



Climate-induced migration and health issues

A toolkit for policymakers

Ritu Bharadwaj and Saleemul Huq

Working Paper

December 2022

Climate change

Keywords:

Loss and damage, climate migration, human trafficking, forced displacement, climate justice, climate finance, national climate change policy

About the authors

Ritu Bharadwaj, principal researcher and team leader, Climate Governance of Risk and Finance, Climate Change Group, International Institute for Environment and Development (IIED).

Prof. Saleemul Huq, Director, International Centre for Climate Change and Development (ICCCAD)

Corresponding author: Ritu Bharadwaj ritu.bharadwaj@iied.org.

Produced by IIED's Climate Change Group

The Climate Change Group works with partners to help secure fair and equitable solutions to climate change by combining appropriate support for adaptation by the poor in low- and middle-income countries, with ambitious and practical mitigation targets. The work of the Climate Change Group focuses on achieving the following objectives:

- Supporting public planning processes in delivering climate-resilient development outcomes for the poorest
- Supporting climate change negotiators from poor and vulnerable countries for equitable, balanced and multilateral solutions to climate change
- Building capacity to act on the implications of changing ecology and economics for equitable and climate-resilient development in the drylands.

Acknowledgements

We thank the Climate Emergency Collaboration Group (CECG) for funding this research. We would like to extend special thanks to the team at International Centre for Climate Change and Development for supporting us in case study research, and our team of mentors, particularly Devanshu Chakravarti and Dr Somnath Hazra who worked with the case study authors from the global South in developing their understanding on key concepts and definitions used in loss and damage discourse and how to effectively capture the local issues and challenges. We would also like to thank Benedicte Piton, senior coordinator, and Martin Cummins, coordinator, at IIED for managing the working paper's development.

Published by IIED, December 2022

Bharadwaj, R and Huq, S (2022) Climate-induced migration and health issues: a toolkit for policymakers. IIED, London.

<http://pubs.iied.org/21256IIED>

ISBN 978-1-83759-014-8

Printed on recycled paper with vegetable-based inks.

International Institute for Environment and Development
Third Floor, 235 High Holborn, London WC1V 7DN, UK
Tel: +44 (0)20 3463 7399
www.iied.org

 @iied

 www.facebook.com/theIIED

Download more publications at <http://pubs.iied.org>



IIED publications may be shared and republished in accordance with the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International Public License (CC BY-NC-ND 4.0). Under the

terms of this licence, anyone can copy, distribute and display the material, providing that they credit the original source and don't use it for commercial purposes or make derivatives. Different licences may apply to some illustrative elements, in which instance the licence will be displayed alongside. IIED is happy to discuss any aspect of further usage. Get more information via www.iied.org/Creative-Commons

IIED is a charity registered in England, Charity No.800066 and in Scotland, OSCR Reg No.SC039864 and a company limited by guarantee registered in England No.2188452.

Loss and damage is an urgent concern, driven by the increasingly harmful effects of climate change. Communities are experiencing new types and forms of climate impact, of higher frequency and intensity, which they are not equipped to handle. These impacts compel vulnerable communities to migrate to find alternative livelihoods and ways to survive. But migration generates grave socioeconomic consequences. Through case study analysis from 12 regions in Asia, Africa and the Pacific, this paper explores how climate change-induced migration is creating physical health, mental health and wellbeing issues — both for migrants and the families they leave behind. It then provides recommendations to policymakers on how to strengthen policy, planning and response frameworks to support communities manage health and wellbeing risks created by climate impacts.

Contents

Summary	4
Findings	4
Recommendations	6
1 How climate impacts and trends are changing	8
2 How climate is creating physical, mental and wellbeing issues	10
3 What is needed to address the issue	14
References	17

Summary

Developing countries are dealing with increasingly harmful effects of climate change. Many are experiencing new types and forms of climate impact, and at higher intensity than they are equipped to handle. In other words, loss and damage is so severe that affected communities and countries can no longer absorb the effects of climate risks or adapt to climate impacts. This working paper builds on Bharadwaj and Shakya (2021), which presented loss and damage case studies from the frontline as a resource to support practice and policy. It highlights findings from the case studies, and provides recommendations to policymakers in key areas.

The interplay of recurring and high-intensity climate-extreme events couples with socioeconomic factors like population density, income inequality and the degrading environment. Together, they increase the risk of survival, food insecurity and livelihood loss. In so doing, they compel vulnerable communities to migrate to find alternative livelihoods and ways to survive.

By one estimate, between 31 and 72 million people across sub-Saharan Africa, South Asia and Latin America would be displaced by 2050 due to water stress, sea-level rise and crop failure. Even with aggressive efforts to cut global emissions and the most optimistic scenarios for warming this century, these pressures will increase. A World Bank study also projects that climate change will create 216 million internally displaced communities by 2050.

While migration can help people cope during a climate crisis, it also generates issues for physical and mental health and wellbeing along with other secondary and tertiary consequences and risks. This is true both for migrants and their families (mostly women, children and elderly) left behind or those not able to migrate. Planning for, responding to and recovering from such issues needs wider recognition of the causal links between climate loss and damage (L&D), migration and health issues and an integrated effort to address them.

Findings

Recurring L&D impacts and hardships push people to despair and create health issues

- Climate-induced flooding greatly affects women, children and the elderly. Almost 93% of children who frequently face tidal flood in Tirta districts (Indonesia) experience moderate anxiety and 29% have mild depression.
- Recurring drought and cyclones also have an impact on emotional wellbeing. During drought, feelings of worry, sadness, anger and fatigue emerged within the community in the Cook Islands, due to the chronic nature of the disaster with prolonged hardships. Repeated disasters also heighten chronic mental health impacts. One case study participant said, "... one cyclone after the other, was extremely stressful" and "makes the struggle harder."
- In the municipality of Singida (Tanzania), flooding forced community members to pay more for health out of their household budgets. This additional burden, coupled with a reduction in incomes and insecurity in livelihoods, increased household stress and vulnerability.

