as one respondent observed – are among the reasons that some do not perceive mobility as an option. In our sample, people over 50 years of age were less likely to consider migration compared to people under 50, many of whom seemed hopeless about staying in their own community (*“no work here”*). However, some of the younger respondents pointed out ways migration may not work. One young man stressed that *“people’s dignity should be respected”* and, in terms of what they would recommend to someone else, commented: *“I don’t say yes, I don’t say no. It depends on where you want to go. I would say do not travel under bad conditions.”* Some respondents expressed a desire to see positive change in their community: *“invest here and live with dignity.”*

Respondents who see migration as a potential long-term strategy, described it as offering hope, the possibility of change, or a better future for their family that is not otherwise available. Some noted the experiences of other people who have migrated and succeeded, as a reason for perceiving migration as an option. A few described climate change impacts as a factor, noting that *“rain has become rare”* or that there are *“no crops”* and *“land does not produce.”*

A 49-year-old woman from a farming family, who had previously migrated to the Dominican Republic, using money borrowed from relatives, explained: *“It doesn’t rain much for our crops, there is no good harvest. It has an impact on livestock and on our health. Access to food is not easy.”* She went on to describe migration as her response: *“It [migration] was so that I could go work to make money to help my family. Suffering, misery, hunger, we can’t hold up anymore.”* Coping strategies offer her limited hope: *“We have to adapt to the change just so that we can live, but it causes us to lead a miserable life, because we cannot find everything we need to live.”* She would consider migration again, *“because there is no work in our country to make money to allow us to meet the needs of the family.”*

In our interview sample, 18 of 32 men have considered migration to cope with the climate changes experienced; 11 of the 18 perceive migration as a good long-term option, and eight

would recommend it to others. Thirteen of 27 women interviewed have considered migration to cope with climate changes; of them, six perceive migration as a good long-term option, and all six would recommend migration to others.

Most of the interview respondents who had not migrated before said that they rely on their friends and relatives for information on migration. Others who had migrated, indicated that they were speaking from their own experience. Only a few people interviewed seemed to have specific information about work opportunities in places of destination; or described the importance of having such information.

## 4.3 OBSERVATIONS FROM THE FOCUS GROUP DISCUSSIONS

Eight focus groups<sup>12</sup> were held in communities throughout Haiti’s Northwest department in April 2021. These focus groups reflected different profiles, in terms of age, gender, source of livelihood, and prior migration experience. Generally, focus group participants described climate change in terms of decreased rainfall, longer periods of drought, and increasing water scarcity. These changes are being felt acutely: *“Our area has almost become a desert,”* participants in one focus group described. Seasonal unpredictability is negatively impacting agriculture and fishing. *“Seasons are no longer respected,”* noted one group, and another described climate change as *“when seasons change compared to the way they used to be.”*

Focus group participants in La Tortue, a small island off Haiti’s northwest coast, described sea level rise among the slow-onset effects being felt. This group noted that *“a lot of people had no intention to leave. Now they don’t find anything to encourage them in the area.”* In five discussion groups, climate impacts were described as causing or contributing to *“misery”* or *“miserable conditions.”* Two groups associated climate change with food insecurity, and one with dependence on external aid. At least one group described the situation as being untenable – *“we cannot remain like this”* – and in another, participants described climate change as becoming a tipping point for displacement: *“The weather changes cause everybody wanting to run and leave the country, meaning that we cross the*

<sup>12</sup>One session could not be held because the participants did not want to sign the CWS Consent Form.

*ocean however rough it is, just to get out of here.”*

In most focus groups, participants described coping strategies being used, and named additional ways that climate adaptation could be pursued if more financial, material, and technological resources were available. High interest rates were named as a concern by several groups, and as a reason that mutual solidarity and community microfinance are valued. One focus group of all older adults, had specific recommendations for local government investments: *“Invest in youth, establish universities and professional centers... Help us to store water when it rains and help us exploit the wind and sun.”*

In four focus groups, participants described direct connections between climate change or its impacts on rural livelihoods, and migration. The other three described a more indirect link between climate change, human insecurity, and migration. Generally, participants described climate change as one of various factors that motivate or compel people to migrate. Youth migration is prevalent in many communities and is perceived to reflect better opportunities to find work or to study outside the community. In several groups, participants also described migration by older adults, heads of household, and whole families. Some described in-migration from other communities for seasonal work or, in one commune, because of violence and internal displacement.

Migration was described as taking place both within Haiti and across borders. Discussion participants tended to associate international migration with economic needs, hopes and opportunities. In some groups, discussants noted that migration is costly. More often, they described a need for better information about migration processes and requirements for safe and regular migration, and for accurate information about migration destinations, and perceived this information as valuable for sound planning. In several groups, participants noted that well-planned migration is safest; and suggested that poorly planned migration should be avoided. Discussants suggested that awareness-raising could encourage safer migration – *“avoid people migrating in whatever way,”* in one group’s words – and more strongly link migration to improving opportunities in community of origin.

Discussions noted that remittances are contributing to households and help people to avoid taking on

unsustainable debt. In one focus group, participants described diaspora investments in public goods or livelihoods assets for collective use. Generally, though, the discussions pointed to a gap between the potential for migration to contribute to adaptation and climate resilience (e.g., through skills or knowledge transfer), and the degree to which this is currently happening. Some discussion participants described a need to encourage diaspora involvement toward climate adaptation, including participants in one focus group comprised of returned migrants. In another group, participants described negative impacts from migration on the community, but concluded by naming international migration as a path to opportunities: *“If someone finds a better life it is because he decided to go abroad.”*

Focus group participants raised concerns about the loss of skilled labor, especially when young people leave for education and do not return, as this can result in a lack of teachers for local schools. In one discussion, participants named ‘brain drain’ as a challenge, noting that *“people who have most capacities do not stay here.”* Another emphasized the need to invest in vocational schools and teacher training, and increase incentives for migrants to return, and for residents to stay and to invest locally.

In a couple of groups, participants described migration as leading to abandonment of communities, and in one group expressed this in terms of the emotional impact on people who remain in the community. One group perceived that migration is weakening cooperation, including shared labor for agriculture – *“many houses are empty, people hardly group together anymore to work on each other’s land”* – and recommended that solutions seek to increase solidarity within the community.

## 4.4 KEY INFORMANT INTERVIEWS

Five key informant interviews were conducted, with local government officials from three communities. They reported that not much is being done at the village level regarding climate change, mainly due to constraints with budget and resources. The central government meets occasionally with local administrative offices, but not much has come out of these meetings yet. Some underground water sources have been identified, but steps have not yet been taken to access that water. Young

community members have been trained in areas such as agriculture, animal breeding and microcredit, to respond to these needs, but they are not positioned to implement their knowledge or skills.

The local officials interviewed see a direct relationship between climate change and increasing migration. Climate change creates big shocks, such as hurricanes, which cause people to lose key assets, e.g., houses, crops, and animals. Under these circumstances, people lose almost everything they have as a productive resource. In addition, unpredictable rain and extreme heat have started to affect crop yields and food security. For these reasons, they see that people often have little choice but to migrate. The key informants perceive migration as the only way for some people to cope with climate change; and for others, remittances from their family members are the only resource to cover the costs of adaptation.

Key informants indicated that the government takes measures to respond to migration, but that these are not sufficient. They see a need to improve access to accurate information about migration, and to create opportunities within the community, but perceive that not enough of either is taking place. Additionally, there is limited public support to people who have migrated. Sometimes people who migrate without documents are caught and deported back to Haiti empty-handed. In some cases, the government covers their transportation costs, but otherwise there is no psychosocial or other support for return migrants who have lived through deportation. Through the *Office National de la Migration* (ONM - National Office of Migration), the government establishes policies related to migration; but they lack means, especially financial resources, to apply these policies.

## 4.5 SUMMARY AND RECOMMENDATIONS

The effects of climate change are being felt – and often acutely – by all respondents, in terms of increasing water scarcity, lost crop yields, poor livestock health, and negative impacts on family income and health conditions. One in five interview respondents consider climate impacts to be their biggest concern with staying in their community. Climate change is also having negative impacts on children’s education, both by reducing income

available for parents to cover school fees and related costs, and because children need to spend more time to collect water for household and farm use.

Deforestation is also contributing to natural resource depletion and exacerbating the impacts of climate change. Community discussions noted that there used to be more trees available but that now, especially when drought occurs, there are no leaves available for mulching. People who used to farm, are now digging sand or rocks from riverbeds, because the land no longer provides a good yield.

Most people are trying to cope by finding alternate sources of income through small business activities. Women sell vegetables, when they can, and men cut trees and produce charcoal to survive. Some families are reducing food and water consumption in ways that can have negative impacts on health. Children struggle to concentrate and learn in school because families lack adequate food to give them. Many respondents discussed the importance of improving water access, and others pointed to the need to increase training and access to resources for climate-resilient agricultural techniques, and financial capital and support to small businesses.

In the study locations, respondents shared both positive and negative perceptions about migration, including from their own personal experience or that of friends and family. For many, migration is perceived to be a way to cope with the impacts of climate change, and with the broader forms of human insecurity that many people experience. Some shared examples of how migrants help their families back home, by sending remittances, and thus enable them to cope better with climate change and to provide for essential household needs. There are also concerns that communities are losing young, educated, and talented people because of migration: *“There are hardly any skilled human resources or professionals left anymore in the area,”* reflected participants in one focus group discussion. As a result, *“people who stay behind, have no means to progress.”*

The links between climate change, impacts on agricultural livelihoods, and migration came through in interview narratives and focus group discussions. While the one-to-one interviews with community members suggest that climate is one of several factors for migration, key informants consider it to be a main factor, and expressed concern that not

enough is being done to support local adaptation to climate change. Although the government has policies regarding migration, as with climate adaptation support, budget constraints are perceived to limit implementation. Interview respondents do not perceive much support available to migrants, except in some instances where the government paid for the transport cost of persons who had been detained and deported.

While many people have personal experience in migration or relatives who have migrated, there are also gaps in access to information about migration. Focus group discussions identified a need for a dedicated office or “information desk”, such as at a local government agency or within a community-based organization, to provide information and offer support. There is demand for accurate, reliably sourced information about migration and about requirements for accessing safe and regular migration pathways, partly out of concern that people are exposing themselves to risks by migrating through unsafe pathways. Security conditions within Haiti are such that internal migration poses its own safety threats, particularly for youth.

In community workshops to share preliminary findings, participants affirmed that such information about both internal and international migration would be useful, even if regular pathways for international migration are limited, and even recognizing that information itself does not prevent people from taking actions that involve risk. What is seen as important, is that there be more opportunities to orient people on migration, including through communication with others who have lived experience (both negative and positive) in migration; in part to strengthen the links between migration, climate adaptation, and community development more broadly.

Participants suggested that this report be shared with relevant national and local government offices; and with NGOs and community-based organizations that are engaged in advocacy for climate action and safe migration. Government agencies, NGOs and their funding partners should extend resources toward the recommendations that follow, and to related capacity-building for community-based organizations, particularly where impacted communities have limited resources and are already using these resources to cope with climate impacts as best that they can.

Recommendations from study respondents and discussions in Haiti include:

1. Improving access to water: Expand water sources available, including the use of solar pumps to access water for agriculture; training and material resources for rainwater harvesting and water conservation; construct reservoirs or artificial lakes in areas that experience water scarcity; and improve access to underground water sources by drilling wells and building cisterns, and by mobilizing external support to utilize underground water sources sustainably.
2. Climate-resilient agriculture and fishing: Training on conservation agriculture techniques, and application of soil conservation in farming, e.g., through use of contour canals and dry walls; access to better tools and equipment for agriculture and for fishing, including to vehicles or transportation to ensure products are not wasted; improve storage of post-harvest agricultural and fishing products, and increase access to post-harvest production resources (e.g., producing jelly or candy from fruit or cassava from manioc); expand seed banks and diversify/improve livestock breeds to withstand climate conditions; increase access to veterinary care; improve access to land for land-poor farmers; and access to natural insecticides or other pest management resources.
3. Ecosystem restoration: Training and community awareness about reforestation and afforestation; investments in tree nurseries and tree planting; and training on drylands conservation techniques and on effective and sustainable use of land that is becoming drier.
4. Access to affordable working capital: Improve access and resources to microcredit and mutual solidarity groups.
5. Migration information and support services: Increase access to accurate information about migration; increase community awareness about safe and regular migration; facilitate contact and communication with consular services for destination countries; provide information about work opportunities in migration, and related skills requirements; assist people to access state-issued identification documents and passports, at affordable costs; and advocate

for more resources for local government or local community-based organizations (CBOs) to provide information on migration (i.e., facilitate a more decentralized approach to extending this information).

6. Migration and adaptation: Strengthen links between migration and improving opportunities in communities of origin; create a structure to encourage people who migrate to invest in their community, such as through starting new businesses, creating jobs, or sharing knowledge and skills; and establish vocational training schools and provide teacher-training, potentially with a focus on skills that could be applied in climate adaptation and disaster risk reduction activities.

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## 4.7 APPENDIX: HAITI FOCUS GROUP SUMMARIES

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Baie-de-Henne</b> 2nd communal section</p> <p>10 participants; all depend on agriculture for a living</p> <p>Given title:</p> <p><b>“Get more knowledge in the commune about the question of migration and climate change.”</b></p>	<p><b>CC:</b> Irregular and inadequate rain.</p> <p><b>Effects:</b> Agriculture is affected, which affects the income, school fees. Soil degradation. Food shortage, hunger, misery. People forced to migrate to other places.</p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> Migration. Plant crop after the season. When the yield is bad, cut trees to produce charcoal for alternate income (causes deforestation). Sell animals (most die due to lack of food). Create a support group for small loans. Retain some of the rainwater by creating rock walls around the land.</p> <p><b>Resources people have:</b> Walls to retain rainwater using soil conservation techniques. Change to crops that can adapt to the changing climate. Learn about weather changes from radio.</p> <p><b>Resources people do not have:</b> Good agricultural techniques, insecticides, seed bank, better tools, water sources, solar energy pumps to water the land, cisterns for rainwater retention, training on agriculture and animal breeding.</p>	<p><b>Migration:</b> Migration is when someone leaves an area to go to another area; when a person travels abroad, meaning that a person leaves Haiti to go to a foreign country.</p> <p><b>Who/ where:</b> Young people, sometimes adults. To the Dominican Republic, Chile, Brazil, Port-au-Prince, Saint Marc, Gonaïves, Jean Rabel.</p> <p><b>Reasons:</b> Not enough work/ income opportunity for people. No school for vocational training or university for higher education. Mainly for higher education/professional training.</p> <p><b>Who returns/ why:</b> Young people who come back to teach, or those who start a business with the money capital earned outside.</p> <p><b>Resources/information people have:</b> One has to have a passport and a visa and respect principles of the government. Driver’s license if one plans to drive taxi.</p> <p><b>Resources people do not have:</b> An organization that works on migration, to give more information and to help people plan better (for safe migration).</p> <p><b>Forced-voluntary continuum:</b> Some people do not have a choice but to migrate. Some migrate to pursue their dreams.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Some people invest their money and knowledge in the community.</p> <p><b>Hurts:</b> Lack of hands at the farming fields.</p> <p><b>Migration and adaptation:</b> When people return, they can use their knowledge/ skills to help the communities adapt better.</p> <p><b>Migration making adaptation easier:</b> Money and knowledge/ skills invested by people who returned.</p> <p><b>Migration making adaptation more difficult:</b> (*Not discussed.)</p> <p><b>To increase positive impact:</b> To have the migrant workers return/ invest in the communities, share/ spread their knowledge, skills and experience.</p> <p><b>To reduce negative impact:</b> By having an organization that can provide actual information and raise awareness about safe migration, and even help people find work.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Bombardopolis</b> 1st section</p> <p>9 participants — non-agriculture</p> <p>Given titles:</p> <p><b>“Show the reality of the area.”</b></p> <p><b>“Share ideas to help one another to come up with a solution.”</b></p>	<p><b>CC:</b> Lesser/ infrequent rain, sun hotter, longer periods of drought. <i>“Before 1995 we never had to go for a full month without rain. Now there are periods of 6 to 7 months without rain.”</i> Less fish in the sea (more time at sea).</p> <p><b>Effects:</b> Food shortage (because the crops are affected), economy is affected. Lack of rain affects the fish in the sea. Charcoal making destroys the trees. <i>“The community has become more miserable.”</i></p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> Save money from income for difficult times, do small business to supplement income, join mutual solidarity groups (sol<sup>13</sup>), microcredit from NGOs, produce charcoal to supplement income.</p> <p><b>Resources people have:</b> Training (by an NGO) on disaster risks, work together as a community to adapt, fishing equipment.</p> <p><b>Resources people do not have:</b> Water. Big water reservoir to store irrigation water for dry seasons (increasingly longer). More animals. Change the breed of goats. Better, faster fishing materials (canoes with engines that can go further). More training to adapt better to the fishing sector. Better nets. Vehicle to travel and sell the fish. Training on sonar GPS.</p>	<p><b>Migration:</b> Going from one area to another to live.</p> <p><b>Who/ where:</b> Youth go to areas where they can find work. Also, people (fishermen) come here to live from other places like the town of Bombardopolis, Côtes-de-Fer, 2nd communal section of Môle Saint Nicolas, Gonaïves, La Gonâve.</p> <p><b>Reasons:</b> Persecution, misunderstanding. Young people migrate for education/ knowledge. On the other hand, fishermen migrate to our area to find better sea (thus fish). Mainly education, because there is nothing beyond 6th grade here.</p> <p><b>Who returns/why:</b> Usually the fishermen, when they find the situation is not as good as they had hoped/ expected.</p> <p><b>Resources/information people have:</b> A boat should be reliable, a car should have a good driver. Find more information about where you are going. <i>(*Question interpreted differently than intended in FGD guide.)</i></p> <p><b>Resources people do not have:</b> Travel safety. Boat should be reliable. Car should have a good driver. More information about the destination.</p> <p><b>Forced-voluntary continuum:</b> Both/depends on the person.</p>	<p><b>Effects on community:</b> Both good and bad.</p> <p><b>Hurts:</b> Migration causes the economy of the area to reduce because of decrease of human resources. Lack of teachers in schools. Sometimes young people are misguided.</p> <p><b>Helps:</b> People who leave to a foreign country sometimes help their family who stays in the community. Diaspora have built roads in the area. Some create a business in the area. Some young people come back and train other young people.</p> <p><b>Migration and adaptation:</b> Migration is related to coping strategies. It helps people adapt better.</p> <p><b>Migration making adaptation easier:</b> The remittance is helping families to cope. Migration making adaptation more difficult: People (fishermen) migrating out/ back are making adaptation difficult.</p> <p><b>To increase positive impact:</b> Create provisions for more investment here. Establish vocational schools. Increase capacity of the associations.</p> <p><b>To reduce negative impact:</b> Create better opportunities within the community so that people do not leave without examining the consequences. Help the schools. Train the teachers.</p>

<sup>13</sup> ‘**Sòl**’ is an informal system where a group of people decides to contribute a fixed sum of money for a fixed duration, with a fixed frequency. For example, a group of 10 persons can decide to contribute \$5 for a period of 10 weeks. Every week, one of the persons gets paid 10 x \$5 = \$50. This is different from microcredit or mutual solidarity and does not entail interest.