People forced to shift livelihoods undergo mental distress, leading to alcoholism, domestic violence and other related issues

- Rural communities in Turkana County (Kenya) are facing increasing competition and conflicts over limited water and pasture resources. Increased incidences of human–wildlife conflicts threaten their lifestyles and trigger internal migration.
- Susceptibility to addiction, anxiety and emotional distress among pastoralists in Turkana communities is on the increase. People who abuse alcohol are less able to work, further exposing them to poverty and hopelessness.
- Migration to urban areas has also led to more prostitution. For women, alcohol abuse leads to abandonment of caregiver roles. It also increases their exposure to sexual and gender-based violence when they go to urban areas to sell charcoal and firewood. Some women turn to prostitution as a way to survive.
- Cultural beliefs and customs, which had provided a sense of protection from physical and social harm, are being eroded. Social structures that provided protection seldom exist for people who have migrated. Furthermore, access to education for children is poor, with malnutrition, displacement and migration preventing children from attending school.

Migrants stay in informal settlements and relief camps with limited health and sanitation facilities

- The recent increase in flood impacts in Kasese (Uganda) has led to large-scale displacement, which has resulted in overcrowding of camps. This, in turn, has led to gender inequalities, drug and alcohol abuse, and gender-based violence.
- The receding shoreline of Lake Chad Basin (Nigeria and Niger) has spurred competition over dwindling resources. Urban migration has increased demand for housing and resources such as water and arable land, creating local conflicts between farmers and pastoralists.
- Displacement also disrupts family social cohesion in Nigeria, leading to numerous reports of domestic disturbances in camps. These increase due to lack of food, improper food aid, and loss of identity, culture and known ways of life.
- In Anuradhapura and Trincomalee (Sri Lanka), women migrants are often exposed to additional vulnerabilities. The migration of mothers can result in the heightened vulnerability of children. This can cause health, nutritional, developmental and behavioural problems, as well as expose children to violent and abusive environments.

- Labour and workplace safety laws are widely disregarded. Migrants are often forced to overwork, are paid less and are exposed to pollution at work without access to safety equipment. For example, migrants working in brick kilns in Chitrakoot (India) often come back with lung disease from inhaling dust and polluted air.
- Migrating single men in Chitrakoot are susceptible to high-risk sexual behaviour, exposing them to HIV/AIDS. Those who migrate with family are not able to send their children to government schools at the destination and do not have access to subsidised healthcare. This results in higher expenditure on food, health and shelter.

Women left behind face additional responsibilities that lead to health and nutrition impacts

- Women often take on additional responsibilities when their husbands migrate, creating issues surrounding mobility and immobility. Gender-based violence, unsafe shelters, unsafe migration, human trafficking, duty of childcare or supporting the elderly create stress and anxiety in women when faced with migration or displacement.
- Chitrakoot (India) faces a severe drinking water crisis owing to multiple drought spells. The water crisis further aggravates the vulnerabilities of women with respect to sanitation and hygiene, especially menstrual hygiene, making them prone to disease.
- Groundwater depletion in Chitrakoot compounds the impact of climate change. Women must walk long distances and queue many hours for water to meet their livestock and domestic needs. Many poor households are forced to sell their assets to make ends meet. When all hope fails, suicide is a reality for many households.
- In Turkana (Kenya), access to improved water and sanitation services remains low. In Lake Chad Basin, girls are forced to forgo school to travel long distances in search of water and firewood. This impacts their physical wellbeing and puts them increasingly at risk of gender-based violence during travel.
- Climate change risks and recovery processes interact with local gendered norms to create unequal workloads and specific gendered impacts on everyday life. Lack of access to water and power after cyclones, for example, added time burdens to women's workloads in the Cook Islands. Similarly, in Vanuatu, the destruction of forest habitat by Cyclone Harold increased the workload for women and girls, who now have to walk longer distances to access clean water and fetch fuel wood.

Children staying back or migrating are exposed to emotional trauma

- Children are also more vulnerable to climate and environmental impacts than adults. Due to children's relatively weaker immune system and physical immaturity, threats such as malaria or malnutrition often result in higher levels of illness and death among them. Post-traumatic stress can also lead to illnesses later in life and result in poor cognitive development.
- Flooding displaced 70 households in the municipality of Singida (Tanzania). The displacement to new areas was more stressful for students as it took more time to commute to school. The students were fatigued by the long commute, which affected their ability to concentrate on their studies.
- Even before the conflict in Lake Chad Basin, disruption to education from climate displacement heightened the risk of exploitation and the recruitment of child combatants (boys). Meanwhile, girls are subject to kidnapping and gender-based violence as seen in the abduction of school girls in Chibok (Nigeria).

Recommendations

Include health and psychological impacts due to climate change in climate resilience plans, migration response plans and national health and development plans. Millions of people exposed to climate impacts are being, and will be, exposed to physical and psychological health issues in the coming decades. A framework will be needed to integrate these issues into action plans for urban and rural climate resilience, migration response, and national health and development.

Focus on rights-based access to basic material, emotional and social needs. Social protection programmes need to complement each other and offer access to a range of services — such as health, nutrition, education and job security — to vulnerable households. This will provide a fall-back option during crisis so migrants do not suffer from a feeling of helplessness and despair. Social protection programmes should be aligned with labour market reforms that protect migrant rights in case people are forced to move due to climate impacts. This will help ensure that migrants are not exploited due to distress.

Other priorities for social protection:

- Embrace a decentralised framework and robust management, including nuanced delivery to ensure immediate relief. To ensure this, social protection programmes will need to integrate climate risk management strategies into their design.

- Ensure portability of social assistance for migrants through a national database or registry, and provision of comprehensive entitlement and facilities that can help families cope and survive under climate-induced distress in both source and destination areas.
- Help households choose migration as an opportunity, not as a response to distress.

Focus on anticipatory action and support through social protection. Putting a system in place and building resilience before a crisis hits is more cost effective than responding later with a humanitarian response. There is a need for anticipatory risk-responsive social protection programmes that provide health and other related support to potentially vulnerable communities before a crisis strikes. These could include provision of health, nutrition and other medical support and finance in a timely and predictably manner when pre-agreed trigger points are reached based on reliable early-warning information or climate change forecasts.

Undertake assessment of possible health issues that can be created for migrants moving across borders and staying in relief camps. Infectious diseases are a leading cause of morbidity and mortality worldwide. Many of them are preventable through vaccine, but given the inequity in vaccine access, unvaccinated migrants crossing borders can potentially be exposed to dangerous infectious diseases. As we expect to see more cross-border migration, there is a need to undertake further research on the routes migrants are likely to take from climate hot spots, the burden of disease mortality and disease transmission they could become vulnerable to, based on their vaccination status and vaccine availability, and how that could be prevented.

Undertake economic assessment of action and inaction for addressing the nexus between climate-induced migration and health issues.

An economic assessment is needed for investing in universal social protection, psychological support and health centres that help communities cope with and recover from depression and anxiety related to climate-induced migration. Similarly, a cost-benefit analysis of providing decent sanitation, drinking water and health facilities in relief camps and informal settlements of migrants is needed. It should compare the cost of treatment, loss of life and productive days of work to help make the case for investment in these services.

Shape policy intervention based on local research and evidence. Addressing health-related risks of climate change across the wide range of national and local contexts requires inclusion of affected communities. This will help policymakers understand the challenges, and they can then use that evidence to

inform international and national policies and practices. Further research is needed to understand the differential impact that climate change has on the mental and physical health of men, women, boys and girls.

Avoid narrow focus on disaster risk reduction and humanitarian support and aim for holistic resilience. A holistic approach to climate resilience that targets economic, social, psychological and environmental wellbeing is needed. This will require approaches that combine disaster risk reduction, humanitarian, health and adaptation actions in designing strategies to anticipate, prepare, cope and recover from climate impacts.

Equip relief camps and migrant destinations with decent shelter, sanitation and drinking water facilities. There is a need to invest in ventilated shelters, proper sanitation and drinking water facilities for refugees and migrants. For example, recognising the contribution of migrant workers to the local economy, Kerala state government in India developed hostels for migrants of other states to provide them decent and hygienic living conditions. Design of camps and shelters should integrate the physical requirements of disabled people, and the privacy needs of women and girls, including support for menstrual hygiene.

1

How climate impacts and trends are changing

Developing countries are dealing with increasingly harmful effects of climate change. Many countries are experiencing new types and forms of climate impact, and at higher intensity than they are equipped to handle (Bharadwaj, 2021). In 2020, climate-related hazards affected close to 20 million people in India (Bharadwaj et al., 2022) and caused economic losses amounting to 0.9% of gross domestic product (GDP) (WMO, 2021). In 2017, the Caribbean faced three category 5 hurricanes — an unprecedented event. In some countries, damage exceeded annual GDP. Cyclone Ana hit Fiji in January 2021, just a month after Cyclone Yasa struck the country's northern islands. Ana left 10,000 people homeless and caused widespread damage to both infrastructure and crops (Heinrich Boll Stiftung et al., 2021). These impacts are increasingly falling into the category of loss and damage (L&D). The capacity of affected communities and countries is compromised to such an extent through L&D that they can no longer absorb the effects of climate risks or adapt to climate impacts.

The interplay of these recurring and high-intensity climate-extreme events couples with socioeconomic factors like population density, income inequality and the degrading environment. Together, they increase the risk of survival, food insecurity and livelihood loss. In so doing, they compel vulnerable communities to migrate to find alternative ways for livelihoods and survival.

Migration can occur from both slow- and rapid-onset climate distress. Slow-onset events such as drought, for example, threaten natural resource-based livelihoods like agriculture, livestock and fishery. These events then compromise people's ability to earn a living, inciting them to search for better economic opportunities through migration. Similarly, when rapid-onset hazards such as hailstorms or floods damage crops, cultivable lands and property, communities may have few or no options for in-situ adaptation. Under such situations, migration is the only viable choice for survival.

Bharadwaj (2021) assessed L&D caused by climate change across 12 different geographies across the world. This research showed that a climate crisis resulted in distress migration or forced displacement. This was true whether the crisis was caused by desertification, salination, landslides, sea-level rise, drought, floods and cyclone, or some other type of extreme weather event.

These findings also resonate with the latest report from the Intergovernmental Panel on Climate Change (IPCC, 2022). According to the report, extreme weather events have displaced on average more than 20 million people per year since 2008. The report also highlights several projections for displacement and migration due to climate change. By one estimate, between 31 and 72 million people across sub-Saharan Africa, South Asia and Latin America would be displaced by 2050 due to

water stress, sea-level rise and crop failure. Even with aggressive efforts to cut global emissions and the most optimistic scenarios for warming this century, these pressures are going to increase. A World Bank study also projects that climate change will create 216 million internally displaced communities by 2050 (Clement et al., 2021).

While migration can help people cope during a climate crisis, it also generates physical health, mental health and wellbeing issues along with other secondary and tertiary consequences and risks. This is true both for migrants and their families left behind (mostly women, children and elderly) or those not able to migrate. Planning for, responding to and recovering from such issues needs wider recognition of the causal links between climate L&D, migration and health issues, and an integrated effort to address them.