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Jean Rabel (01)</b></p> <p>10 participants, all women</p> <p>Given titles:</p> <p><b>“Getting to know/ curious to find out”</b></p> <p><b>“Brainstorming about the way we live”</b></p>	<p><b>CC:</b> Rain is always late. Always rains after the planting season, which affects harvest.</p> <p><b>Effects:</b> CC paralyzed the community in all ways. Affects animal breeding. Plants don't develop. Affects income. Cannot pay for school. Rivers dry.</p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> Borrow money, start groups of sol, start mutual solidarity groups to avoid extremely high interest rates.</p> <p><b>Resources people have:</b> Market of Lacoma<sup>14</sup>. Land where we can grow crops. Animals that can be sold in times of need if they can withstand the harsh weather. Organizations that give us training about the way we should grow crops, the way we should manage our animals better (CWS together with ADRUH).</p> <p><b>Resources people do not have:</b> Water—every family needs to have a well in the house. Loans—if we had an organization that could provide this. Solar pump system. Hospital. Better transport system of food to prevent waste. Find a company that would help us sell the agricultural products. Training on how to transform the agricultural products. Means to store the crop better (corn goes bad easily).</p>	<p><b>Migration:</b> Leaving one place for another—be it between countries or between communal sections.</p> <p><b>Who/ where:</b> Young people for higher education/ training. Many families leave together to go to another area. Adults and/or heads of families to other cities/countries for work and better life.</p> <p><b>Reasons:</b> To avoid persecution, to get higher education (parents sometimes follow), to find a better life, to be able to do commercial activities that they cannot do here. Most importantly, to change life.</p> <p><b>Who returns/ why:</b> Children/ young people after completing education.</p> <p><b>Resources people have:</b> Information on transport: one needs to ride a car, or a plane, or a motorcycle, or a boat.</p> <p><b>Resources people do not have:</b> Passport, visa, money.</p> <p><b>Forced-voluntary continuum:</b> Sometimes by choice, sometimes by force.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> When someone causing a lot of trouble leaves the community. Migrated people sometimes help their communities back home by sending money or things, creating jobs.</p> <p><b>Hurts:</b> When someone good for the community leaves.</p> <p><b>Migration and adaptation:</b> Families adapt better when someone in the family migrates for work (and helps in various ways). Migrants send money to help their families so that they do not have to borrow money. Migrants create employment in the area. Migrants help relatives who stay behind to set up small businesses.</p> <p><b>Migration making adaptation easier:</b> Those who migrate legally and find work can help their families adapt better.</p> <p><b>Migration making adaptation more difficult:</b> Some abandon family after migrating. Sometimes families break up when someone migrates.</p> <p><b>To increase positive impact:</b> Revenue increases, people build houses and land, start small commerce. (*Question interpreted differently than intended in FGD guide.)</p> <p><b>To reduce negative impact:</b> Help us find better resources. Help us progress.</p>

<sup>14</sup> The market of Lacoma is a big commercial center, where a lot of activities of purchasing and selling take place.

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Jean Rabel (02)</b></p> <p>11 participants Group of youth</p> <p>Given titles:</p> <p><b>“Association, training, information”</b></p> <p><b>“Reflection on climate change and migration”</b></p>	<p><b>CC:</b> It no more rains when expected. More drought.</p> <p><b>Effects:</b> It is no more possible to plan when to plant because of the unpredictable rain. It only rains when it is too late for the crops. People are cutting trees to survive, which is making the situation worse. <i>“Our area has almost become a desert.”</i></p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> People are trying to adapt by finding alternate sources of income, such as starting small commerce, doing casual jobs, making charcoal, forming a ‘sòl’ and so on. Some people are moving to other communities in search of better life.</p> <p><b>Resources people have:</b> Some young people got some training on animal breeding.</p> <p><b>Resources people do not have:</b> Water for irrigation and daily use. Training on adaptation. Equipment to transform the fruits (into jelly, lollipops, candy for example). Training on making better use of the changed land/ soil. Reforestation campaigns.</p>	<p><b>Migration:</b> It is when someone leaves a country to go to another country to look for a better life.</p> <p><b>Who/ where:</b> Mostly the youth, because they have the energy, and they don’t find anything to do here. To the Dominican Republic, Chile, the Bahamas, Brazil, Port-au-Prince, Gonaïves, Jean Rabel, Saint Marc, Cap Haïtien, Port-de-Paix.</p> <p><b>Reasons:</b> Misery, no activity for youth, means are insufficient compared to needs, no secondary or professional school in the community, no basic services. Some migrate because of threats and persecution. But mostly work, education and training.</p> <p><b>Who returns/why:</b> The youth sometimes return because they face insecurity or have difficulties to adapt.</p> <p><b>Resources people have:</b> People need training and capacity building, authentic sources of information on migration. <i>(*Question may have been interpreted differently than intended in FGD guide.)</i></p> <p><b>Resources people do not have:</b> Reliable organizations that can answer questions about migration, orient us to the embassies where we can find information about the destination; awareness on documents that help us migrate safely at a standard/ realistic price.</p> <p><b>Forced-voluntary continuum:</b> Some by choice, some by force.</p>	<p><b>Effects on community:</b> Community loses human resources. <i>“We have lost almost all our professionals in the community.”</i></p> <p><b>Helps:</b> Remittances, some people who have left and found work sometimes create small businesses in the community.</p> <p><b>Hurts:</b> Loss of human resources.</p> <p><b>Migration and adaptation:</b> Some families are able to adapt because they get help/ back up from members who migrated. Some young people who got training elsewhere sometimes come back and train others in the community.</p> <p><b>Migration making adaptation easier:</b> Better houses for family. Legal remittances (that eventually help adaptation).</p> <p><b>Migration making adaptation more difficult:</b> Sometimes families fall apart because lives are lost on the way. Sometimes children of the migrants grow up without proper guidance.</p> <p><b>To increase positive impact:</b> By taking measures that ensure safe migration, encouraging migrants to invest in the community, creating opportunities for better investments.</p> <p><b>To reduce negative impact:</b> Establish secondary and professional schools, so that the young can stay and find things to do here. Make basic services available.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>La Tortue</b></p> <p>11 participants —all previously migrated</p> <p>Given titles:</p> <p><b>“Advocacy on climate change and migration.”</b></p> <p><b>“Search for knowledge on climate change and migration.”</b></p>	<p><b>CC:</b> Irregular rain. Risen sea level. Drought.</p> <p><b>Effects:</b> The sea has gotten closer. <i>“That is to say, where we used to live, the sea has come to occupy that area.”</i> It is also rough more often. Poor harvest because of lack of water. Soil cannot produce anymore. Sea does not provide the quantity of fish it used to—even if we go far into the sea and spend a lot more time. Have to consume imported products. People are leaving the community. Those who stayed are losing reason to stay.</p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> Alternate income. Make charcoal. Depend on remittance, if anyone in the family migrated. Work in maritime transport. Join Sol. Take credit at high interest rates. Sell wood. Migrate to another area/ country.</p> <p><b>Resources people have:</b> More training on fishing, better fishing equipment/ boat, training on GPS. <i>(*Question was interpreted as what resources are needed.)</i></p> <p><b>Resources people do not have:</b> More training on managing fishing sector. More/ better fishing equipment. Training on GPS system. Agricultural technicians. Good veterinary agents.</p>	<p><b>Migration:</b> <i>“Migration is the displacement of a group of people from one point to another.”</i></p> <p><b>Who/ where:</b> All categories of people, but especially the young (under 18). To Port-de-Paix, Saint Louis du Nord, Bahamas, Dominican Republic, United States, Port-au-Prince.</p> <p><b>Reasons:</b> For school. To learn a profession. For better life. To avoid persecution, insecurity. Mainly for better life.</p> <p><b>Who returns/ why:</b> Those who migrated irregularly. They are usually caught and sent back.</p> <p><b>Resources people have:</b> Submit all necessary documents. <i>(*Question may have been interpreted as what resources are needed.)</i></p> <p><b>Resources people do not have:</b> Information about migration in each communal section, especially at the offices of CASEC (Council of Administration of the Communal Section). Help people get identity documents, which can facilitate their regular migration. <i>“The government should keep an eye out for people who migrate to help people find better treatment.”</i></p> <p><b>Forced-voluntary continuum:</b> Sometimes by choice, sometimes by force.</p>	<p><b>Effects on community:</b> The community loses a lot of skilled human resources.</p> <p><b>Helps:</b> When people send money or help their families/ community in other ways. Create activities and jobs.</p> <p><b>Hurts:</b> Many people die at sea. Loss of human resources. Cannot have high schools because the educated never return.</p> <p><b>Migration and adaptation:</b> Those who migrate for insecurity find peace. Those whose family members migrated can hope for a better future.</p> <p><b>Migration making adaptation easier:</b> Migration = making money = progress.</p> <p><b>Migration making adaptation more difficult:</b> Children grow up without parents. Sometimes they get trapped into unwanted circumstances.</p> <p><b>To increase positive impact:</b> A structure to facilitate people who migrate to invest in their community. Some concrete actions to encourage people to invest in the area.</p> <p><b>To reduce negative impact:</b> Vocational schools so that children can stay in the community. Hospitals. <i>“Government should make us feel that people in the area have value”.</i></p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Môle Saint Nicolas</b></p> <p>11 participants—no migration experience</p> <p>Given titles:</p> <p><b>“Heads together. Getting together. Working together.”</b></p>	<p><b>CC:</b> Quantity of rain—does not rain as often, but when it does, it causes flood., Water quantity/ sources have reduced. More sun. The land cannot produce anything.</p> <p><b>Effects:</b> Less local products, more imported products. Made life more difficult.</p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> (Especially young) gain knowledge/ skill to change profession/ source of income. Borrow money at credit unions. Mutual solidarity groups—daily sol. Some NGOs that “give” money (possibly meaning cash for work or microcredit programs).</p> <p><b>Resources people have:</b> Civil protection committee that circulates hurricane warnings. Animals that can be sold at time of need.</p> <p><b>Resources people do not have:</b> Community cisterns, impluvium [an uncovered water catchment built on a hillside], solar pumps, livestock (goats, sheep, pigs, cows), training on plants and animals that can tolerate/ survive drought, agricultural technicians, forest and fruit tree seedlings.</p>	<p><b>Migration:</b> Moving either within or outside the country.</p> <p><b>Who/ where:</b> Usually young people who have no activities/ work. To Chile, Brazil, Bahamas, Turkey, Guyana, Port-au-Prince, Dominican Republic, Mexico, Gonaïves, Saint Marc, Port-de-Paix, Cap Haïtien.</p> <p><b>Reasons:</b> Unemployment, misery, lacking services in the community, no security, no university, no vocational school, persecution. Mostly poverty and lack of services in the community.</p> <p><b>Who returns/ why:</b> Young professionals, such as teachers, engineers. So that they can offer their services to the community.</p> <p><b>Resources people have:</b> Training on regular migration, knowing where one is going, information on accommodation etc. (*Question may have been interpreted as what resources are needed.)</p> <p><b>Resources people do not have:</b> Office/ authority to take care of matters of migration in the commune, awareness raising and training about the process of legal migration.</p> <p><b>Forced-voluntary continuum:</b> Sometimes by choice, sometimes by force.</p>	<p><b>Effects on community:</b> People leave. Many houses are empty, people hardly group together anymore to work on each other’s land, children can no longer stay with their parents and get family education.</p> <p><b>Helps:</b> The people who migrate sometimes create new businesses, jobs.</p> <p><b>Hurts:</b> Loss of qualified human resources.</p> <p><b>Migration and adaptation:</b> Remittance. Job opportunities created by the youth.</p> <p><b>Migration making adaptation easier:</b> Better living conditions of family members. Motorcycle for moto-taxi driving, improved lodging and so on.</p> <p><b>Migration making adaptation more difficult:</b> (*Question was interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> (*Not answered.)</p> <p><b>To reduce negative impact:</b> Facilitate people to find more activities to stay in the community. Encourage a spirit of solidarity in the community. Provide security for each citizen. More awareness raising in the community to prevent people from leaving. Course on entrepreneurship at schools. (*Question was interpreted differently than intended in FGD guide.)</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Port-de-Paix</b></p> <p>12 participants —all men</p> <p>Given titles:</p> <p><b>“Brainstorming. Dialogue. Reflecting together.”</b></p>	<p><b>CC:</b> More heat, seasons have changed—we don’t know when to plant, can no longer separate hot/dry seasons from the rainy season. Irregular rain—<i>“it only rains when the hurricanes come”</i>.</p> <p><b>Effects:</b> Harvests have reduced. Rivers hardly have any water. Crops cannot develop. Animals die because there is no place for them to graze. We have come to depend only on external aid. No money to pay for school fees.</p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> Cut trees to produce charcoal. Small commerce. Mutual solidarity groups. People migrate outside the community. Animal breeding side by side with agriculture (so that some of them can be sold when the income is low).</p> <p><b>Resources people have:</b> Livestock (the ones that have not died), association of farmers that gives training on agriculture and animal breeding. A river (but no way to get the water to our land).</p> <p><b>Resources people do not have:</b> Manage the water of Trois Rivières [a river] and guide it into the area. Policy of reforestation in the area, organize training and raise awareness about reforestation. Support on utilizing underground water.</p>	<p><b>Migration:</b> When someone leaves an area, a department, a country to go and live in another.</p> <p><b>Who/ where:</b> Mostly young. Some adults. To Chile, Brazil, Port-de-Paix, Port-au-Prince, United States, Bahamas.</p> <p><b>Reasons:</b> To study because the area does not have high schools and tertiary education. Better life in another community/ country. Sometimes forced to move, for inappropriate behavior. Mainly better life.</p> <p><b>Who returns/ why:</b> Youth to utilize their skills and serve the community; adults to invest. (*Question may have been interpreted as who should return.)</p> <p><b>Resources people have:</b> Information on destination, money to pay for transport (*Question interpreted as what resources are needed.)</p> <p><b>Resources people do not have:</b> Right information about the place/ country one intends to migrate to—legal requirements for the journey/ destination (i.e., passport, visa).</p> <p><b>Forced-voluntary continuum:</b> By choice for better life, higher education. Also forced by mystics to leave the area. Sometimes people who did something wrong are ordered by the leaders to leave. Others are forced to leave the area because they suffer from persecution and threats.</p>	<p><b>Effects on community:</b> People leave. Hardly any youth in the area, hence very few trained human resources who could help the area progress.</p> <p><b>Helps:</b> Migrated member helps/ supports financially. Some start a business, create work. Hurts: Young children grow up without parents, do wrong things.</p> <p><b>Migration and adaptation:</b> Migrated people help their families adapt better. With the remittances sent by them, the families can start small commerce, and thus they do not have to borrow at a bank or a credit union.</p> <p><b>Migration making adaptation easier:</b> Those who migrate can learn new skills, have a better life, and can help their families. Migration making adaptation more difficult: Families break up when people leave the community for other places. Agriculture suffers because of lack of human resources.</p> <p><b>To increase positive impact:</b> If those who migrated successfully invest in the community to solve its problems and help it progress (by constructing new buildings, setting up a community bank, build a school for higher education, provide scholarships etc.)</p> <p><b>To reduce negative impact:</b> If the government provides the people with the basic needs, helps them cope with the changing climate, so that they can have a good harvest. (*Question may have been interpreted differently than intended in FGD guide.)</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Saint Louis du Nord</b></p> <p>12 participants, older men and women</p> <p>Given titles: (shortened)</p> <p><b>“Heads together. Brainstorming.”</b></p>	<p><b>CC:</b> Sun became hotter, sometimes does not rain, drought.</p> <p><b>Effects:</b> Rivers dry, cannot find water to shower or do chores. Lose harvest because of water scarcity. Fruits do not grow due to lack of rainwater. We work in vain. Some people migrate to other areas. Hardly any local production in the market.</p> <p><b>Opportunity:</b> None</p> <p><b>Adaptation:</b> Change to heat/drought tolerant crops. Do small business to supplement income. Sell assets and/or livestock. Some people migrate to other areas.</p> <p><b>Resources people have:</b> There is a river nearby, from where we can water our land (not during the dry seasons). Raise livestock so that we can sell them in times of need. Training on how to get a good yield, how to make compost.</p> <p><b>Resources people do not have:</b> Training on how to conserve water. Agricultural bank that will give microcredit during the planting season. Post-harvest facilities, i.e., to process agricultural products such as breadfruit, avocados, so that they do not spoil. Training on how to make the best use of underground water.</p>	<p><b>Migration:</b> Migration is when a person leaves a community to look for a better life in another community.</p> <p><b>Who/ where:</b> Mostly young, some adults. To the Bahamas, Cap Haïtien, Brazil, Port-au-Prince, Port-de-Paix.</p> <p><b>Reasons:</b> Too much hunger, no school for higher education, no hospital, no security. But mainly poverty.</p> <p><b>Who returns/ why:</b> Young people who went to learn a skill or a profession. (*Question may have been interpreted as who should return).</p> <p><b>Resources people do not have:</b> Money, passport, visa, information—about the destination, find a good driver, boat.</p> <p><b>By choice or by force:</b> Sometimes by choice, sometimes by force.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Migration helps the community a lot because if the youth did not decide to leave, there would be no trained people in the area. There are people who build houses in the area. There are people who open a business in the area. There are people who support their families with a small transfer.</p> <p><b>Hurts:</b> Some of the people who migrated to this community (from other communities) are bad people.</p> <p><b>Migration and adaptation:</b> Migration is related to the strategies to allow us to cope with the changes because the majority of the work done in the community is done by people who went to a foreign country. Many of the people who are trained in the area got trained because the youth decided to leave to get trained.</p> <p><b>Migration making adaptation easier:</b> People who migrate and do well can help their families adapt better.</p> <p><b>Migration making adaptation more difficult:</b> Children of migrants often grow up without parents’ guidance and fall into trouble. Sometimes people lose their lives on the way, causing endless misery to the family and community.</p> <p><b>To increase positive impact:</b> By creating more opportunities for the youth in the community—by establishing schools and training centers. By creating means to store water and making the best use of the wind and sun. (*Question may have been interpreted differently than intended in FGD guide.)</p> <p><b>To reduce negative impact:</b> Raise awareness about migration to prevent people from leaving in whatever way they can. Create opportunities within the communities so that people stay. Help incoming migrants to adjust better.</p>