2

How climate is creating physical, mental and wellbeing issues

In this section we have presented different types of physical health, mental health and wellbeing issues created by climate change L&D for people pushed into distress migration and those left behind. This is based on the analysis of the case studies covered in Bharadwaj and Shakya (2021). Table 1 provides the location of case studies covered in our analysis.

Table 1. Location of case studies on loss and damage

CASE STUDY LOCATION
Mwaja, Singida Municipality (Tanzania)
Turkana County (Kenya)
Lake Chad Basin (Nigeria and Niger)
Kasese District (Uganda)
Chitrakoot (India)
Punakha (Bhutan)
Pekalongan (Java, Indonesia)
Western Santo Island (Vanuatu)
The Cook Islands (Pacific Ocean)
Tuvalu (Pacific Ocean)
Anuradhapura and Trincomalee (Sri Lanka)
Urir Char (Bangladesh)

Recurring L&D impacts and hardships push people to despair and create health issues

Around 50% of the population in the two watersheds in Pekalongan (Indonesia) are women, and nearly 31% are children and elderly people. Climate-induced flooding greatly affects women, children and the elderly. The case study shows that almost 93% of children who frequently face tidal floods in Tirta districts experience moderate anxiety, and 29% have mild depression. In Barbados, people with no means to protect themselves are suffering mental trauma and anxiety due to incessant rains and recurring shocks (Bharadwaj et al., 2021).

Recurring drought and cyclones also have an impact on emotional wellbeing. During drought, feelings of worry, sadness, anger and fatigue emerged within the community in the Cook Islands due to the chronic nature of the disaster with prolonged hardships. One case study (CS) participant explained: “it was hard not to bring the right food to your family, [which is] nerve wrecking and stressful... sometimes you turn your anger to your family, which is not fair”. Cyclones evoked sentiments of fear and stress, reflecting the sudden and devastating nature of the disaster: “The worry that the rest of the roof was going to come off, the wind was so loud and we were in complete darkness without power, it was scary” (CS participant).

Repeated disasters, such as drought, followed by a cyclone and then another drought or repeated cyclones, also heighten chronic mental health impacts: "... one cyclone after the other, was extremely stressful" and "makes the struggle harder" (CS participant). In the Cook Islands, the community has a deep connection to land and sea, which is referred to as 'te Pito Enua' — meaning the umbilical cord between us and the land. With this great interconnection between people and the environment, severing one is severing both. Migration because of climate impacts has devastating consequences for identity, wellbeing and material, social and cultural security (Campbell, 2019). There are also knock-on effects from migration to emotional health (for those who have migrated but also for those who remain):

"...you just feel helpless and think about what the hell for, what if now no one is coming back. You miss your family, those far away" (CS participant).

In the municipality of Singida (Tanzania), flooding forced community members to pay more for health out of their household budgets. The pit latrines in the area had started overflowing and polluting the water. This led to an eruption of diseases and increased spending on health. This additional burden, coupled with a reduction in incomes and insecurity in livelihoods, increased household stress and vulnerability.

Due to floods in the district of Kasese (Uganda), health centres and hospitals have been destroyed, creating challenges for people in accessing healthcare. The floods have further polluted the waters and waterborne diseases have been on the rise. These are causing serious health, nutritional and economic challenges for communities.

People forced to shift livelihoods undergo mental distress, leading to alcoholism, domestic violence and other related issues

Seasonal mobility forms a critical element of pastoral communities' livelihoods in Turkana County (Kenya). But with climate change, rural communities are facing increasing competition and conflicts over limited water and pasture resources. Increased incidences of human-wildlife conflicts threaten their lifestyles and trigger internal migration. Decreasing animal herds, due to mortality caused by frequent droughts, have led to what community members refer to as a "state of despair". This has led to an increase in demand of a local grain-based alcohol brew called *chang'aa*.

Susceptibility to addiction, anxiety and emotional distress among pastoralist Turkana communities is on the increase (Walla et al., 2018). Community members, especially young men and women, are increasingly abusing alcohol as a way of coping with stress and depression. This could be linked to the non-economic losses caused by

their transition from pastoralists to a settled community. There are no structured health and social systems in the community to deal with alcohol abuse. People who abuse alcohol are less able to work, further exposing them to poverty and hopelessness. For women, alcohol abuse leads to abandonment of caregiver roles. It also increases their exposure to sexual and gender-based violence when they go to urban areas to sell charcoal and firewood. Migration to urban areas pushes some women to turn to prostitution as a way to survive.

Cultural beliefs and customs, which had provided a sense of protection from physical and social harm, are being eroded. People are isolated and alone in urban centres where they have no relatives, leading to depression. The social structures that provided protection seldom exist for people who have migrated. Furthermore, access to education for children is poor, with malnutrition, displacement and migration preventing children from attending school.

In Chitrakoot (India), Kols — the Indigenous tribal community — use their traditional knowledge of medicinal plants to treat humans and livestock. However, due to climate change, the natural habitat is fast disappearing. Many medicinal plants are becoming extinct.

People forced to give up their traditional livelihood practices face mental stress and anxiety. In the municipality of Singida (Tanzania), those losing money in businesses, such as the owners of the cement blocks factory and flour mill, underwent a stressful period after the businesses closed due to climate impacts. They had to look for alternative livelihoods to fulfil the basic needs of their families.

Migrants stay in informal settlements and relief camps with limited health and sanitation facilities

Floods frequently destroy homes in the district of Kasese (Uganda), which forces people to take shelter in relief camps. The recent increase in flood impacts has led to large-scale displacement, which has resulted in overcrowding of camps. This, in turn, has led to gender inequalities, drug and alcohol abuse and gender-based violence. In the settlement camps, there are outbreaks of hygiene-related diseases like cholera due to lack of latrines and use of contaminated water. Measures to prevent COVID-19 are also missing in all settlement camps. Due to overcrowding, social distancing and hand washing are hard to implement. With children unable to go to school, there are high levels of teenage pregnancy and early marriages in camps.