**CHAPTER 5**

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# Indonesia

## 5.1 INTRODUCTION

Following a devastating earthquake and tsunami that hit Central Sulawesi province in 2018 – destroying land and crops, irrigation systems on family farms, homes, and small businesses – CWS has supported five communities in Sigi regency in long-term recovery activities. This effort now extends resources to farmers for incorporating climate-smart agricultural practices, such as increased use of drought-resistant crops, and to Community-Based Disaster Risk Reduction (DRR) Forums, which increase awareness of sudden- and slow-onset hazards and provide opportunities for joint action by citizens and locally elected bodies.

### 5.1.1 BACKGROUND

**Climate change impacts:** Indonesia extends across a large archipelago, and the nature and direction of climate change varies throughout its territory. Central Sulawesi's Palu Valley, the pilot study location, is in an equatorial rainfall climate zone. Provincial-level climate change data has shown a trend of increasing rainfall variance, meaning that rainfall amounts are becoming less predictable (ROI 2012). Deforestation is also occurring in the area, and has been linked with reduced watershed capacity, and increased risk of floods and landslides (Hein and Faust 2010). More than 40% of Indonesia's population depends on agriculture for their livelihood and is affected by temperature increases and variations in the amount and timing of rainfall (Bohra-Mishra et al. 2014; Call and Hunter 2018). In the Palu Valley, rainfed agriculture "is highly insecure and associated with fluctuating agricultural incomes" and water scarcity can be made worse by limited or non-operational irrigation (Hein and Faust 2010).

**Migration trends and drivers:** As of 2010, nearly 4% of the country's population had migrated internally within the previous five years. Much of internal migration is rural-to-urban; 56% of migrants are from rural places of origin (Damayanti and Susanti 2015). Since the 1990s, there has been an increase in internal migration by young, unmarried women (Call and Hunter 2018). In Central Sulawesi, local mobility over the past 50 years has included state-led resettlement of indigenous communities and of 'transmigrants' from other more populated regions, and internal migration within the province and from neighboring South Sulawesi, particularly

to "forest frontier" areas (Hein and Faust 2010). In 2019, more than 276,000 Indonesians had migrated internationally through state-administered labor migration programs. Nearly 70% of international migrant workers are women (BNP2TKI 2020). Central Sulawesi, though, is not a major source of international labor migrants, per official statistics (BNP2TKI 2020).

**Climate as a factor in migration:** Studies have found relationships between climate variation and migration in Indonesia – while also noting that these relationships are influenced by social and economic factors, that mobility responses vary within communities and households, and that it is often difficult to isolate climate as a sole driver of migration (Latifa and Fitriani 2013; Thiede and Gray 2017; Latifa and Romdiati 2017; Call and Hunter 2018). The effect of rainfall variation on migration may depend partly on access to other livelihood activities as a form of in-place adaptation (Thiede and Gray 2017).

In Palu Valley, lack of rainfall and limited capacity to adapt to drier conditions has contributed to short-distance, rural-to-rural migration as a form of coping with drought and water scarcity (Hein and Faust 2010). Less often, family members migrate to urban areas, including on a temporary or circular basis (Hein and Faust 2010). Research in Lombok, a different part of the country, found an increase in international labor migration by men who have little or no prior internal migration experience. This is related to multi-year impacts of climate variation on cash crop production and accumulation of debt by farmers (Latifa and Fitriani 2013; Latifa and Romdiati 2017).

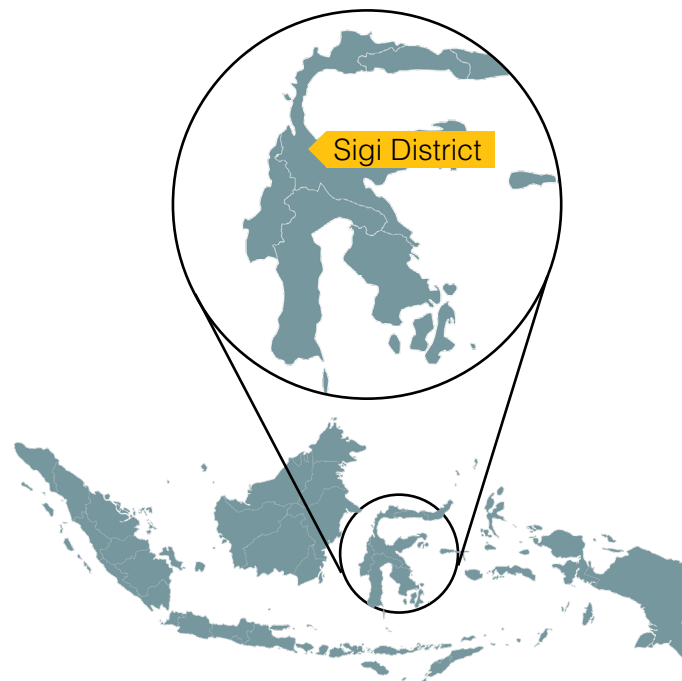
Authors have noted that empirical data on climate change and migration remains limited, and government agencies that keep statistics on migration do not yet track migration related to climate change (Latifa and Romdiati 2017; Wahyuni et al. 2020). In addition, government statistics count people as internal migrants only if they cross provincial borders. Shorter-distance migration, which can be linked with climate variation, is not tracked (Guntoro 2016).

### 5.1.2 ABOUT THE THE STUDY AREAS

The pilot study took place in four villages – Bule Bete, Pakuli Utara, Rogo and Simoro – in Sigi district (*kabupaten* or regency), in Central Sulawesi province.

Community	District & Sub-District	Approx. Area (Square Km)	Approx. Population		Households / Agricultural Households	Livelihood
			Male	Female		
Rogo	Sigi, Dolo Selatan	59.24	879	840	549/280	Agricultural: 76%, Non-agricultural: 24%
Bulubete	Sigi, Dolo Selatan	72.44	871	817	472/280	Agricultural: 56.73%, Non-agricultural: 43.72%
Pakuli Utara	Sigi, Gumbasa	10.28	837	730	437/258	Agricultural: 61%, Non-agricultural: 39%
Simoro	Sigi, Gumbasa	14.27	484	467	269/250	Agricultural: 79.97%, Non-agricultural: 20.03%

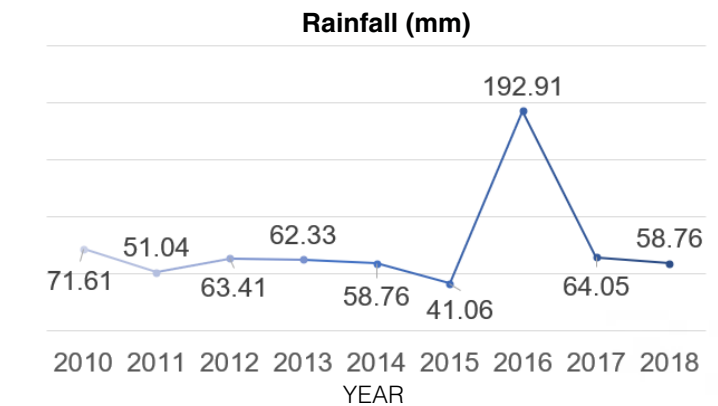
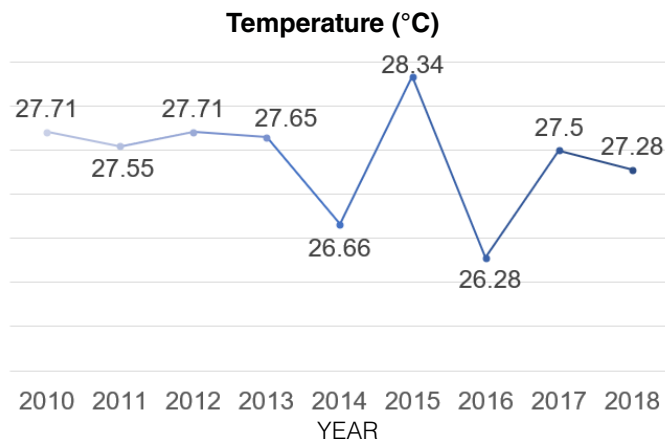
**Table 8:** Population data of the study areas in Central Sulawesi, Indonesia  
Source: Survey conducted by CWS Indonesia in October 2020



**Figure 15:** Map showing Sigi District in Indonesia

### 5.1.3 CLIMATOLOGICAL CONDITIONS

Air temperature of Sigi Regency is tropical, and is highly influenced by sea level and the distance of respective area from the coast. The temperature has historically ranged from 25° to 31° C, with humidity level ranging from 71% to 76%.



**Figure 17:** Rainfall of Sigi Regency (mm), 2010-2018  
Data source: Sigi Regional Government Work Plan, Sigi Regency 2019 and Regional Medium Term Development Plan (RPJMD) 2016-2021

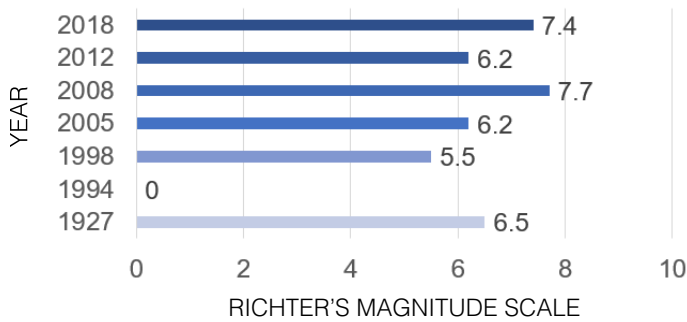
### 5.1.4 COMMON DISASTERS

- **Landslides:** Sigi Regency has a 40% slope, which falls within the “steep” category. Sigi’s topography, combined with high rainfall and soil types that are sensitive to erosion, increases vulnerability to landslides.
- **Floods:** Historically, Sigi has had abundant water, which leaves it vulnerable to the destructive power of water. Forest exploitation is causing erosion and sedimentation in the Palu River. When heavy rain occurs, the river, no longer able to contain water volume, overflows and causes floods in the nearby areas.
- **Drought:** Over the last few years, drought has become a common event during dry season.
- **Earthquake:** The existence of the Palu Koro fault in the middle of Sigi Regency makes this district prone to strong earthquakes.

**Figure 16:** Temperature of Sigi Regency (°C), 2010-2018  
Data source: Sigi Regional Government Work Plan, Sigi Regency 2019 and Regional Medium Term Development Plan (RPJMD) 2016-2021

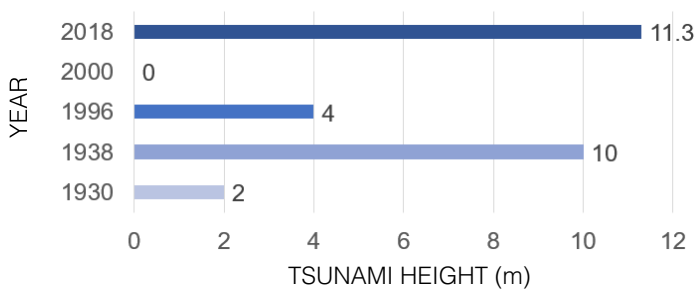
## 5.1.5 RECENT DISASTERS

### Earthquakes in Central Sulawesi



**Figure 18:** Earthquakes in Central Sulawesi  
Source: Central Sulawesi Gov. Regulation No 10/2019.

### Tsunamis in Central Sulawesi



**Figure 19:** Tsunamis in Central Sulawesi  
Source: Central Sulawesi Gov. Regulation No 10/2019.

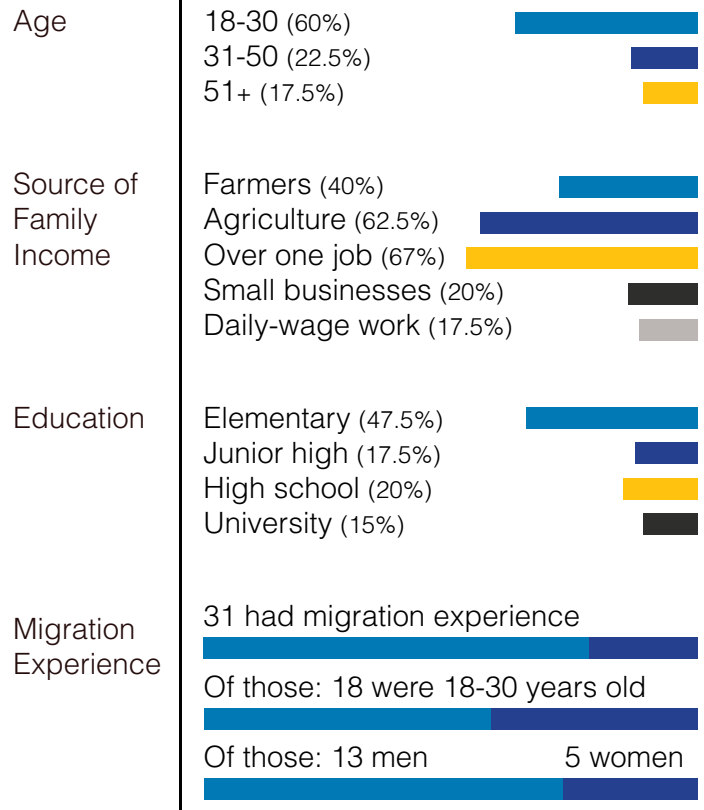
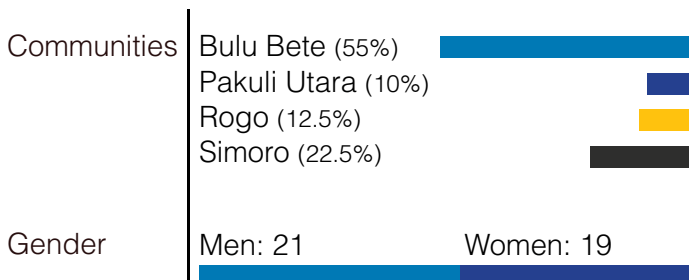
### Floods in the Study Villages

Community	Year
Rogo	1999, 2008, 2011, 2019
Bulubete	2010, 2020 (3 times)
Pakuli Utara	2006, 2017, 2018, 2019, 2020
Simoro	1994, 2018

**Table 9:** Floods in the study villages of Central Sulawesi  
Source: CWS interview with village government during a survey conducted in November 2020

## 5.2 OBSERVATIONS FROM THE INTERVIEW DATA

### 5.2.1 OVERVIEW OF THE SAMPLE



### 5.2.2 PERCEPTION OF CLIMATE AND ENVIRONMENTAL CHANGE

All respondents feel the effects of climate change in some way, mostly in terms of unpredictability of heat and rain, longer dry seasons, and extreme heat during the hot season. Respondents also perceive that the environment has changed: land is getting covered by sand, wells and springs are drying up, rivers now overflow during heavy rain, and soil is growing drier. Many describe growing water scarcity, especially scarcity of clean water during dry seasons.

While describing their biggest concern, 20 of 40 respondents named floods, which have impacted several of the study locations in the past year (including Bulu Bete multiple times). Flooding has had negative impacts on agricultural production. One respondent, a 79-year-old man who depends on farming, noted that *“due to constant flooding, we cannot cultivate our rice field. The land... has been drowned with floodwater coming from the river. So, we were forced to open a new cornfield to meet our daily needs.”* Five mentioned earthquakes as a top concern, as the study areas are located very close to the epicenter of 2018 Central Sulawesi earthquake that killed thousands of people and left many villages with long-term damage.

Only three respondents named slow-onset climate

changes – drought and lengthier dry seasons, and their impacts on agricultural production – as their biggest concern. However, slow-onset effects featured throughout the broader interview narratives that respondents shared, as 19 of 40 respondents described a relationship between weather changes and decreased agricultural production, and 13 named drought or increased heat specifically. One farmer, a 25-year-old man in Simoro village, described longer dry seasons and drier soil, as well as more unpredictable weather patterns. *“The land is increasingly difficult to cultivate,”* he explained. *“Farmers have become prone to harvest failure or decreasing yields. That means they don’t reap from money spent to buy seeds and fertilizer, [it is a] loss of investment. We must triple the efforts to have a successful harvest. It is not like it used to be, plant once and it would grow easily.”*

### 5.2.3 PERCEPTION OF ADAPTATION AND COPING METHODS

Most respondents (31 of 40) have tried at least one climate adaptation strategy or coping method, and 22 perceive that their adaptation strategies or coping methods have helped. Common strategies for adaptation in agricultural households include: changing seeds and crop varieties; spraying more fertilizer; working together to clear the farmland (i.e., to remove sand and silt that accumulated after floods); starting new business, particularly by women; casual labor in sectors that are not as affected by weather and environment changes, such as selling coconut husk; shift to fishing during the rainy season; drilling wells for alternate sources of water for irrigation; and activating a village warning system to get forecast of heavy rain and potential flash floods.

One respondent, a 26-year-old man who works in a government office, described his family’s efforts to adjust to increasing heat. *“We plant trees in our yard and installed a water pump with 12 to 16 meters depth. Yes [this has helped], because since there were trees in front of and next to our house, the air feels fresher than before, no longer hot. I think we need to plant more trees on the banks of the river. This may help to prevent flooding, and planting trees along the side of the road reduces heat.”* A 46-year-old woman in Simoro village, also described tree planting as a coping strategy: *“We plant avocado and candlenut trees because we hope it will increase our family income, make the air in our house fresher, and the trees can protect us from today’s heat.”*

Some respondents said they do not need new or additional resources for climate change adaptation, because they can either manage this by themselves (e.g., through storing and filtering water, or acquiring new skills for more adaptive agriculture), or have already received government assistance for farmland restoration (e.g., removing sand that has accumulated in farmland, planting trees, or to manage the costs of better seeds and fertilizer).

Others described a need for support in improving access to water, particularly as drought and water scarcity are becoming more prevalent. A 27-year-old woman in Bulu Bete, who earns income as a teacher and through small business activity, indicated that *“what we need is enough supply for clean water. During prolonged drought in our village, water volume was decreasing, so our village is faced with clean water scarcity.”* Another respondent, a 25-year-old man who farms for a living, stated more simply that *“tools for storing water”* are most needed. Some respondents whose land was impacted by floods, also called for support to long-term recovery. *“Currently what is needed is to restore agricultural land that has been flooded,”* described a 29-year-old woman in Bulu Bete, *“but I don’t know how to restore a land. Our main income previous was from farming, we grew corn and sweet potatoes. But not anymore because our land has been damaged by heavy flooding.”*

### 5.2.4 PERCEPTION OF MIGRATION

Migration had touched the lives of nearly all the interview respondents in our sample. Most respondents, 31 of 40, had personal experience in migration. Of those who did not, 8 of 9 have family members who have migrated, and most are receiving remittances to assist with daily expenses. About half (15 of 31) of respondents with lived migration experience indicated that they had migrated for work. Five migrated for education, and three respondents migrated to find new fertile land. More than half (18 of 31) reported an increase of income through migration.

Of the 31 respondents with lived migration experience, most had migrated internally within Indonesia, including both short- and long-distance migration: 11 to other provinces, 8 to other districts (*kabupaten*), and 7 within the district to the main town (i.e., regency capital). Three respondents – all women – had migrated overseas for work in domestic labor, through Indonesia’s state-administered labor migration program. Labor migration to other provinces in Indonesia was

described more by male respondents than female respondents.

For the three women who migrated internationally for work, motivations included both tangible opportunities to earn income and improve their family's economic situation, and some subjective motivations or intangible factors, such as *"nothing else to do here, I was bored"* and *"decided to try my luck by leaving the village and going abroad."* Men who migrated for work in other parts of Indonesia – such as Kalimantan Island, Lombok in West Nusa Tenggara province, and Papua – described primarily income and family needs as their motivation.

In our sample, both men and women seemed to have similar perceptions of migration. Men have mostly migrated to nearby villages or to the provincial capital for work, whereas women went overseas, and to other provinces. According to some respondents, the main reason why some women do not consider migration as an option is because they have family responsibilities to care for elderly parents and/or young children. But among the interview respondents, there was little difference between the rate of men (11 of 21) who have considered migration, compared with women (6 of 19).

While the interviews suggest a high level of mobility in the area, or at least within our interview sample, about half of the persons interviewed rejected the idea of migration as a way of coping with climate change or environmental pressures.<sup>15</sup> Homemakers and small business owners mostly indicated that they did not perceive migration to be a viable coping strategy. One respondent, a 26-year-old man who works in his village's local administration, suggested that *"migration is not the solution, other areas are also facing similar changes. Besides, we may end up move to someplace hotter which will not be good for me and my family."*

Of those who indicated that they have considered migration as adaptation or a coping strategy, seven are farmers. There were two landless farm laborers among the respondents, both of whom consider migration as a coping strategy. One interview

respondent from Bulu Bete, a 25-year-old unmarried man, described how he may migrate to another province if agricultural production continues to worsen. *"My cacao plants' production has been declining because of weather changes,"* he noted. *"If nothing else can be processed, I will have to leave my village. I have plans to migrate to work outside the regions. The plan is to go to Kalimantan, where I can work on the lighthouse project. With my income, I may be able to help my family, especially to make ends meet for myself."* Generally, respondents who perceive migration as a good long-term option, described better work or income opportunities elsewhere and/or challenges in finding work or income opportunities in their present location as key factors.

Place attachment and a desire to maintain connections with home communities are strong for many respondents, and a factor in perceptions that migration is not a long-term solution. One 22-year-old man, who had already gone several times to other provinces for work opportunities, could not imagine migrating permanently: *"Honestly, my family and I have never thought of moving from here. This is my hometown, and this is where all my relatives live. Besides, I don't know where to move."*

An older man, who is a farmer in Simoro, described his attachment to his home village as a strong motivation not to migrate, even as climate conditions grow more challenging. *"If prolonged drought keeps happening, I may go to find a place more conducive for agricultural activities. But I am still able to produce enough yields to support my life, so I haven't thought about moving to another place."* He explained his connection to the community and especially to the land: *"I used to think about moving to a more fertile area, but since my wife died, the thought of moving was gone. I still follow my tribe's belief system that if the spouse dies, and is buried in the land where she dies, the spouse who is still alive should not leave the land where she is buried. Because there is deep attachment to one's spouse's final resting place."*

Other reasons described for not considering migration as a good long-term option include risk aversion or a sense of uncertainty about moving to

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<sup>15</sup> This question was asked twice with slightly different wording, as the interview shifted from a focus on perceptions of climate change and adaptation to a focus on perceptions of migration. The first question (Q30) asked, "Have you considered migration as a way of coping with these changes [i.e., climate changes that the respondent had just named]? The second question (Q34) asked, "Have you or others in your family thought about moving away, because of the weather changes, and/ or changes in the land, water, or other natural resources?" Of the 40 respondents, 19 replied 'No' to both questions; 11 replied 'Yes' to both; and 10 replied 'Yes' to one and 'No' to another.

a new place, perceptions that finding work in new locations would be difficult, negative previous migration experiences, and perceptions that migration is too costly to be a viable option. Some respondents expressed optimism about staying in their current location and noted that, with adequate resources, it should be possible to adapt to climate change impacts.

More than half of the respondents (23 of 40) said that they have some sort of information about migration, particularly about work opportunities and costs involved in migrating. Most of these respondents indicated friends or relatives as their main sources of information.

## 5.3 OBSERVATIONS FROM THE FOCUS GROUP DISCUSSIONS

Six focus groups were conducted, three with all women and three with all men. In general, perceptions of climate change in the focus group discussions match perceptions from the interview responses. Flooding is seen as a primary disaster concern, even with the 2018 earthquake having impacted the area. (In Rogo village, the men's focus group expressed roughly equal concern about earthquakes and flooding.)

While flooding is a main concern, discussions also brought up challenges from slow-onset changes, such as longer dry seasons, drought, and higher temperatures. These are perceived to impact farmers' livelihoods and the local economy. People are already trying various methods of adaptation: changing crops, including with some agricultural extension support; looking for land with better soil; and finding other sources of income, such as short-term work. For women, small business activities are one way to cope with climate change impacts and to offset negative impacts on agricultural income.

Women seem to be more aware than men of the decreasing quality and quantity of water – both for household and agriculture and use – perhaps because women take responsibility for most daily household work. Rainwater storage was described as an adaptive strategy in one group. In one community, the local government has already built a new borehole, and plans for a

water filtration system to clean the water. The local administration has started to clean the irrigation system with the help of the community members but lacks heavy equipment for a more thorough system cleaning.

Most of the resource gaps described in the focus groups are related to larger-scale recovery or disaster preparedness activities, which are expected to be undertaken by the local government. One group identified a need for assistance to remove excess soil from the river and for the local government to complete its river normalization project. Another recommended support by the municipal agricultural office to access organic fertilizer and heavy tools for field drainage.

In all focus groups, participants shared similar perceptions of migration, which they generally described as “*movement from one location to another*”, or “*moving out of the village.*” In the Indonesian language, a simple word for migration is ‘*merantau*’, which means a temporary change of place to make a living. In practice, people may move away for work for years, but eventually come back to live with their family in their community of origin. When asked about migration as form of adaptation in this study, though, most focus group participants described short-term movement. This was often described as migration for seasonal work, such as moving away for one month while waiting for the harvest time.

In two of the focus groups, participants agreed that migration is a strategy to cope with climate change. In the other four discussions, participants see migration as a decision made based on economic factors. In one group, discussants explained that so long as there is fertile soil and work opportunities in their village, no one needs to migrate. In the discussions, though, participants noted that they know of several people (or families) from their village who migrated because they could no longer depend on their farm production.

While the focus group discussions suggest that migration is not a preferred option, it is a relatively common practice and participants tended to be aware of financial risks involved in migration. Some focus group participants noted the need to prepare for all kinds of circumstances before migrating, and that persons must have all necessary information to take informed decisions.

## 5.4 KEY INFORMANT INTERVIEWS

Seven key informants, including four village leaders and three government officers, were interviewed in March and April 2021. As part of climate change mitigation strategies, and to assist impacted agricultural communities, Central Sulawesi's provincial Agricultural Office has begun planting 1,000 productive trees, both for conservation and economic purposes.

Key informants described efforts by village administration to work with relevant provincial departments, such as Central Sulawesi's Agriculture and Animal Husbandry office, to distribute coconut seeds in the area. The provincial Agricultural Department has started several programs, specifically designed for farmers, including programs to improve farmers' skills. Agricultural Technology Studies (BPTP) is providing research support to find solutions for 5,000 hectares of disaster-affected land. The village administration in one community has requested the district government to normalize the river. The Agricultural Office and BPTP, in coordination with the Public Works and Housing Office (PUPR) and Regional Disaster Management Agency (BPBD), have been working together to lend heavy tools to farmers so that they can clear up the river as well as the arable land.

The Agricultural Office of Central Sulawesi has been campaigning for farmers to shift commodity production from rice to maize, tomato, and spices, and is planning to support this with an official regulation in the province. Community members can choose between commodity exchange or waiting for land recovery program implementation. Key informants also indicated that they are working together with NGOs and INGOs on climate change issues, with a focus on how climate change is impacting the agricultural sector.

According to village chiefs who were interviewed, climate change has deeply affected the economy. Farmers have lost their livelihoods and must look for a job elsewhere as a construction worker or migrant worker, though they still have a plan to return to their village. Village governments recognize this trend and consider the main reason for migration to be economic, given limited income-generating opportunities in the communities. When people move to other villages or to a town or city, they do not need any village administration support, and

there is no specific regulation for people who migrate and seek work within the country – government regulations refer to the labor law, which has no arrangements for migration.

For people who plan to work overseas as a migrant worker, the village administration provides advice, such as information about proper procedures for working overseas. As part of national government policies, everyone who will work overseas must submit letter of information (*surat keterangan*) from their village administration. The government's migration policy focuses on migrant workers who will go overseas, regulated by Law No. 18/2017 on Protection for Indonesian Migrant Workers, which aims to provide protection for overseas migrant workers and their families. The government also organizes information campaigns to warn Indonesians against migrating irregularly for work in other countries.

## 5.5 SUMMARY AND RECOMMENDATIONS

While all respondents perceive slow-onset climate changes and impacts on the environment, sudden disasters and especially floods are a bigger concern for study respondents. Many are feeling the effects of drought and unpredictable rainfall on agriculture, are adapting to (or coping with) these changes in various ways, and generally perceive adaptation efforts to be succeeding so far.

There is a high level of mobility in the area, including short-distance and temporary or seasonal migration, and value placed on having accurate information to inform sound migration planning. Generally, though, migration is not perceived as a long-term option, and study respondents described a strong preference for in-place adaptation. Interviews and focus group discussions suggest that men are more open to considering migration than women, and younger people are more open towards migration irrespective of their previous experience.

Local and provincial government agencies have started programs to support climate change adaptation and mitigation, such as providing information and guidance on changing seeds and crop varieties, and support to tree planting. Adaptation activities are primarily focused on agricultural and livelihood resilience. Currently there

are regulations and policy responses for international labor migration but not internal migration.

In the community report-back workshops to share preliminary findings and discuss recommendations, participants suggested that the findings of this report should be shared with the village government; community leaders; farmers' associations and other community associations; the Sigi district head (Regent); Ministry of Villages, Underdeveloped Regions, and Transmigration; and the Sigi District Government, BPBD (Provincial Disaster Management Agency) and district legislature (DPRD).

Recommendations from study respondents and discussions in Indonesia include:

1. Access to water: Expand ways to harvest and retain rainwater; and invest in clean water distribution systems.
2. Climate-resilient agriculture: Provide more information and extension training on drought-resistant crop varieties, and cultivation methods that are suited to the changing climate; improve access to organic fertilizers and pesticides; and increase information available on climate change and its impacts on agriculture.
3. Livelihoods: Expand work opportunities within the community.
4. Disaster risk reduction and long-term recovery: Restore the drainage system damaged by floods and earthquakes; invest in normalization of the river to prevent overflow; remove sand from farming lands and restore disaster-impacted lands to arable conditions; and increase information available on climate change impacts on disaster risks.
5. Migration information and support services: Provide accurate information on destinations, including work opportunities and required skills and accommodations in migration destinations, to avoid unwanted difficulties in migration.