The receding shoreline of Lake Chad Basin (Nigeria and Niger) has spurred competition over dwindling resources (Vivekananda et al., 2019). The population

of urban areas around the basin is multiplying. The city of Maiduguri in Nigeria, for example, has 20 times more inhabitants than in the 1960s (Krininger, 2015). Urban migration has increased demand for housing and resources such as water and arable land, creating local conflicts between farmers and pastoralists. LCBC (2016) found influxes of displaced people into the basin area have strained host resources and capacities such as water supply and health services in already vulnerable communities.

Displacement also disrupts family social cohesion, leading to numerous reports of domestic disturbances in camps. These incidents increase due to lack of food, improper food aid and loss of identity, culture and known ways of life (LCBC, 2016). Disabled and elderly communities with special needs are at high risk as provisions for them are totally lacking or inadequate in displaced shelters and in overcrowded cities like Maiduguri (LCBC, 2016). For men and boys, employment, livelihoods and income-generating activities are almost non-existent. This leads to frustration, depression and other mental health challenges, and leaves them vulnerable to radicalised ideologies and recruitment by Boko Haram (LCBC, 2016).

During climate crisis, it is mostly men who migrate in search of alternative livelihood options in Anuradhapura and Trincomalee (Sri Lanka). If women migrate, they are often exposed to additional vulnerabilities due to lack of familiarity and security in the host environment (SLYCAN Trust, 2020). Migration of mothers can result in heightened vulnerability of children. This can cause health, nutritional, developmental and behavioural problems, and can expose children to violent and abusive environments. For children and youth, dangers include neglect or abuse, nutritional deficiencies leading to stunting or wasting, lack of access to education and emotional trauma.

When livelihoods are destroyed due to climate impacts, Kols in Chitrakoot (India) are forced to migrate and work in stone mines under inhuman, environmentally unsafe and exploitative work conditions. Migrating single men are also susceptible to high-risk sexual behaviour exposing them to HIV/AIDS. The receiving areas are often inadequately prepared to provide migrants with basic shelter and sanitation. This leads to migrants often living in unsanitary conditions, exposing themselves to disease. Most migrants do not have proper housing facilities, access to sanitation and subsidised food grains from the government. Those who migrate with family are not able to send their children to government schools at the destination and do not have access to subsidised healthcare. This results in higher expenditure on food, health and shelter.

Labour and workplace safety laws are widely disregarded. Migrants are often forced to overwork, are paid less and are exposed to pollution at work

without access to safety equipment. For example, migrants working in brick kilns often come back with lung disease from inhaling dust and polluted air. Most migrants work on informal contracts and are often engaged through intermediaries, which means they are exposed to exploitation and have no accident or insurance coverage. Migrants working in informal jobs are subjected to verbal and physical abuse. Without a safety net or support and often far from families, they are exposed to mental stress and depression. The latest report of the National Crime Records Bureau of India (2022) shows that one in four of the recorded 164,033 suicide cases during 2021 was a daily wage earner.

Women left behind face additional responsibilities that lead to health and nutrition impacts

For women, there are challenges when they migrate, but also when they are left behind as they often take on additional responsibilities when their husbands migrate. In Chitrakoot (India), men migrate, leaving behind women, children and elderly people. This increases the responsibility and workload of women, making them the only caregivers for both children and the elderly. Most of these women also belong to poor families and are already in poor health. The National Family Health Survey 2015–16 said 36% of women in the district have a body mass index rate below normal ($<18.5\text{kg}/\text{m}^2$). When women migrate or get displaced, they face gender-based violence, unsafe shelters, unsafe migration and human trafficking, alongside their duty of care for children and the elderly. This creates stress and anxiety.

Chitrakoot faces a severe drinking water crisis owing to multiple drought spells. Most of the tanks and ponds — as well as traditional and masonry wells used for drinking water — have dried up. About 151 ponds have disappeared since 2010 (CANSAs, 2018). The water crisis further aggravates the vulnerabilities of women with respect to sanitation and hygiene, especially menstrual hygiene, making them prone to diseases. Health-related expenses push these poor people into a vicious cycle of debt and unending exploitation.

Groundwater depletion compounds the impact of climate change. The grim water situation in the region is best illustrated by a local saying, “let the husband die but the earthen pot of water should not be broken” (Rai, 2007). Under severe water-stressed conditions, women have to cover long distances to collect water for livestock and domestic needs, as well as being engaged in other economic activities like farming and livestock rearing. Fetching water involves getting up early, walking long distances and waiting for hours in a queue. Many poor households are forced to sell their assets to make ends meet. When all hope fails, suicide is a reality

for many households. There have been many stories reported by local and national media of farmers taking their own lives after failing to repay their debts and due to starvation (Lahariya, 2019).

Similarly, in Turkana (Kenya), access to improved water and sanitation services remains low. Nearly 43% of people take more than one hour to collect water in the dry season and 24% take more than two hours. In Lake Chad Basin, the impacts of livelihood loss are particularly acute for women and girls who have had to take up jobs outside the home for economic survival. Girls are forced to forgo school to undertake long journeys in search of water and firewood, impacting their physical wellbeing and putting them increasingly at risk of gender-based violence during travel.

Climate change risks and recovery processes interact with local gendered norms to create unequal workloads and specific gendered impacts on everyday life. Lack of access to water and power after cyclones, for example, added time burdens to women's workloads in the Cook Islands: "I had to travel...some distance to collect water in containers and bring back to our home for drinking and cooking" (CS participant). Power shortages also added to workloads; one woman was forced to cook an entire freezer's worth of food over a couple of days, which, ordinarily "would have lasted us up to a month" (CS participant). Similarly, in Vanuatu, the destruction of the forest habitat by Cyclone Harold increased the workload for women and girls, who now have to walk longer distances to access clean water and fetch fuel wood.