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## 5.7 APPENDIX: INDONESIA FOCUS GROUP SUMMARIES

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Bulu Bete</b></p> <p>9 participants, all men</p> <p>Given titles: (shortened)</p> <p>“Light our spirit”</p> <p>“Impact of disaster”</p> <p>“Climate change and migration”</p> <p>“Change”</p>	<p><b>CC:</b> Weather became unpredictable, temperature seems to be going up, extremely heavy rain in short duration (even cause flood), drought lasts 2 – 4 months.</p> <p><b>Effects:</b> Water scarcity, harvest dropped to half, hence income dropped, farmers/ landowners finding other sources of income, floods &amp; landslides destroy crops.</p> <p><b>Opportunity:</b> Increased work opportunity for rock and sand laborer.</p> <p><b>Adaptation:</b> River normalization project by government, changing crops, construction work to supplement income, searching for better land.</p> <p><b>Resources people have:</b> Knowledge of cultivating in lands that were covered by sand.</p> <p><b>Resources people do not have:</b> Field drainage to return soil to their field capacity. Heavy equipment for river normalization and to contain overflowing water. More information on CC, what can be done to minimize the effects. Small loan groups for farmers. Tree plantation along the river.</p>	<p><b>Migration:</b> To move outside the village and live there.</p> <p><b>Who/ where:</b> Women to middle-eastern countries for household work, to West Sulawesi for bank work, to Palu for construction work.</p> <p><b>Reasons:</b> Income, family support.</p> <p><b>Who returns/why:</b> Those whose employment contract ended, those who need to harvest their crops.</p> <p><b>Resources people have:</b> Information about destination.</p> <p><b>Resources people do not have:</b> Financial assistance.</p> <p><b>Forced-voluntary continuum:</b> Mostly by choice for income/ better life.</p>	<p><b>Effects on community:</b></p> <p><b>Helps/hurts:</b> Helps if one has good income. Can invest on home and other property.</p> <p><b>Migration and adaptation:</b> Yes, if there is no other alternative. No, if there are other CCA options available.</p> <p>(The following themes were not discussed because of lack of time):</p> <p><b>Migration making adaptation easier:</b></p> <p><b>Migration making adaptation more difficult:</b></p> <p><b>To increase positive impact:</b></p> <p><b>To reduce negative impact:</b></p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Bulu Bete</b></p> <p>8 participants, all women</p> <p>Given title:</p> <p><b>“Hot temperature and excessive rain are the push factors behind migration”</b></p>	<p><b>CC:</b> Drought, heavy rain that causes floods, warmer weather, prolonged dry season, unpredictable weather.</p> <p><b>Effects:</b> Floods caused by heavy rain damage crops, which leads to less income, more pests, more health issues. Floods also damaged the village drainage pipes. Prolonged dry season affects crop yield.</p> <p><b>Opportunity:</b></p> <p><b>Adaptation:</b> Change crops (e.g., rice to cocoa). When there is shortage of rice, consume bananas and corns. Alternate sources of water by NGOs. Alternate sources of income, e.g., short-term work.</p> <p><b>Resources people have:</b> Water resource project by the govt.</p> <p><b>Resources people do not have:</b> More information on climate change, fertilizer and pesticides, removal of the sand left by the floods, repairing drainage pipes (recovery from the floods).</p>	<p><b>Migration:</b> Moving out from one location to live in different location. Migration is mainly motivated by economic difficulties.</p> <p><b>Who/ where:</b> mostly young men and women for various kinds of work—to Palu, Papua, some women to Saudi.</p> <p><b>Reasons:</b> Work and income.</p> <p><b>Who returns/why:</b> end of contract, not finding other/ better jobs.</p> <p><b>Resources people do not have:</b> Information about the new destination, valid opportunities, required skills and cost of living.</p> <p><b>Forced-voluntary continuum:</b> By choice; last option and for short-term only.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Income/ remittance that can be spent in the community, knowledge/ skills learnt by the migrated can be applied.</p> <p><b>Hurts:</b> Missing friends and family, worries about the new place (effects on individuals, not communities).</p> <p><b>Migration and adaptation:</b> Migration is mainly motivated by economic difficulties.</p> <p><b>Migration making adaptation easier:</b> No. There are many things to be prepared. (*Question may have been interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> Yes. There are many things to be prepared. (*Question may have been interpreted differently than intended in FGD guide.)</p> <p><b>To increase positive impact:</b> The income can be used to start small business.</p> <p><b>To reduce negative impact:</b> (*Not discussed.)</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Pakuli Utara</b></p> <p>9 participants, all men</p> <p>Given titles: (shortened)</p> <p><b>“Information on dry and rainy seasons”</b></p> <p><b>“How to minimize disaster risks”</b></p> <p><b>“Climate change solutions”</b></p> <p><b>“Anticipating climate change”</b></p>	<p><b>CC:</b> Weather change has been felt since 2016. Since the year, the weather has been unpredictable. Solar eclipse is believed to cause change of weather patterns. Intense, unpredictable rainfall that causes flash floods, intense high temperature.</p> <p><b>Effects:</b> Floods left the farmlands covered with sand, clogged the irrigation system, which severely affected the agriculture. Also damaged the water—not clean for drinking and other HH use. Prolonged dry season dries the river (Gumbasa). Leaves dry, so less food for animals. Pest attacks, poultry diseases became common.</p> <p><b>Opportunity:</b> Dried river exposed the stones, which created more opportunity to sell stones, earn alternate income.</p> <p><b>Adaptation:</b> Changing crops, organic fertilizer, changing work (e.g., farming to construction worker), work outside village, migrate to another village. The village govt. with the help of community members started cleaning up the irrigation system that was covered by sand.</p> <p><b>Resources people have:</b> Android weather app developed by BMKG. Borehole built by the govt. (but there is always a long line, and one needs transport to carry the water). The planned water filtration system to clean flood water.</p> <p><b>Resources people do not have:</b> Agricultural training. Heavy tools to clean the village irrigation pipes.</p>	<p><b>Migration:</b> Movement of people.</p> <p><b>Who/ where:</b> To nearby villages, to Palu.</p> <p><b>Reasons:</b> Better work for family support (income dropped because of declining crop yields etc.). Marriage.</p> <p><b>Who returns/why:</b> When the land in the destination becomes unproductive too.</p> <p><b>Resources people do not have:</b> Information about potential land with good soils.</p> <p><b>Forced-voluntary continuum:</b> By force. Something people must do when they lose their asset due to landslide and/or flooding, or when their income drops due to declining land productivity.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Migrants send money to their families, which stays in the community.</p> <p><b>Hurts:</b> Their attempt to start a new life at a new place could fail—they could lose everything.</p> <p><b>Migration and adaptation:</b> “No.”</p> <p><b>Migration making adaptation easier:</b> No. Because the consequences must be thoroughly considered before moving. (*Question may have been interpreted differently than intended in FGD guide.)</p> <p><b>Migration making adaptation more difficult:</b> (*Not discussed.)</p> <p><b>To increase positive impact:</b> (*Not discussed.)</p> <p><b>To reduce negative impact:</b> Be well prepared. Avoid selling assets, because things may not work out.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Pakuli Utara</b></p> <p>9 persons, all women</p> <p>Given title: (shortened)</p> <p><b>“Climate Change impacts on daily lives and economy of farmers and small business owners”</b></p> <p><b>“Climate change and added burden to the housewives’ daily activities”</b></p>	<p><b>CC:</b> Unpredictable heat and rain. Intense/ heavy rain causes flash flood. Prolonged heat causes drought.</p> <p><b>Effects:</b> Our husbands are farmers - the changes cause crop failure, hence affect family income. The drought affects water supply, has added work hours to water the land during dry season. More difficult for people who do not own a vehicle to carry the water. Flood brings/ leaves sand in the farming land. Flood also affects the water supply for HH work -&gt; need to fetch water from the spring 1 km away.</p> <p><b>Opportunity:</b> The wives started doing small business (e.g., selling popsicles) during the dry seasons to supplement income.</p> <p><b>Adaptation:</b> Wives started doing small business to supplement income, storing rainwater to make up for the lack of clean water. Husbands started working as construction laborers in nearby villages - but they come back every week, they did not migrate.</p> <p><b>Resources people have:</b> Android weather app developed by BMKG.</p> <p><b>Resources people do not have:</b> Clean water distribution system. Information on plants/ seeds that can be successfully cultivated in the village.</p>	<p><b>Migration:</b> Move out from this village to different village or different location, can be for short-term or long-term.</p> <p><b>Who/ where:</b> To North Sulawesi, to Kalimantan (marriage), to Palu as daily-wage worker.</p> <p><b>Reasons:</b> Income from agriculture no longer enough to meet family needs (for additional income while waiting for harvest time). Land badly damaged by flood.</p> <p><b>Who returns/why:</b> Those who fail to make a living. They come back and start from zero.</p> <p><b>Resources people do not have:</b> It would be better to have some skills.</p> <p><b>Forced-voluntary continuum:</b> There are cases of personal choice (like marriage), but mostly people are forced, because they need to find an alternate or a better living.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Please who migrate can help family economy (thus contribute to the economy of the community). They also have more experience that they can use/ apply in the community.</p> <p><b>Hurts:</b> Those who return have more problems than before.</p> <p><b>Migration and adaptation:</b> Yes, if there is no hope anymore.</p> <p><b>Migration making adaptation easier:</b> No. Climate change does not only happen in this village, but all over the world.</p> <p><b>Migration making adaptation more difficult:</b> Yes, because migration does not guarantee success.</p> <p><b>To increase positive impact:</b> (*Not discussed.)</p> <p><b>To reduce negative impact:</b> (*Not discussed.)</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Rogo</b></p> <p>7 participants, all men</p> <p>Given title: (None)</p>	<p><b>CC:</b> Long, dry season with high temperature. Intense heavy rain in short duration, flash floods.</p> <p><b>Effects:</b> Flash floods destroy crops, trees, leave sand in the land.</p> <p><b>Opportunity:</b> Opportunity of other jobs (lots of construction going on).</p> <p><b>Adaptation:</b> Work as construction laborer, other kind of work such as collecting fallen cocoanuts or selling coconut husk; depending on government/ NGO aid.</p> <p><b>Resources people have:</b> Information on disaster preparedness?</p> <p><b>Resources people do not have:</b> Heavy tools to remove sand from land and drainage pipes. Improve irrigation system. Clean the river.</p>	<p><b>Migration:</b> Move to live in a different location.</p> <p><b>Who/ where:</b> Saudi Arabia, West Sulawesi, Kalimantan—mainly for work and business. Others to Palu and other villages for short-term work (not migration).</p> <p><b>Reasons:</b> To improve economic condition.</p> <p><b>Who returns/why:</b> Those who earned enough to start a business. When family asks. Poor physical condition (cannot continue working/ earning).</p> <p><b>Resources people have:</b> Information about the place and the work.</p> <p><b>Resources people do not have:</b> Cost.</p> <p><b>Forced-voluntary continuum:</b> Mix of forced and voluntary, because of economic factor.</p>	<p><b>Effects on community:</b></p> <p><b>Helps:</b> Those who succeed can share important information with the people of the village. Those who work send money.</p> <p><b>Hurts:</b> Those who fail may lose everything.</p> <p><b>Migration and adaptation:</b> Related, but migration is not the only answer to problems caused by climate change. The downside of migration is its uncertainty.</p> <p><b>Migration making adaptation easier:</b> No. There is no guarantee things will be easier in the new location. Adapt here.</p> <p><b>Migration making adaptation more difficult:</b> Migration is not an answer for the long term. Too many uncertainties and unknown challenges. Adapt here.</p> <p><b>To increase positive impact:</b> Making the best use of the income/ remittance.</p> <p><b>To reduce negative impact:</b> Gather enough information about destination, prepare well.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>Rogo</b></p> <p>6 persons, all women</p> <p>Given title: (None)</p>	<p><b>CC:</b> Blurring line between dry season and rainy season.</p> <p><b>Effects:</b> Floods, drought (2010). Unclean water. Land covered with sand. Water scarcity. Crop failure.</p> <p><b>Opportunity:</b> Much new construction, creates opportunity for short-time jobs.</p> <p><b>Adaptation:</b> New wells for water. Change crop for agriculture. Change profession. Additional work (construction) to supplement income. Small businesses started by wives. Move to another place where the land is better.</p> <p><b>Resources people have:</b> Newly built water source. Disaster preparedness – first aid kits, emergency shelters, response team.</p> <p><b>Resources people do not have:</b> Removal/cleaning of sand from the lands, information on best agricultural practice based on current soil condition.</p>	<p><b>Migration:</b> Moving out. Increasing and declining population.</p> <p><b>Who/ where:</b> Palu or nearby areas for work or business. Three women went to Saudi Arabia to work.</p> <p><b>Reasons:</b> Work, business, disaster.</p> <p><b>Who returns/why:</b> Those whose contract ended. Those who earned enough money to start a business.</p> <p><b>Resources people do not have:</b> Information and necessary skill.</p> <p><b>Forced-voluntary continuum:</b> By force because of disasters.</p>	<p><b>Effects on community:</b> Those who succeed may create opportunities for the villagers.</p> <p><b>Helps:</b> (*Not discussed.)</p> <p><b>Hurts:</b> (*Not discussed.)</p> <p><b>Migration and adaptation:</b> “Yes”</p> <p><b>Migration making adaptation easier:</b> No. One needs to consider a lot of things before migrating.</p> <p><b>Migration making adaptation more difficult:</b> Yes. A lot of things need to be considered.</p> <p><b>To increase positive impact:</b> Spend salary wisely</p> <p><b>To reduce negative impact:</b> Collecting all kinds of information. Learning some skills.</p>



**CHAPTER 6**

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# Kenya

## 6.1 INTRODUCTION

Kitui County, located in the semi-arid region of southeastern Kenya, experiences significant water scarcity. Its residents face risks of flood and drought, and many families who depend on farming and livestock face the threat of food insecurity. CWS is working with community partners, including the Anglican Church Diocese of Kitui (ACK), to improve access to physical assets, technical information, and financial resources needed to adapt to climate change and increase resilience. Livelihood adaptations include conservation agriculture, through expanded use of drought-resistant crops and agricultural extension training, and support to beekeeping as a livelihood activity that could be viable during periods of water scarcity.

### 6.1.1 BACKGROUND

**Climate change impacts and hazards:** Kitui County experiences more than six months of drought annually (Odipo et al. 2017). It is part of Kenya's Arid and Semi-Arid Lands (ASAL) regions, which experienced an average temperature increase of 1.5 degrees centigrade between 1960 and 2003. Climate change has led to erratic rainfall, shorter rainy seasons, and longer dry seasons (Nyaoro, Schade and Schmidt-Verker 2016). Meteorological data shows a mean rainfall decrease in Kitui of 34 mm. annually (Oremo 2013).

**Rural livelihoods and adaptation:** Agriculture is the main source of livelihoods for 75% of all Kenyans (Karanja and Abdul-Rajak 2018). In Kitui, subsistence farming represents most of the local economy (Odipo et al. 2017). Climate change, and particularly erratic and/or shorter rains, impacts agricultural production by reducing crop yields and making crop yields more unpredictable (Karanja and Abdul-Rajak 2018; Oremo 2013). Maize production is particularly sensitive to a decrease in rainfall, which leads to lower maize yields. Climate impacts also interact with other factors, such as land degradation and overuse of chemical fertilizers, to affect agricultural production and increase stress on remaining arable land (Nyaoro, Schade and Schmidt-Verker 2016).

**Migration trends and drivers:** Government statistics show that rural-to-urban migration steadily increased from 1970 to 2005, as a percentage of all internal migration (Oyvat and wa Githinji 2017).

Rural-to-rural migration also occurs, though at lower rates than rural-to-urban migration, including migration into less densely populated ASAL regions (Nyaoro, Schade and Schmidt-Verker 2016). In a survey of 485 migrant households in Kitui, 32% indicated that migration was short-term (3-12 months) and 63% indicated that it was long-term (one year or more) (Odipo et al. 2017). Conditions in urban slums and informal settlements may contribute to circular migration, which is relatively common (Oucho et al. 2014; Oyvat and wa Githinji 2017).

**Climate as a factor in migration:** A review of evidence from across Sub-Saharan Africa found that climate typically interacts with other factors in contributing to migration, rather than acting as a sole driver. High dependency on rainfed agriculture, as is found in Kenya, and low adaptive capacity leaves many farmers vulnerable to climate change impacts. High poverty levels mean that many people affected by climate change lack the resources to be mobile (Borderon et al. 2019). The World Bank's Groundswell report projects an increase in climate-induced migration in East Africa, as a percentage of all migration; and for rural-to-urban migration to increase, mainly in more temperate locations (Rigaud et al. 2018). IOM's 2018 Kenya Migration Report cites cases in which migrants left rural areas partly because of environmental stresses, only to face new environmental hazards in urban settlements (Odipo 2018).

**Migration as an adaptation or coping strategy:** IOM's review found that migration can have "positive, negative, or negligible" results as a strategy for coping with climate change. Migration was reported to have a positive impact by 65% of migrant households surveyed in Kitui, in large part because of the contribution that remittances made to improving housing, expanding school access, and increasing participation in local economic cooperatives (Odipo et al. 2017). A review of agrarian community case studies cited examples of migration contributing to rural adaptation in Machakos, through using remittances to support environmental recovery and improved crop yields; as well as to decline in rural production in Nyanza through the loss of agricultural labor, and to environmental degradation (Greiner and Sakdapolrak 2013).

## 6.1.2 ABOUT THE STUDY AREAS

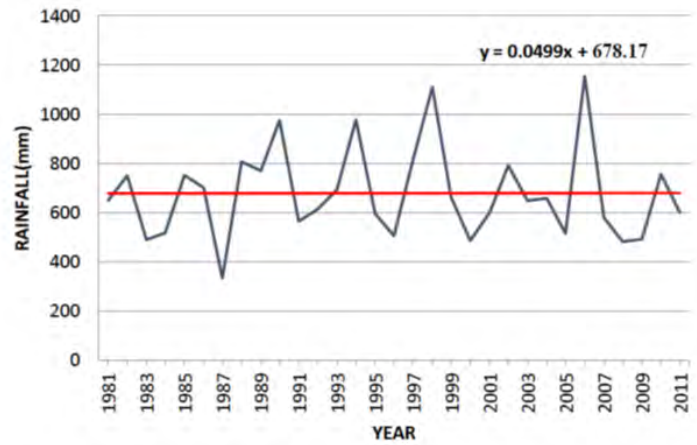
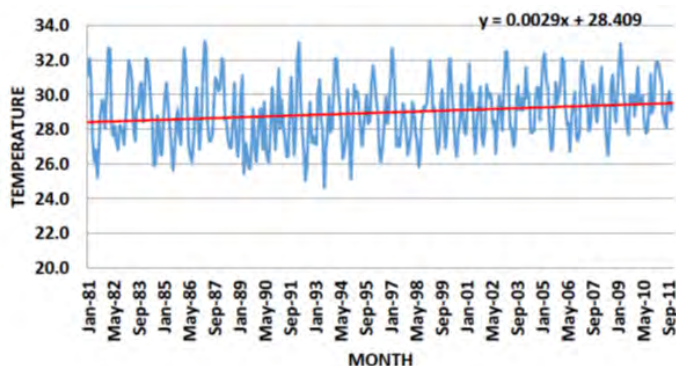
The pilot study took place in two areas of Kitui County: Kitui East Sub-County and Mwingi West Sub-County.



**Figure 20:** Map showing the study communities in Kitui county, Kenya  
Source: Cartographer, Department of Geography, Egerton University (2015).

	Approximate Population Density	Occupation or Livelihood
Kitui East	136,708 (27/sq. km)	Agriculture: 48.08%
Mwingi West	115,117 (106/sq. km)	Non-agriculture: 51.92%

**Table 10:** Population data of the study communities in Kenya  
Source: Kitui County Development Integrated plan 2018/2022



**Figure 22:** Annual rainfall total for Kitui County  
Source: Gladys, K.V. (2017), IJDS Vol. 6 No. 8, p.929

## 6.1.3 SOME KEY FACTS

- The general landscape of Kitui County is flat and gently rolls down towards the east and northeast where altitudes are as low as 400 meters.
- Most parts of the County have an arid and semi-arid climate with rainfall distribution that is erratic and unreliable.
- The average temperature in ASAL regions has increased 1.5 degrees (in Celsius) between 1960 and 2003, leading to more erratic rainfall, shorter rainy seasons, and longer dry seasons.
- About 50% of the population does not have access to improved water sources and 57.6 percent of households spend thirty minutes or more to access drinking water.
- The level of absolute poverty is estimated at 47.5 percent, compared to the national average of 36.1 percent in 2016.
- Almost 75% of the county's population is under 30 years old, and about a half is under 15 years old.