Children staying back or migrating are exposed to emotional trauma

Children are also more vulnerable to climate and environmental impacts than adults. Due to children's relatively weaker immune systems and physical immaturity, threats such as malaria or malnutrition often result in higher levels of illness and death among them. Every year, environmental factors cause the deaths of 1.7 million children under five. About 1 billion children (nearly half of the world's children) live in extremely high-risk countries, where they are being forced to grow up in increasingly dangerous conditions.

When floods hit, schools and health clinics are destroyed. When droughts occur, children spend less time in school because they have to walk many kilometres to collect water. Rising sea levels and frequent cyclones lead to displacement and distress migration of families. Almost every child on Earth is exposed to at least one of these climate and environmental hazards.

Children experience mental trauma, higher rates of anxiety and post-traumatic stress when they are exposed to these circumstances and their safety nets

are weakened. These stresses can lead to illnesses later in life and result in poor cognitive development. Such impacts are more pronounced for children in Least Developed Countries and Small Island Developing States. Many of these countries are fragile due to poor infrastructure and governance systems, and suffering from conflict.

In Mwaja village, in the municipality of Singida (Tanzania), flooding displaced 70 households. Some went to stay with relatives, increasing the burden on their hosts. The displacement to new areas was more stressful for students as it took more time to commute to school. The students were fatigued by the long hours, which affected their ability to concentrate on their studies. The flooding of fertile land means there is less land available in the village for agriculture. Some households fail to access basic needs due to lower incomes and are therefore unable to continue sending their children to school.

Refugees and internally displaced people interviewed in Lake Chad Basin said multiple internal displacements per year had caused their children to forgo school. This is a highly underdeveloped region, with only one school (Lahariya, 2019). Climate change has forced many displaced communities to choose between economic survival and their children's education — they have moved closer to the receding lake to access water, fish and trade but this has meant moving further away from the only school.

Even before the conflict in Lake Chad Basin, disruption to education from climate displacement heightened the risk of exploitation and the recruitment of child combatants (boys). Meanwhile, girls are subject to kidnapping and gender-based violence as seen in the abduction of school girls in Chibok (Nigeria) (Tower, 2017). In camp and urban contexts, the lack of education is jeopardising the future of generations of children displaced by both climate and conflict in the region.

In Chitrakoot (India), when men migrate, it is mostly girls who share the household burden with their mothers. Girls help their mothers fetch water from long distances. When they are not with their mothers, children stay at home to look after their younger siblings or perform household chores. These activities deprive girls of an education, as well as stopping them from playing and enjoying their childhood.

The food and nutritional security of children is also being compromised in Chitrakoot. As per the National Family Health Survey 2015–16, approximately 50% of children in the district are stunted (height-to-age), 33% wasted (weight-to-height) and 51% underweight. Malnutrition among adolescent girls and children results in poor health and reduced immunity. This adds to the burden of higher healthcare costs on poor households.

3

What is needed to address the issue

There are growing concerns that, with climate change impacts on the increase, migration will become less of a choice. In many cases, climate change may lead to temporary and permanent displacement, exposing people to mental stress and anxiety, creating health, sanitation and other related issues. This will affect both people on the move, in temporary relief camps, and those left behind. There is a need to develop targeted actions, at national and international levels, to address the issue.

Include health and psychological impacts due to climate change in climate resilience plans, migration response plans and national health and development plans

Climate change policies and response frameworks are insufficient for addressing, managing and minimising the risks to physical and mental health, and wellbeing created by climate change L&D. Climate and development policymakers and planners urgently need to recognise that millions of people exposed to climate impacts are being, and will be, exposed to these physical and psychological health issues in the coming decades. A framework will need to be developed to integrate these issues into action plans for urban and rural climate resilience, migration response, and national health and development.

Focus on rights-based access to basic material, emotional and social safety

Men, women and children exposed to climate and environmental risks need a rights-based guarantee of basic material, emotional and social safety. This would include access to decent healthcare, foster care (for children orphaned, displaced or separated from parents during extreme climatic events), education, shelter and food security, including psychological support. This might require creating a helpline where they can seek help during distress (and creating awareness about it). For example, the migration helpline in Jharkhand (India) has been helping migrants in distress and providing counselling to them (Bharadwa, 2022). Migrant support centres that link migrants with others from their region at the destination site may be needed. This would provide advice on various issues and a migrant network for psychological support and a feeling of being connected at destination. An extended network of nongovernmental and civil society organisations could complement the official government-run system, acting as informal resource centres for migrants. The network could also provide food, immediate counselling and logistical support during transit and at destination site.

Social protection programmes need to complement each other and offer vulnerable households access to a range of services — such as health, nutrition, education and job security. This will provide a fall-back option during crisis so they do not suffer from a feeling of helplessness and despair. Social protection programmes should be aligned with labour market reforms that protect migrant rights in case people are forced to move due to climate impacts. This will help ensure that migrants are not exploited due to distress.

Other priorities for social protection:

- Embrace a decentralised framework and robust management, including nuanced delivery to ensure immediate relief. To ensure this, social protection programmes will need to integrate climate risk management strategies into their design.
- Ensure portability of social assistance for migrants through a national database or registry, and provision of comprehensive entitlement and facilities that can help families cope and survive under climate-induced distress in both source and destination areas.
- Help households choose migration as an opportunity, not as a response to distress. Development planning needs to prepare in-migration hotspots for inflows of migrants, and ensure they can integrate them. This involves creating livelihood opportunities in tier 2 and 3 cities or in industrial hubs along with basic infrastructure and facilities to help migrants move in such cities. Policymakers should identify migrant feeder areas to such cities and map skills of people in light of skill requirements in these cities or industrial locations.