## 6.1.4 RECENT DISASTERS

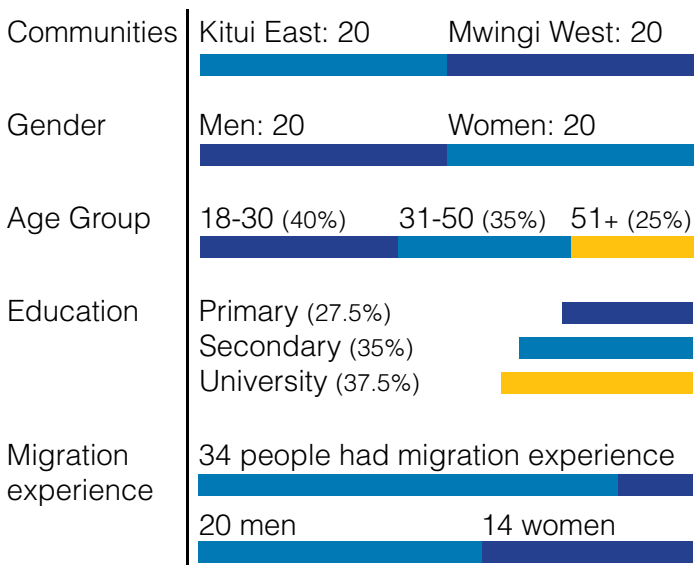
Locust Invasion	March 2020 - January 2021	Desert locust and quelea bird's invasion destroyed rangeland resources and assorted crops mainly in Mwingi North, Kitui East, Kitui Central, Kitui South and Kitui Rural sub counties
Drought	July 2018 - October 2019	Lack of water and food insecurity was quite high in the area.

**Table 11:** Recent disasters in Kitui County.

**Figure 21:** Average temperature variation and trend at a seven-month interval in Kitui  
Source: Gladys, K.V. (2017), IJDS Vol. 6 No. 8, p.929

## 6.2 OBSERVATIONS FROM THE INTERVIEW DATA

### 6.2.1 OVERVIEW OF THE SAMPLE



### 6.2.2 PERCEPTION OF CLIMATE AND ENVIRONMENTAL CHANGE

Nearly all the respondents – all except for one – perceive unpredictability of rainfall as a climate change impact, and many (28 of 40) also perceive extreme heat as an impact. *“Rains tend to be unpredictable,”* described one respondent, *“at times they come early than usual, other times they delayed or completely don’t come. Very hot during daytime.”* In general, interview respondents expressed concern about the adverse effects of these changes on land and water, crops and livestock, income, and overall living conditions.

Regarding environment changes more broadly, all respondents expressed concern about visible changes in water levels and noted that this eventually affects land productivity. Nearly half the interview respondents (17 of 40) expressed great concern about deforestation and desertification of the area, of whom five noted that they have considered migration as an option to cope with these changes. One respondent described how the environment is growing increasingly harsh, not only because of climate pressures, but also other human-made pressures: *“Desert-like condition encroach due to human activities, like clearing bushes for expanding the shamba, in case rains seems promising, [and] charcoal burning. Soil loses its fertility due to long-dry period; boreholes dry up and the available rivers dry up as well.”*

### 6.2.3 PERCEPTION OF ADAPTATION AND COPING METHODS

Many interview respondents named specific options for climate change adaptation, while also indicating gaps in resources available to undertake adaptive measures. Nearly half (17 of 40 respondents) mentioned they had tried adaptation strategies to improve water access or to adopt more resilient farming techniques, such as using certified seeds, fast maturing crops, organic manure, or practicing conservation agriculture. Notably, nearly all (16 of 17) respondents who described adaptation efforts also perceived that these were succeeding; and only four out of this group indicated that they have considered migration to cope with climate impacts.

Some respondents described casual labor and small business activities among coping strategies when their livelihoods are affected by climate and environment changes. A 46-year-old woman described drawing on surplus from previous harvests as a coping strategy: *“The produce I store from farming, I sell to get money for the daily spending and also surplus for the family consumption every day until this gets a little better. Crops dry up even before they mature, this causes food shortage.”*

Even though food insecurity remains a risk, she does not perceive migration as viable option: *“Migration is not the solution since you may migrate to another place whereby it becomes tougher than the current situation at the place.”* For another respondent, whose family depends on agriculture and livestock, coping with climate shocks has been difficult: *“Food access has been challenge, maybe one meal a day.”*

### 6.2.4 PERCEPTION OF MIGRATION

Of the 34 people with lived migration experience, most people (24) had migrated once, and 10 had migrated more than once. More men (20/20) had migrated than women (14/20). Nearly all migration was internal, with just one person who had migrated for work in countries neighboring Kenya. Apart from personal experience in migration, 23 of the 40 respondents indicated at least one person in their family has migrated. Almost all of them reported positive changes from migration of family members, particularly financial support. One respondent described his sister, who had moved to Mombasa, as *“the backbone of the big family, for she has been sending us money for upkeep.”*

Nine respondents had migrated previously to another village (rural-to-rural migration), and they all indicated a land-related factor for migrating – either their land was unproductive or too dry, the land holding was too small, or land had been lost via distress sales. Most of these respondents (8 of 9) indicated that migration contributed to better situation for agriculture or raising livestock; only one indicated that there was ‘no change’.

Among the 25 respondents with migration experience to urban locations, 12 had moved to Nairobi, and 13 had moved to other cities or towns, such as Garissa, Mwingi and Mombasa. About half indicated that jobs or educational opportunities, or a better future generally, were their main motivation. This may reflect the challenges facing rural families who can no longer rely fully on agriculture and livestock for livelihoods.

Climate and environment did not feature as prominently as a reason for rural-to-urban migration. Two respondents indicated that drought was a main factor, and another two mentioned drought and harsh climate conditions as a secondary factor. One 24-year-old man had previously moved to Eldoret to look for work, given lack of opportunities for youth in his home area. He indicated that he would consider migrating again because of climate change impacts, as *“current conditions in my area have been getting worse, whereby two seasons, maybe, [were] witnessed without rains. This makes me afraid since it is not getting any better.”* Ultimately, though, he does not consider migration to be a particularly good option: *“You may migrate and meet more severe condition to your destination than the current spot”* and migration could *“expose you to conditions maybe you didn’t expect.”*

All the respondents who migrated for work opportunities reported positive changes in terms of income, family support, knowledge, and skills. Only three respondents, all of whom had migrated to Nairobi, noted that *“life became harder.”* One respondent, a 25-year-old man, indicated that they had moved to Nairobi once before, using saved agricultural income, and stayed for four months. *“I went to look for income to sustain our family and supplement the income received from farming. We were experiencing hard times from the drought and famine.”* Now, though, he does not consider migration to be a viable coping strategy: *“The cost of migration is too high and there is no guarantee for a better life since jobs are inconsistent...”*

*Personally, I take construction jobs here and there, although they are not guaranteed. There is a challenge of where to migrate to, and the resources required to migrate.”* Family separation is also a concern: *“I would not want to be separated from my family and I cannot move them all. I prefer we struggle together and give back to the same community that we grew in.”*

Six interview respondents had no personal migration experience, and only one indicated that they have considered migration in coping with climate impacts. *“You may migrate and meet more severe condition to your destination than the current spot,”* described one interviewee, a 46-year-old woman, as to why migration was not viable.

Generally, respondents perceive migration to involve high financial costs, although most indicated they did not know the exact costs. This perception was similar among both men and women. The general idea is that migration expands opportunities, particularly for youth; but that it also presents new challenges and uncertainties, including uncertain return on investment. Which is possibly why older respondents of our sample appeared less open to the idea of migration compared to the younger. Friends and family were the most frequently named sources of information about migration (15 responses), and most responses indicated that friends and families are not encouraging of migration.

One respondent, a 28-year-old woman, indicated that her friends suggest that *“migration is a waste of time. It is expensive, it requires a lot of money.”* She had moved previously, from one rural location to another, to be closer to the land she is farming. This *“helped [me] invest in livestock and agricultural activities.”* She does not intend to move again. Other respondents indicated that they accessed information from radio, TV or other media, and some said that they were speaking from their own lived experience in migration.

## 6.3 OBSERVATIONS FROM THE FOCUS GROUP DISCUSSIONS

Two focus groups were conducted, one in each of the communities where interviews were conducted. These discussions pointed to similar climate change effects as described in the interviews: increasing temperatures, more

unpredictable rainfall, water scarcity, and drought.

The impacts have become severe for people in the communities, as well as for their livestock. *“How will we even feed our cows?”* asked participants in one focus group. *“We all know the month of May, the one we call Munuve [rainy month], it never rains then, what do we feed the cows?”* Another group described the links between climate stress and food insecurity, explaining that *“when there is no rainfall, children and parents are forced to spend a night in the river in search of water and by the time they get back home, the children are already late for school and to top it all they are also hungry.”* Discussion participants called for more resources to increase year-round water access, for example plastic tanks to harvest rainwater, or boreholes.

While discussants noted some links between water scarcity, drought and migration, they did not perceive migration as a viable option for coping with climate change. One group asked rhetorically, *“Where would we migrate to?”* This may reflect a perception that resources needed to migrate safely and successfully are beyond their reach. Where migration is occurring, participants see a need to support people on the move to realize economic self-reliance, and a need to increase work opportunities (particularly for youth) in places of origin. The focus group discussions did not describe much of a connection between migration and adaptation. In one focus group, discussants were more concerned with the impacts of migration on places of destination than in communities of origin.

## 6.4 KEY INFORMANT INTERVIEWS

Two key informant interviews were conducted, one in Kitui East and one in Mwingi West. These local officials indicated that while there has been little resource allocation to date, the county is in process of allocating at least 1% of its development budget toward climate responses. Kitui’s county government also has established a ward climate change planning team, which handles matters concerning climate change and will inform climate funding. In addition, the key informants indicated that there is a small number of NGOs trying to

address resource gaps for climate change adaptation.

One agronomist indicated that they have been advising community members to change the mode of preparing their *shambas* (land), for instance, to dig trenches to catch waters during the rainy season. The local village authority has reported negative climate change effects to county government offices, but resource constraints have typically prevented the county from responding.

Key informants perceive climate change, and the inability of agricultural households to adapt to climate change impacts (e.g., lack of rain for long periods of time), as causes of migration. The county government’s database and other information documented include records of families who have migrated, and they were mostly triggered by harsh climatic conditions that have resulted in food insecurity and water scarcity.

However, the key informant interviews suggest that not much is being done regarding migration by the government at this moment, except offering some alternative livelihoods (e.g., giving beehives to practice beekeeping) to discourage people from moving. Offering these alternative livelihoods intends to enable revenue flow, which can help people cope with the harsh climatic conditions. Interview with the key informants did not indicate whether the local government currently has any policy in place regarding migration.

## 6.5 SUMMARY AND RECOMMENDATIONS

Climate change and other environmental pressures are having significant impacts in Kitui. Study respondents perceive increasing water scarcity, unpredictable rainfall, and extreme temperatures, along with disaster events such as droughts and floods. These are impacting agricultural production and livestock and are increasing the threat of food insecurity. Conventional irrigation methods are not working, and better water sources and irrigation practices are needed.

Interview responses suggest that climate adaption, at least among some respondents, is underway. Some of the coping strategies described, such as reducing food consumption to one meal per day, or unsustainable charcoal production, can have

negative impacts on health or the environment. Focus group participants named a range of adaptation options but indicated that resources to support adaptation is limited. The county government is aiming for CCA to make up 1% of its limited total budget, and some county-level climate planning mechanisms are now in place. This may increase opportunities to extend support toward longer-term adaptation, particularly in agriculture.

While mobility is a fact of life for nearly all respondents – most have lived migration experience, and others described internal migration by family members – perceptions are much more favorable to staying in Kitui and investing locally in climate adaptation. Migration is perceived to have high financial costs, and while there is a sense that it can expand opportunities (particularly for youth), it also presents new uncertainties and challenges. Most respondents mentioned friends, family, or neighbors as their sources of information on migration.

One focus group in Kenya framed migration as a non-option for themselves, asking rhetorically, “*Where would we migrate to?*” – even while noting that migration was relatively common among youth in the community. While internal migration is providing some level of remittances and benefitting families, it is perceived as insufficient to cover the costs of climate adaptation without additional support from external sources.

There is a mix of tangible and intangible factors behind preferences to remain in Kitui, even as climate and environmental conditions grow harsher. There is a perception that adaptation can succeed, if resources are made available for improving water access, adopting more resilient agricultural practices, and expanding work and income-generating opportunities. Alongside perceptions of high costs and uncertain return on investment of migration, this contributes to a sense that investing in local adaptation is a better investment.

Responses also suggested attachment to home and family and, for at least some people, a desire to contribute to and transform their home community. This relatively strong place attachment may also reflect, and reinforce, a sense that problems experienced in one’s home community cannot be resolved by migrating elsewhere. “*There are problems everywhere*” and “*climate change is everywhere*” were two recurring comments from study respondents.

Recommendations from interviews and focus group discussions in Kenya include:

1. Access to water: Expand rainwater harvesting, such as plastic tanks to store water, and use of pipe and drip kits; dig shallow wells and boreholes; build earth dams and sand dams; and adopt clean energy irrigation, such as solar powered pumping systems.
2. Climate-resilient agriculture: Expand access to indigenous seeds (e.g., sorghum, millet, black beans); ensure seed delivery is timely for agricultural cycles; shift to livestock breeds (e.g., goats, chicken, and bees) that are hardier for harsh climate conditions; improve access to better farming tools (e.g., shovel/ fork jembe) to prepare land before rains; expand use of organic manure and access to wheelbarrows to carry manure; assist older farmers to build terraces on their lands; and encourage older farmers to join Village Savings and Loans Associations (VSLAs) for easier access to loans, with which they can improve their lands and farming practices.
3. Youth livelihoods opportunities: Provide agricultural and livestock extension training to improve skills; encourage older adults to switch roles with youth, so that older people can care for children and youth can take on work in the fields; offer youth training on clean energy irrigation; form and fund VSLAs to increase youth’s access to working capital; and expand employment opportunities for youth and provide encouragement for self-reliance.
4. Migration information and support services: Expand access to information about migration destinations, beyond current sources; and provide support to migrants to connect with work opportunities and to realize economic self-reliance.

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## 6.7 APPENDIX: KENYA FOCUS GROUP SUMMARIES

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>KITUI EAST</b></p> <p>11 participants</p> <p>Given titles:</p> <p><b>“Impacts of climate change and migration”</b></p> <p><b>“Adapting to changing climate”</b></p>	<p><b>CC:</b> Increased temperature during the day, unusual/ unpredictable rainfall.</p> <p><b>Effects:</b> Yes, because we depend on agriculture &amp; livestock.</p> <p><b>Opportunity:</b> NGOs came, gave training.</p> <p><b>Adaptation:</b> Adapting <i>shambas</i> (farmland) to better retain rainwater; boreholes; practicing more efficient agriculture with training from NGOs, using drought resilient seeds.</p> <p><b>Resources needed:</b> Water. The conventional irrigation methods not working anymore. More resources needed to increase year-round water access – e.g., plastic tanks to harvest rainwater, boreholes, earth dams and sand dams.</p>	<p><b>Migration:</b> Moving from one place to another, temporarily or permanently.</p> <p><b>Who/ where:</b> Currently no one.</p> <p><b>Reasons for migration:</b> Drought/ lack of water, land/ family dispute, witchcraft. Mainly drought and unproductive land.</p> <p><b>Return:</b> Currently no one.</p> <p><b>Resources people have:</b> Info about the destination, money.</p> <p><b>Resources people do not have:</b> Sufficient information to manage unpredictability.</p> <p><b>Forced-voluntary continuum:</b> Usually voluntary (for better land, water source, income). Sometimes forced (disputes). Sometimes mixed.</p>	<p><b>Effects on community:</b> New people do not mix easily with the destination community, increase of population &amp; thereby the gross income of the community, contributing to the growth of the community.</p> <p><b>Helps/hurts:</b> Increased population may contribute to growth, but new/ more people often mean more conflicts.</p> <p><b>Link with adaptation:</b> Yes. Migration helps people avoid issues they cannot solve/cope with.</p> <p><b>Difficult:</b> Migration makes adaptation difficult when one does not have enough information about the destination.</p> <p><b>To reduce negative impact:</b> Discourage migration; Those who do migrate should be supported to realize economic self-reliance; and youth need more work opportunities in places of origin.</p>

Focus Group Description	Climate change perceptions and adaptation strategies	Migration perceptions and experiences	Migration and adaptation
<p><b>MWINGI WEST</b></p> <p>10 participants</p> <p>Given titles:</p> <p>“Climate change”</p> <p>“Migration”</p> <p>“Coping with impacts of climate change”</p>	<p><b>CC:</b> Poor and unpredictable rainfall, very high air temperatures, prolonged drought and water drying up fast in the rivers.</p> <p><b>Effects:</b> Crop productivity-- affects food, income. No pasture for grazing. Lack of water for humans, animal. Less rain leads to fewer crops, less income, less money for school fees. Drought causes food shortage, more hunger. Less water means going to rivers for water, children late for school. Less food &amp; water for cows.</p> <p><b>Opportunity:</b> NGOs, who constructed sand dams. Water scarcity partially solved.</p> <p><b>Adaptation:</b> Drought tolerant seeds, organic manure (NGOs). Borrow money (returning the money is difficult). Pray to God. Sometimes the govt. distributes food aid.</p> <p><b>Resources people have:</b> Better seeds from NGO (distributed a bit late), small loans.</p> <p><b>Resources people do not have:</b> Livestock that can survive harsh conditions. Storage tanks for water. Seeds (on time). Financial aid. Better farming tools so that the land can be prepared before the rain comes. Wheelbarrows to carry the organic manure. Emergency food aid for times like now.</p>	<p><b>Migration:</b> Moving from home to another place because of some difficulty.</p> <p><b>Who/where:</b> Young people, to towns for jobs. Others, for other reasons.</p> <p><b>Reasons:</b> Water scarcity. Debt (to run away). Dispute. Govt. relocation. People receive money when a road is constructed on their lands. They then move to a new place. But mainly debt and dispute.</p> <p><b>Who returns/why:</b> People return when they gain financial stability. Or after getting fired from work. Sometimes they return after committing a crime (like stealing). Now people are returning because of the pandemic.</p> <p><b>Resources people do not have:</b> Money, information.</p> <p><b>Forced-voluntary continuum:</b> Mainly by choice, but sometimes by force (e.g., dispute in family).</p>	<p><b>Effect on community:</b> People sell property to go to town&gt; lose everything&gt; come back empty-handed&gt; become homeless.</p> <p><b>Help/hurt community:</b> Helps by remittance, money earned is spent in the community (ex-people are hired to build new houses--employment). Hurts when family members left behind cause trouble. Negative impact: children lack parental supervision; <i>“migration is hurting the community.”</i></p> <p><b>Migration and adaptation:</b> Yes. Migration happens when adaptation works no more (e.g., land is over-used, so doesn't yield crops, and people have to migrate).</p> <p><b>Migration making adaptation easier:</b> Migrating to a better land with water sources will solve many problems.</p> <p><b>Migration making adaptation more difficult:</b> None.</p> <p><b>To increase positive impact:</b> Create awareness on the advantages of migration.</p> <p><b>To decrease negative impact:</b> Avoid migration all together. Help people adapt better.</p>



**CHAPTER 7**

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# Conclusion

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“I feel changes in weather conditions here because it hardly rains... there is a lot of impact, especially on the harvests, which means there is more hunger. The main reason I left is to search for life because misery wanted to kill me and my children. I consider the option of migration as a way to cope with change and weather. If I leave, I will find some relief.”