Focus on anticipatory action and support through social protection

Putting a system in place and building resilience before a crisis hits is more cost effective than responding later with a humanitarian response. There is a need for anticipatory risk-responsive social protection programmes that provide health and other related support to potentially vulnerable communities before a crisis strikes. A study on the Economics of Early Response and Resilience showed that every US\$ spent on disaster resilience resulted in benefits — in the form of reduced humanitarian spend, avoided losses and development gains — of US\$2.8 in Ethiopia and US\$2.9 in Kenya (CHASE 2012). Conversely, it costs much more to provide relief and response after a crisis strikes.

In the absence of social protection, climate shocks push many households further into poverty and force households to adopt destructive coping strategies (for example, missing meals, taking children out of school, foregoing medical care). These can in turn have long-term negative impacts on the opportunities of the next generation. Evidence shows that children born during a drought are more likely to be chronically malnourished later in childhood than those who are not (Fuentes et al., 2007). People who are well nourished and who have been well nourished from birth are sick less often, achieve more at school and go on to earn more during adulthood. Chronically undernourished children are disadvantaged throughout life and are more likely to have children of their own who are trapped in a cycle of poverty and undernutrition (Gubbels et al., 2011).

The anticipatory risk responsiveness of social protection instruments can include provision of health, nutrition and other medical support and finance in a timely and predictable manner, when a pre-agreed trigger point is reached based on reliable early warning information or climate change forecasts. This can help communities prepare for a climate stress before it occurs and cope with it when it occurs so that the need for humanitarian response is either removed or reduced. This pre-agreed set of responses or actions will need to be tailored and costed based on what is needed to help communities prepare, cope and recover from a climate crisis in diverse contexts, and how it can be delivered under existing social protection programmes. Such an approach can make it cost effective to manage climate-related risks, overcome vulnerability and achieve wellbeing.

Undertake assessment of possible health issues that can be created for migrants moving across borders and staying in relief camps

Infectious diseases are a leading cause of morbidity and mortality worldwide. Many of them are preventable through vaccine, but there is inequity in access to vaccines. As per WHO data, in 2021, 25 million children either did not receive vaccinations or were only partially vaccinated. Out of these, more than 60% live in 10 countries: Angola, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Myanmar, Nigeria, Pakistan and the Philippines (WHO, 2022). When unvaccinated individuals are forced to migrate across borders, their vulnerability to infection increases, especially when they have to stay in cramped spaces within relief camps.

Recent news from the BBC (2022) confirmed that one person had died and more than 50 diphtheria cases have been reported among asylum seekers staying in camps in the UK. Diphtheria is a highly contagious infection that affects the nose and throat and sometimes causes ulcers on the skin. Babies and children in the UK are vaccinated against diphtheria, which means that cases are rare in the country. However, the infection is potentially dangerous to migrants who come from countries where they are not fully vaccinated.

As we expect to see more cross-border migration, there is a need to undertake further research on the routes these migrants are likely to take from climate hotspots, and the burden of disease mortality and disease transmission they could become vulnerable to, based on their vaccination status and vaccine availability. This research could be used to prevent future infectious disease among migrants due to climate change.

Undertake economic assessment of action and inaction for addressing the nexus between climate-induced migration and health issues

An economic assessment is needed for investing in universal social protection, psychological support and health centres that can help communities cope and recover from depression and anxiety from climate-induced migration. Similarly, a cost–benefit analysis of providing decent sanitation, drinking water and health facilities in relief camps and informal settlements of migrants compared to the cost of treatment, loss of life and loss of productive days of work can help make the case for investment in these services.

Shape policy intervention based on local research and evidence

Social protection and adaptation actions can play an important role in reducing risks to vulnerable communities, and mental and other health-related issues created due to climate change. But these actions are ultimately governed by the complex multidimensional factors that determine the vulnerability of individuals, households, communities and regions. These include existing poverty levels, social and economic inequalities, migration patterns (with family/without family), social norms and traditional practices. Addressing health-related risks of climate change across the wide range of national and local contexts requires inclusion of affected communities. This will help policymakers understand the challenges, and they can then use that evidence to inform international and national policies and practices.

Further research is needed to understand the differential impact that climate change has on the mental and physical health of men, women, boys and girls. In general, women, women-headed households and children are perceived as being more vulnerable to mental health and anxiety during a climate crisis. A gendered perspective can help focus attention on multiple inter-related forces that shape vulnerability, and the ways in which vulnerability is gendered and intersects with other social dimensions. It can also help in developing policy recommendations on how to strengthen existing social protection schemes or create new ones to provide adequate preventive and coping mechanisms for vulnerable individuals and households, particularly women and girls.

Avoid narrow focus on disaster risk reduction and humanitarian support and aim for holistic resilience

The most harmful psycho-social-spiritual impacts of climate disruption are caused by persistent overwhelming stresses due to compounding impacts. A holistic approach to climate resilience that targets economic, social, psychological and environmental wellbeing is needed. This will require approaches that combine disaster risk reduction, humanitarian, health and adaptation actions in designing strategies to anticipate, prepare, cope and recover from climate impacts. The responses might need to include actions that go beyond business-as-usual to be effective. These could focus on psychological counselling and building life skills for managing climatic risks. Early warning and early action such as planned migration for families exposed to climate impacts should give special consideration to children's mobility and their long-term learning opportunities. It is also essential to improve the mental health response systems of children and their families to deal with existing and future climate challenges. Humanitarian response should also include measures to control spread of waterborne diseases such as diarrhoea and vector-borne diseases that typically increase in the aftermath of floods, cyclones, and so on.