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## 7.1 KEY OBSERVATIONS

The study affirmed that climate change is very much felt in people’s lives, particularly by farmers, fishers and others who depend directly on natural resources for livelihoods. Changing seasonal patterns, unpredictability of rainfall, and increasing water scarcity are common concerns across the study locations. These are negatively impacting rural production and household income; and can have ripple effects on health conditions and access to education. Increasing risks of sudden disasters – e.g., floods and landslides – are also a concern, for their longer-term impacts on agricultural production, as well as the potential for displacement.

Interviews and focus groups also affirmed a strong desire to make climate adaptation succeed. In some places, people are already adapting agricultural practices or increasing climate resilience in other ways, with resources available and with modest external technical support. Adaptation also includes livelihoods diversification and small business activities, sometimes drawing on remittances from family members who have migrated. In all the locations, we heard interest for more information and especially more financial and technical resources for adaptation.

Migration is relatively common in communities where CWS supports climate adaptation. Climate change effects – particularly through their impact on agriculture and livelihoods – are one factor in migration, though not the only factor. We heard a variety of mobility patterns described: short-distance and long-distance; circular, temporary, and longer-term migration; rural-to-urban and rural-to-rural; internal and cross-border; regular and irregular.

In some locations, study respondents described

migration as a way of coping with climate change and its impacts on agricultural livelihoods, particularly the impacts of increasing water scarcity. In the words of one interview respondent, *“migration is good because it would earn money for support family. If the drought still occurs and less water for agriculture, the livelihood will be harder.”* Migration is also related to debt that rural families take on because of agricultural losses from drought, or because of the financial costs of adapting in-place. One respondent noted that they *“would live in Cambodia and do farming but since [I am in] debt, have to move to work in Thailand.”* These perceptions tended to come through in the overall stories that interview respondents shared, rather than in responses to individual questions.

In the island community of La Tortue in Haiti, the cumulative effects of climate change, within a broader context of human insecurity, were described as a tipping point for displacement: *“A lot of people had no intention to leave. Now they don’t find anything to encourage them in the area.”* For at least some in the community, mobility has come to be seen as the only option, even with a sense of the risks that irregular migration poses: *“The weather changes cause everybody wanting to run and leave the country, meaning that we cross the ocean however rough it is, just to get out of here.”*

Slow-onset climate change impacts are contributing to or exacerbating human insecurity, particularly food insecurity, in several study locations. In one of the most extreme examples, a respondent in Haiti described this in terms of subjective fear: *“I feel changes in weather conditions here because it hardly rains... there is a lot of impact, especially on the harvests, which means there is more hunger. The main reason I left is to search for life because misery wanted to kill me and my children. I consider the option of migration as a way to cope with change*

*and weather. If I leave, I will find some relief.”*

In some of the study locations, though, migration is not widely perceived as a form of climate adaptation – even if there is a high level of mobility in general. The perception that migration is not a viable coping strategy, may reflect high perceived costs of migration and a sense of lacking the skills and assets needed to migrate in ways that would genuinely improve living conditions. One discussion group in Kenya framed mobility as a non-option for themselves – asking rhetorically, “*Where would we migrate to?*” – even while noting that migration was relatively common among youth in the community. Respondents in Indonesia described strong attachments to their home communities, and migration as a short-term or temporary solution to economic needs and opportunities, which may influence perceptions that mobility is not an alternative to in-place climate adaptation.

Some people interviewed see migration as an expression of hope or opportunity; others describe migration in more reluctant terms. There is awareness of threats that exist in migration – interview respondents described fraud, workplace abuse, harassment, detention, limited access to health care in case of accidents or sickness, and even deaths in transit – particularly among people with lived experience of migration. Some people perceive migration as a viable option, even knowing about potential threats; while for others, awareness of threats is a deterrence to migration. More broadly, there is a sense that the returns on investment from migration can be uncertain, and that sound preparation is needed.

There is high demand for access to accurate information about migration (both internal and international) and for opportunities to use this information in planning and decision-making. This includes information on accessing documentation, such as passports, that are needed for regular migration; accessing work opportunities through migration; and ‘know-your-rights’ information for

keeping safe while in transit or at destinations, whether moving through regular or irregular channels.

A desire for migration opportunities that are safer and more predictable, often coexists with a desire to invest in resilience in communities of origin, or to migrate to places closer to home rather than over longer distances or across borders. Where migration is perceived to be an option for coping with climate change, interview responses also suggest a hope or interest to return later (whether permanently or periodically) to communities of origin. In some locations, circular and return migration is common; in others, returns were described by respondents as the exception rather than the norm, and associated with failure in migration, rather than success.

Remittances were the most frequently described link between migration and adaptation; savings and investment by returning migrants were also described. When people who migrate send money home, this can help their families to cope with climate change impacts, and to improve living conditions more generally. In some places, savings and remittances are contributing to agricultural adaptation, such as improvements in water access. Generally, though, respondents in origin communities indicate that more could be done so that migration contributes positively to climate resilience; and that governments should consider ways to incentivize diaspora investments and skills and knowledge transfer, alongside public sector investments in climate resilience.

Migration is also perceived as having negative impacts in places of origin, such as loss of agricultural workforce and other talents from the community, which can make climate adaptation more difficult. Some respondents also described feelings of emotional or cultural loss, particularly in remote locations experiencing depopulation, and negative impacts on civic life. The desire for stronger connections with diaspora is not merely economic.

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“A lot of people had no intention to leave. Now they don’t find anything to encourage them in the area.”

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## 7.2 SUMMARY COMPARISON ACROSS COUNTRIES

Location	Climate change perceptions	Migration perceptions
<b>Cambodia: Bavel district, Battambang province</b>	Hotter dry seasons, shorter wet seasons, and more frequent floods and storms were the impacts described by most interview respondents from Bavel district of Cambodia. Land has become dry and unproductive, and water quantity and quality have gone down. These changes have affected crops yields and contributed to poor harvests, and a large drop in income from agriculture. Many respondents are trying to cope by creating or finding an alternate source of water, and some indicate that they are simply <i>“relying on nature.”</i> To make up for income deficits, people are selling their land, or taking loans with high interest, and thus falling deeper into debt.	Many people in the study area migrate to the other parts of the country, or across the border to Thailand, for work opportunities. If successful, this helps them clear their debts and improve their family’s economic conditions. Unfortunately, there are cases where people return in worse condition than before migrating (e.g., being arrested and serving prison sentence, falling seriously ill after migrating). Some respondents linked this to a lack of awareness of risks in migration or of basic labor rights; and noted a need for information on – and access to - safe and regular migration. Because of concerns about family separation, many prefer in-place adaptation over migration, or migration within Cambodia rather than across borders.
<b>Georgia: multiple regions</b>	Respondents in Georgia described changes in temperature extremes, e.g., colder winters and hotter summers, more frequent and more intense rainfall, and drier conditions in some regions. Groundwater sources are drying up in some locations, and land is becoming less arable, while more intense rainfall is increasing the risk of flooding and landslides. Although many respondents are aware of adaptation strategies in relation to slow-onset impacts (e.g., new water management techniques or climate resilient crops), they described a need for more external support, including from local and national government agencies, in managing the risks of sudden-onset events.	Many study respondents are eco-migrants, who had relocated previously because of avalanches and landslides. Because of their past experiences, most eco-migrants have a very negative perception of migration, which they generally associate with displacement by a sudden disaster or involuntary relocation. In contrast, persons who had not experienced relocation or displacement are relatively more open towards considering migration as a climate coping strategy, particularly in areas where agricultural livelihoods are becoming more challenging and other work opportunities are limited. Without support to access safe housing or employment, though, people face risks of migrating into situations of vulnerability.
<b>Haiti: Northwest Department</b>	In Haiti, study respondents described climate change impacts in terms of unpredictable and irregular rainfall, extreme heat, and intensifying hurricanes. In addition, respondents from the island of La Tortue described sea level rise among the challenges faced. These changes are making the land dry and unproductive, and fishing more difficult, and these effects are contributing to reduced household income and food insecurity. Coping strategies include finding alternate sources of income (e.g., starting a small business), purchasing with credit or borrowing money through mutual solidarity or microcredit, and reducing consumption of food and water.	Migration – both internal and international – is considered by some respondents as a strategy of coping with climate impacts, though migration is more commonly perceived as a way of finding work or educational opportunities, or a response to human insecurity more broadly. Interviews reflected stories of successful migration (e.g., migrants who help their families back home by sending remittances), as well as stories of pain and loss (e.g., arrest and deportation, accident on the way). Respondents identified a need for improving access to information and support services for safe and regular migration, alongside increasing access to resources for climate adaptation and livelihoods diversification.

Location	Climate change perceptions	Migration perceptions
<b>Indonesia: Sigi district, Central Sulawesi province</b>	Longer dry seasons, unpredictable heat, erratic rainfall, and frequent flooding are ways in which Central Sulawesi respondents feel climate change. Flood risks partly reflect reduced capacity of rivers, and floods have left large amounts of sand in farmland, making agriculture difficult. Many respondents also described growing water scarcity, especially scarcity of clean water during dry seasons. Common strategies for adaptation in agricultural households include changing crop varieties, using more fertilizer, and working together to clean the sand from the farmland. People are also finding alternate sources of income, such as by starting small home-based businesses (mostly by women), doing casual labor, and shifting to fishing during the rainy season.	While there is a high level of mobility in the study area, mostly short-distance and for temporary or seasonal work, migration is generally not perceived as a way of coping with climate change, and there is a strong preference for in-place adaptation. Some respondents talked about risks and uncertainty that are generally associated with moving to a new place but, unlike other CWS study locations, they do not generally associate migration with threats of abuse or risk of accidents or illness. Interview responses show strong family ties and place attachment, which could also be a reason why many study participants do not consider migration as an adaptation strategy.
<b>Kenya: Kitui County</b>	People are feeling the impacts of climate change in terms of extreme heat, unpredictability of rainfall, change in land (drier, desert-like conditions) and increasing water scarcity. These impacts are directly affecting agriculture and the crop yield. Adaptation strategies include ensuring water access, adopting resilient farming techniques, and finding short-term casual labor to make up for the income deficit. People engaging in these strategies tend to consider them to be succeeding. A good number of respondents did not indicate any coping strategy, though, and more resources for adaptation – particularly access to water, climate-resilient agriculture, and new livelihoods options – are widely seen as needed.	Migration is quite common in the study area, including both rural-to-rural (in search of better farming land) and rural-to-urban migration (for work or educational opportunities). In most cases migration is perceived to bring positive economic results, particularly for younger people. However, most study respondents do not see migration as a viable option for themselves – for climate change adaptation or otherwise – because of its perceived high cost, unforeseen challenges and uncertainties, family separation, or strong place attachment. As climate conditions become increasingly harsh, support to adaptation and resilience for people choosing to stay will be critical in mitigating risks of food insecurity.

## 7.3 RECOMMENDATIONS

These recommendations are drawn from the study interviews, focus group discussions and community report-back workshops; as well as from CWS' experience in working with climate-impacted communities to diversify livelihoods, increase climate resilience, and undertake disaster risk reduction.

They are aimed broadly for local and national government agencies, NGOs and community-based organizations, funders, policy researchers,

and other stakeholders. CWS intends for these recommendations to help communities to advance their locally led adaptations, undertake climate action and increase resilience, and to advocate for safer migration. While these recommendations focus on needs identified by study respondents, the research also affirmed that households and communities bring resources to adaptation, albeit some have access to more resources than others. CWS encourages strength-based approaches that help communities to build on their existing assets, and in which additional resources strengthen capacity for collective action, as well as expand



adaptation options available to impacted families and communities.

**A. Invest in adaptation and resilience in ways that recognize that staying in increasingly harsh climatic conditions is a difficult choice.** While we found that generally there is a strong desire for adaptation to succeed, it was by asking study respondents about both mobility and in-place adaptation – i.e., framing these both as legitimate, if imperfect options – that we heard clear demand for longer-term investments that are most needed to bring to life ‘the right to stay’. This includes five main sets of recommendations:

1. **WATER.** Improving access to water, particularly for agriculture but also for household use and in schools, is a prominent concern. Recommendations included: Moving beyond customary irrigation and introducing new ways to capture or harvest rainwater; improving access to relevant technology, e.g., solar pumps or drip irrigation; public works support to monitor availability and improve access to groundwater sources; investing in clean water distribution systems; and rehabilitation of community-based water infrastructure, such as canals.
2. **RESILIENT AGRICULTURE.** Agriculture remains a key source of food and income, and part of many respondents’ social and cultural identity. There is demand for expanding climate resilient agriculture and sustainable agroforestry and agropastoralist approaches; improving access to agricultural extension training, including on conservation farming techniques; expanding seed banks and improving access to drought-resistant seeds and hardier livestock breeds; improving access to organic fertilizer and environmentally friendly pest control; and post-harvest storage and improved market access. In fishing communities, recommendations included access to GPS and other equipment needed to access stocks further offshore.
3. **COMMUNITY-BASED FINANCE.** Access to microfinance and working capital remains critical for expanding livelihoods beyond agriculture and other activities highly dependent on natural resources. Investing in community-based finance mechanisms can improve access to capital at affordable rates; and is particularly needed in places where debt is a factor in displacement or migration into situations of vulnerability, or where financial resources are needed to adopt or scale-up adaptation and disaster risk reduction technologies.

4. **PARTICIPATORY DRR AND LONG-TERM RECOVERY.** For early warning systems to be effective, they need to communicate information on risks and risk reduction in ways that people find accessible and understandable. In Indonesia, for example, CWS supports community involvement through local Disaster Risk Reduction (DRR) Forums, which increase awareness of sudden- and slow-onset hazards and provide opportunities for citizens and elected leaders to undertake joint planning and action in mitigating disaster risks. While community involvement is essential, it does not necessarily replace local government action and investment, such as in management of rivers and canals to increase capacity and reduce risk of overflow. The pilot study also found examples of long-term flooding impacts on land arability, which must be addressed to restore agricultural productivity. Community participation in recovery from sudden-onset events can ensure that these long-term needs are addressed.

5. **INFORMATION ON CLIMATE ACTION.** While many respondents have some information about locally experienced climate change, there is little or no information available about regional or global trends, nor about national government plans or global climate action commitments. This can be addressed through support to national and local information campaigns, establishing climate change resource desks in municipal and regional governments, organizing community information sessions, and decreasing the digital divide so that online information about climate action plans is more readily available. Climate adaptation strategies should be integrated with other sectoral planning, particularly agriculture. Training for journalists can strengthen media coverage and professional standards in reporting on climate adaptation and on the links between climate change and migration.

B. While resources and information for adapting to climate change may be available at national and global levels, less than 10% of climate finance currently reaches local communities.<sup>16</sup> **We must do more to reach families and communities who feel climate change most acutely; and to support community-based organizations and local governments that serve them.** The following steps could increase the effectiveness of climate-related

assistance and improve access to resources by climate-impacted communities:

1. Provide longer-term, multi-year funding support. This is particularly needed to support livelihoods adaptations and increase climate resilience in semi-arid regions, where geographic and socio-economic isolation can exacerbate communities' vulnerability to climate shocks.
2. Ensure flexible funding that is adaptable to local contexts and to locally defined needs and resource gaps. Flexibility could allow for climate resilience activities to link with broader ecosystem restoration activities, and to address other human-made pressures on the environment (e.g., deforestation, land tenure insecurity, large-scale agribusiness, or extractive industries) that compound the environmental impacts of climate change and that also contribute to displacement.
3. Keep reporting and accreditation processes simple for community-based organizations or local government units to access climate finance. The greater the administrative burden of accessing climate finance, the less likely that community-based organizations or local governments will be able to access these resources.
4. Prioritize and/or incentivize activities that incorporate community participation (e.g., participatory hazard mapping, climate vulnerability assessments, or mobility assessments), so that local governments' climate action plans are strengthened by community residents' knowledge of slow-onset impacts; and so that plans reflect community perceptions of the 'pros and cons' of adaptation and risk reduction options. Community participation can also encourage more transparent planning processes and increase accountability of how climate finance is put into use.