Equip relief camps and migrant destinations with decent shelter, sanitation and drinking water facilities

The housing and living conditions of most relief camps and informal settlements where migrants stay is poor. They offer only limited access to clean drinking water and basic sanitation. Due to lack of facilities, migrants live in cramped temporary housing and their cooking, bathing, and so on, often takes place in the open. The poor living conditions of migrants leads to spread of diseases within their groups and also among the local populations. There is a need to invest in ventilated shelters, proper sanitation and drinking water facilities for refugees and migrants. For example, recognising the contribution of migrant workers to the local economy, Kerala state government in India has developed hostels for migrants of other states to provide them decent and hygienic living conditions (BFK, n.d.). Design of camps and shelters should integrate the physical requirements of disabled people, and the privacy needs of women and girls, including support for menstrual hygiene.

References

- BBC (27 November, 2022) Diphtheria cases rising among asylum seekers. www.bbc.co.uk/news/uk-63771091
- BFK (n.d.) Apnar Ghar projects. <https://bfk.kerala.gov.in/apna-ghar-projects/>
- Bharadwaj, R (1 June 2022) A helpline that is a lifeline for immigrants. www.iied.org/helpline-lifeline-for-migrants
- Bharadwaj, R, Chakravarti, D, Karthikeyan, N, Hazra, S, Daniel, U, Topno, J and Abhilashi, R (2022) Climate change, migration and vulnerability to trafficking. IIED, London. <https://pubs.iied.org/20936iied>
- Bharadwaj, R and Shakya, C (2021) Loss and damage case studies from the frontline: A resource to support practice and policy. IIED, London. <https://pubs.iied.org/20551iied>
- Bharadwaj, R, Gallagher, C, Carthy, A, Nisi, N, Shakya, C and Addison, S (2021) Climate change loss and damage: 1st deliberative dialogue report. www.iied.org/20346iied
- Campbell, J (2019) Climate Change, Migration and Land in Oceania. Toda Peace Institute. <https://toda.org/policy-briefs-and-resources/policy-briefs/climate-change-migration-and-land-in-oceania.html>
- CANSA (2018) District Climate Resilience Plan of Chittrakoot. <https://cansouthasia.net/dcrp-chittrakoot/>
- CHASE (2012) Economics of Early Response and Resilience
- Clement, V, Rigaud, KK, de Sherbinin, A, Jones, B, Adamo, S, Schewe, J, Sadiq, N and Shabahat, E (2021) Groundswell Part 2: Acting on Internal Climate Migration. World Bank, Washington, DC.
- Fuentes, R and Seck, P (2007) The Short-Term and Long-Term Human Development Effects of Climate-Related Shocks: Some Empirical Evidence. UNDP, New York.
- Gubbels, P (2011) Escaping the hunger cycle: pathways to resilience in the Sahel. Sahel Working Group/ Groundswell International.
- IPCC (2022) Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press.
- Krinninger, T (12 July 2015) Lake Chad: Climate change fosters terrorism. Deutsche Welle. www.dw.com/en/lake-chad-climate-change-fosters-terrorism/a-18899499
- Lahariya, K (26 July 2019) Six farmers have committed suicide in the last fortnight. <https://khabarlahariya.org/loan-waiver-crisis-banda-mahoba-farmer-suicides/>
- LCBC (2016) The Lake Chad Development and Climate Resilience Action Plan. <https://openknowledge.worldbank.org/bitstream/handle/10986/23793/Main0report.pdf?sequence=1&isAllowed=y>
- National Crime Records Bureau (2022) Accidental Deaths & Suicides in India 2021. Government of India. https://ncrb.gov.in/sites/default/files/ADSI-2021/ADSI_2021_FULL_REPORT.pdf
- Rai, AK (2007) Crisis in Bundelkhand Region. *Development Newsletter* 17(4) 9–10.
- SLYCAN Trust (2020) Climate change and human mobility in Sri Lanka: Impacts and actions across sectors. <https://www.slycantrust.org/climate-change-and-human-mobility-in-sri-lanka>
- Tower, A (18 September 2017) Shrinking options: The nexus between climate change, displacement and security in the Lake Chad Basin. Climate Refugees. <https://www.climate-refugees.org/reports/>
- Vivekananda, J, Wall, M, Sylvestre, F and Nagarajan, C (2019) Shoring up stability: Addressing climate and fragility risks in the Lake Chad region. adelphi research, Berlin. <https://shoring-up-stability.org/>
- Walla, JM, Mahero, MW, Namusisi, S, Hoffman, SJ and Robertson, C (2018) Outcomes of climate change in a marginalized population: An ethnography on the Turkana pastoralists in Kenya. *AJPH Perspectives* 108(Supp 2), S70-S71.

Loss and damage is an urgent concern, driven by the increasingly harmful effects of climate change. Communities are experiencing new types and forms of climate impact, of higher frequency and intensity, which they are not equipped to handle. These impacts compel vulnerable communities to migrate to find alternative livelihoods and ways to survive. But migration generates grave socioeconomic consequences. Through case study analysis from 12 regions in Asia, Africa and the Pacific, this paper explores how climate change-induced migration is creating physical health, mental health and wellbeing issues — both for migrants and the families they leave behind. It then provides recommendations to policymakers on how to strengthen policy, planning and response frameworks to support communities manage health and wellbeing risks created by climate impacts.

IIED is a policy and action research organisation. We promote sustainable development to improve livelihoods and protect the environments on which these livelihoods are built. We specialise in linking local priorities to global challenges. IIED is based in London and works in Africa, Asia, Latin America, the Middle East and the Pacific, with some of the world's most vulnerable people. We work with them to strengthen their voice in the decision-making arenas that affect them — from village councils to international conventions.



International Institute for Environment and Development
Third Floor, 235 High Holborn, London WC1V 7DN, UK
Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
www.iied.org

Funded by:



This work was made possible through the support of the Climate Emergency Collaboration Group, a sponsored project of Rockefeller Philanthropy Advisors.



Knowledge
Products