C. Particularly in locations where migration is perceived to be a climate coping strategy, **incorporating mobility into adaptation planning and climate action** can expand – and make safer and more dignified – the options that are available to families and communities who are feeling climate change impacts. The pilot study pointed to various

<sup>16</sup> See: Soanes, M, Rai, N, Steele, P, Shakya, C and Macgregor, J (2017). *Delivering real change: getting international climate finance to the local level*. IIED Working Paper. IIED, London. Available at: [10178IIED.pdf](#).

ways that this could be undertaken:

1. Establish information centers, such as through community-based organizations or local government offices, that can make available accurate, reliably sourced information about migration, including requirements for safe and regular migration. Many respondents expressed a demand for information about migration – not to be convinced to migrate or not to migrate, but to assist themselves and others in making difficult decisions that involve risk management and require thoughtful preparation. Providing relevant information on migration could also be integrated into existing climate adaptation and resilience activities, particularly if these already serve as touchpoints with community members.
2. Link information to migration support services, such as skills training, financial planning, and other pre-departure planning; and provide information, incentives and/or support services, both to migrants and their families, to encourage the reinvestment of skills, savings, and remittances in climate adaptation activities. This approach could be used in contexts of both internal and international migration.
3. Expand viable options for internal migration, in consultation with climate-impacted communities and local governments; and increase access to decent work, safe housing, and social protections for persons migrating internally. Explore debt repayment assistance, subsidized access to equipment (e.g., water pumps), or other subsidies that could assist climate adaptation by internal migrants and their families. This could make internal migration a more viable alternative, particularly in contexts where climate-induced debt or immediate household needs are factors in migration.
4. Assist people to access government-issued identification and passports, which are required for accessing regular international migration; and which may add some protection in irregular migration.
5. Expand safe and regular migration opportunities that are accessible even by the poorest households. This can include facilitating contact with consular services for international migration destinations; organizing border reception and assistance for safe transit; communicating with and monitoring employers to ensure that migrant workers' rights are respected; and assisting migrants to access legal, medical, and mental health support in places of migration.
6. Provide know-your-rights information and facilitate community discussions about staying safe in migration (both internally and across borders); and encourage well-informed communication about personal safety and rights in migration, between places of origin, transit locations, and places of destination.
7. National governments should increase their capacities to monitor the treatment of their citizens who migrate to other countries, and to ensure access to human rights. In international diplomacy, governments should affirm and reiterate that international human rights commitments apply to all persons, regardless of migratory status.
8. In locations where climate impacts are linked to high demand for safe and regular migration, support community groups to connect with trans-local and transborder networks, so that people's concerns can be integrated into efforts to improve migration governance and increase climate resilience. In our pilot study locations, demand for safe migration often coexists with demand for support to in-place climate adaptation – it is not necessarily an “either-or” scenario.
9. While there is value in continuing to increase the evidence base on climate and mobility, such investments should encourage research that reflects accountability to climate-impacted communities. Where possible, invest in learning about climate and mobility alongside support to adaptation, resilience, and disaster risk reduction – rather than as stand-alone research. Ideally, this builds toward approaches in which climate-impacted communities, and people who are on the move because of climate impacts, are leading or co-leading research agendas and knowledge production. CWS would welcome for our pilot study tools (included in the appendices to this report) to be adapted or repurposed in ways that incorporate participatory research methods, or that could increase the leadership of directly impacted communities in research. ■



# Appendices

# I. The Interview Guide

English	Language of Interview (e.g., Khmer)
<b>A. Respondent Profile (demographics)</b>	
1. What is your gender?	
2. What is your age?	
3. What is your main work or occupation?	
4. What level of school did you complete?	
<b>B. Respondent's Household Profile</b>	
5. How many people live in your household? Please specify age and gender of each member.	
6. What are your relationships with others in your household? (e.g., parent/guardian/child/grandparent/grandchild)	
7. What are your family's main sources of income? (e.g., agriculture, fishing, livestock, other employment)	
<b>C. Respondent's Migration Profile and HH Migration Profile</b>	
8. Have you ever moved to other places to work or live? If yes--Continue to Q9. If no--Skip to Q21.	
9. How many times? Once, or more than once?	
10. How did you arrange the cost of your migration?	
11. Where did you move to? (And is that place a city, a town, or village/rural area?)	
12. By what transport did you migrate? (e.g., boat, train, plane, on foot, etc.)	
13. How long did it take you to get to your destination?	
14. Where did you stay when you reached your destination? (e.g., with relative, rented room, street, shelter, etc.)	
15. How long did you stay there?	
16. Did you mostly stay there, or did you go back and forth (i.e., between here and there)?	
17. Did you move for a specific season or time of year?	
18. What was the main reason that you moved?	
19. Were there other reasons that you moved? What were they?	
20. What have been some changes in your life or your family's life since you migrated?	
21. Has anyone else in your family migrated? If yes, who?	
22. Do you know where they moved to? If yes, where?	
23. What have been some changes in your life or your family's life since your family member migrated?	
<b>D. Experiences of Climate Change (Weather Patterns, Natural Environment)</b>	
24. (a) Have you felt changes in the weather patterns here over the last 10 to 20 years (e.g., in terms of frequency and/or intensity)? (b) If yes, what kinds of changes (e.g., in terms of frequency and/or intensity)? [Examples for probing: erratic rainfall, delayed or unpredictable rains, extreme heat or longer heat waves]	

25. Have weather changes affected your life, or your family's life? If yes, please describe how. [Examples for probing: impacts on crops or livestock, food access, water and sanitation, health, work or income, cultural or spiritual resources.]	
26. Have you seen change in the land, water, or other natural resources over the last 10 to 20 years? If yes, what kinds of changes? [Examples for probing: smaller forests, fewer trees, drier soil, changes in soil productivity, less/more water in rivers or lakes, drier wells or boreholes, more/fewer insects, change in marine life or terrestrial flora and fauna.]	
27. Have these changes in land, water or other natural resources affected your life or your family's life? If yes, please describe how. [Examples for probing: impacts on crops or livestock, food access, water and sanitation, health, work or income, cultural or spiritual resources.]	
<b>E. Climate Change Adaptation: Experiences and Perceptions</b>	
28. Have you or your family tried to cope with these impacts from weather changes, and/or changes in the land, water, or other natural resources? [Probing should refer to respondent's answers to Q25 & Q27.]	
29. Have these adjustments helped? Why or why not?	
30. Have you considered migration as a way of coping with these changes? Why or why not?	
31. How much do you think it is costing you to cope with the impacts of weather changes? What are your resources to manage that cost?	
32. Are there other resources that you need to cope with the impacts of weather or environmental changes, but do not have?	
33. What is your biggest concern about staying here long-term?	
<b>F. Migration: Perceptions</b>	
34. Have you or others in your family thought about moving away because of weather changes and/or changes in the land, water, or other natural resources? Why or why not?	
35. [If yes to Q34] Where have you considered moving to?	
36. Do you plan to come back?	
37. [If yes to Q36] How long do you plan to stay?	
38. Are there other reasons you might think about migrating? What are these reasons?	
39. Do you think that your family or friends expect you to migrate? [If yes] How does this affect your perspective?	
40. What information do you have about migration? Who/what are your sources of information?	
41. Do you have an idea of how much it costs to migrate?	
42. Do you think that migration is a good option long-term? Why or why not?	
43. If you had to recommend to someone else your age whether to invest in staying here or invest in migrating, what would you recommend? Why?	

24 direct questions (i.e., Yes/No or short answers) – estimated 13-16 minutes

18 questions that require longer answer or explanation – estimated 43-47 minutes

**Total estimated time: 55-65 minutes**

## II. The Focus Group Discussion Guide

Introduction by facilitator and description of the research project and purpose of the FGDs (10 min.)

### A. Climate change perceptions and adaptation strategies (30 min.)

- What is the first thing that comes to mind, when you hear the words “climate change”?
- What have been changes in weather patterns (e.g., amounts of rain, timing of rains, air temperatures, wind patterns, droughts or flooding), over the last 10-20 years?
- How have these changes affected your community?  
Follow-up questions, if needed:
  - Have these changes made life more difficult?
  - Have they created any new opportunities?
- How have you tried adapting to these changes, or coping with their impacts?
- What resources or information do people have for adapting to climate change impacts?
- Are there any resources that you need to adapt to climate change, but do not have?

Facilitator: Make a list of all the adaptation strategies that the group describes – this will be used again in discussion part C.

Short break (5 min.)

### B. Migration perceptions and experiences (30 min.)

- What is the first thing that comes to mind, when you hear the word “migration”?
- Who in the community is migrating, and to (or from) where?
- What are some reasons that people migrate?
- Do you think that some of these reasons are more important than others? Please explain.
- Who is returning? What are some reasons that people return?
- What resources or information do people have to migrate safely and successfully?
- Are there any resources or information for safe migration that you need, but do not have?
- Does it feel like migration is something that people are choosing, or something people are forced to do? Or maybe a mix of both? Please explain.

Short break (5 min.)

### C. Migration and adaptation<sup>17</sup> (30 min.)

- How does migration affect the community?
- Are there ways it helps the community? Are there ways it hurts the community?

Facilitator: Group the responses into two lists, (a) positive impacts of migration, and (b) negative impacts of migration. Then, return to the list of climate adaptation and coping strategies that the group identified in Part A of the focus group discussion.

Facilitator: Here is the list of climate adaptation strategies that we identified earlier in our discussion.

- Does migration have anything to do with these adaptation and coping strategies?
- Does migration make any of these adaptation strategies easier? Please explain.
- Does migration make any of these adaptation strategies more difficult? Please explain.
- How could the positive impacts of migration be increased?
- How could the negative impacts of migration be reduced, or maybe avoided completely?

### D. Conclusions (10 min.)

- Facilitator & notetaker highlights some main points from the discussion in parts A, B and C.
- Final question for FGD participants: If you could give a name or title to today’s discussion, what would it be?

Thank participants, conclude the FGD.

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<sup>17</sup> This section is based on [TransRe Project, Migration for Adaptation Guidebook, Activity C5](#)

### III. The Key Informant Interview Guide

English	Language of Interview
1. What are the impacts of climate change in your work area?	
2. What are the communities doing to deal with climate change?	
3. What has and will be done by the village government regarding climate change?	
4. Are there resources allocated for climate change adaptation?	
5. Has there been any migration from your work area?	
6. What is the biggest reason for people to migrate?	
7. Is there a relation to this migration to climate change?	
8. Does the government take migration prevention measures?	
9. What forms of government support are there (if any) for people who migrate?	
10. What are the government policies regarding migration?	

## IV. The Community Workshop Guide

### A. Welcome and introduction (10 minutes)

Welcome participants.

#### (1) Background: Purpose of the CWS pilot study

- CWS believes that all people deserve to live safely and with dignity, wherever we are.
- We have been hearing from community partners that climate change is one factor in people's decisions to migrate; and that sometimes migration is the only option available for people to support themselves and their families.
- And we also are aware that both migration adapting "in-place" to climate change, involve costs and risks.
- So - we started this pilot study in January 2021, about how climate change, adaptation, and migration are related. Our goal was to understand how people perceive the costs and benefits, or "pros and cons", of options available.
- We did this to improve our support to communities who are impacted by climate change, and to learn about new ways that CWS could respond to the migration realities that people experience. We also hope that this information and report from the study, will be useful for participating communities, in your climate action planning.

#### (2) Purpose of today's workshop

- Today, we will describe what we are learning from the research.
- We are sharing our interpretation of the information from the study; and we want to see how this compares to your interpretation.
- Our study focused on qualitative information and subjective perceptions. The way that one person interprets the information, might be different from how another person interprets it. This is one reason why today's workshop is important, so we can hear your interpretations and include them in our final report.
- We will also discuss potential recommendations based on our findings; including ways that community members could use this analysis in climate change adaptation, disaster risk reduction, or to make migration safer and more beneficial to the community.

#### (3) Locations

- The study took place in five countries: Cambodia, Georgia, Haiti, Indonesia and Kenya.
- A total of 30 communities in the five countries

#### (4) Study activities

- One-on-one interviews with 210 people
- 26 focus group discussions
- Interviews with local government officials and other local leaders (38 leaders in the five countries), to understand what support or policies exist
- We also read other research papers that have been written in the five countries, to understand better what information and evidence already exists.

#### (5) Project team

- We are a team of 15 CWS staff, plus two staff from a partner organization (RCDA in Georgia); from nine countries in total.
- We worked together to design the interview surveys and discussion guide
- And we met in late May to review what we were learning, and to prepare the findings that we are sharing here today.

## **B. General learning across the five countries (5 minutes)**

Before we share about what we learned from [meeting location], first we will share some general observations from all five of the countries where we did the pilot study:

### (6) Perceptions of climate change

- People all over the world are feeling climate change.
- In places where CWS works, changing seasonal patterns, unpredictability of rainfall, and increasing water scarcity are all big concerns. Especially because of the impacts on agriculture and food security.
- Concerns also about weather-related disasters – floods, droughts, landslides.

### (7) Climate change adaptation or coping strategies

- In most places, people are already adapting their agricultural practices with resources available; or are finding other ways to cope with climate change.
- In all the study locations, we heard interest for more information – and especially, for more financial or technical resources – so that there could be more possibilities to adapt to climate change. There is a strong desire to make climate adaptation succeed.

### (8) Perceptions of migration

- Migration is relatively common in the places where we did the study. Climate change is described as one factor in migration, but not as the only factor.
- People described different patterns of migration: short-distance and long-distance; temporary and longer-term; within their country, and to other countries.
- Migration is most often perceived as a way to find work or earn money (and in some places, for education). While some people see it as hope or opportunity, it is also perceived as something risky and uncertain, even sometimes dangerous.
- Generally, people would like migration to be safer and more predictable, something that they could prepare for – especially migration to other countries, but also migration within countries.

### (9) Migration and adaptation

- Migration is perceived as a way to cope with climate change in some places (Cambodia, Haiti) more than in other places (Kenya, Indonesia).
- When people who migrate send money home, this can help their families to cope with climate changes, and to improve living conditions more generally.
- In a few places, this might contribute to agricultural adaptation (such as improving water access). Generally, though, we are hearing that more could be done, so that migration contributes positively to climate resilience in origin communities.
- And, we are hearing that migration is having negative impacts in places of origin, e.g., losing agricultural workforce and other talented people, which can make climate adaptation more difficult.

## **C. Specific learning in each country/ community location (15 minutes)**

- (10) Perceptions of climate change
- (11) Climate change adaptation or coping strategies
- (12) Perceptions of migration
- (13) Migration and adaptation
- (14) Possible recommendations

#### **D. Open discussion (40 minutes)**

- Does this interpretation sound accurate? Have we missed something?  
(Note)
- What findings or recommendations should we prioritize?  
(Note)
- Who should be made aware of this information?  
(Note)
- Are there ways that community groups or local government can use this information?  
(Note)

#### **E. Review main points from today's workshop discussion (10 minutes)**

#### **F. Conclude meeting (10 minutes)**

(15) Next steps with the study report

- CWS aims to complete our pilot research project by the end of June.
- We will translate a summary version so that it can be made available here.

(16) Are there any other suggestions?

(17) Thank and conclude

## V. Definition of Terms

CWS included the following definitions of terms as part of its interview and focus group guides. These were based on glossary terms and definitions in the following sources: NASA [Global Climate Change](#); UN Climate Change [Adaptation and Resilience](#); UNDRR/Prevention Web [Disaster Terminology](#); IOM [Glossary on Migration](#); UNEP [Global Environmental Outlook Glossary](#); and FAO [Rural income generating activities in developing countries: re-assessing the evidence](#).

WEATHER	Atmospheric conditions (e.g., rain, humidity, heat, cold) that we experience locally and over short periods of time – hours or days.
CLIMATE	Patterns of weather that happen over long periods of time – seasons, years, decades or longer – and that we experience regionally and globally.
CLIMATE CHANGE	Changes in the long-term weather patterns that we have come to expect in a certain location or region, given historical data and lived experience; and related changes in the Earth’s climate system (atmosphere, hydrosphere, cryosphere and biosphere).
GLOBAL WARMING	Long-term heating of Earth’s climate system because of human activities, particularly burning fossil fuels. This human activity is what is driving present-day climate change.
CLIMATE CHANGE ADAPTATION	Actions to reduce or avoid harmful impacts of climate change, or otherwise adjust to new or projected climate conditions.
SUDDEN-ONSET DISASTER	A disaster that is triggered by a hazardous event and that emerges quickly or unexpectedly, such as floods, or hurricanes and typhoons.
SLOW-ONSET DISASTER	A disaster that emerges gradually and over time, such as drought, sea level rise, or desertification.
DISPLACEMENT	Displacement – Movement of people who are forced to leave their homes, because of (or to avoid the effects of) conflict, violence, human rights violations, or natural or man-made disasters; including disasters related to climate change.
MIGRATION	Movement of people away from their usual place of residence, either within their home country (internal migration) or across an international border (international migration).
TEMPORARY MIGRATION	Migration with the intention of returning to usual place of residence or country of origin, after a certain amount of time.
CIRCULAR MIGRATION	Migration in which people move back and forth, i.e., between origin and destination.
HOUSEHOLD	Family members, or other people, who live with you under the same roof. <sup>14</sup>
INCOME SOURCES	Sources of cash income for household use. Examples include: agricultural production (farming, livestock), fishing, agricultural wage employment, non-agricultural wage employment, non-farm businesses or enterprises, transfers or remittances, and non-labor income sources.

<sup>14</sup> In migration contexts, this definition could be extended to include family members who have migrated to other places, and who continue to be economically or socially tied to households in places of origin, and/or who intend to return to or reunite with their household in the future.

