



ANY TIDAL WAVE COULD DROWN US

STORIES FROM THE CLIMATE CRISIS

AMNESTY
INTERNATIONAL



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Cover photo: House destroyed by the rising water levels, Cedeño, Honduras, October 2022

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GLOSSARY

CSIPN	Center for Support of Indigenous Peoples of The North
FIAN INTERNATIONAL	Food First Information and Action Network
IPCC	Intergovernmental Panel on Climate Change
OECD	Organisation for Economic Co-operation and Development
OHCHR	Office of the High Commissioner for Human Rights
UNDrip	United Nations Declaration on the Rights of Indigenous Peoples
UNDRR	United Nations Office for Disaster Risk Reduction
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization

EXECUTIVE SUMMARY

“For us we want a safe and sustainable environment, where we are not only able to access equal opportunities and secure improved livelihoods, but where the environment we live in is conducive, clean and where we are able to enjoy the environmental benefits that our forefathers have enjoyed.”

Edwina Biyau, Fiji¹

The climate crisis is upon us. It is interacting with other socio-economic and political factors to worsen the living conditions of millions of people and make the enjoyment of their human rights an even more distant possibility.

Recent reports by the Intergovernmental Panel on Climate Change (IPCC) could not be clearer: the window of opportunity to avoid even more catastrophic impacts is rapidly closing.

Yet, greenhouse gas emissions continue to rise and states continue to approve new fossil fuel projects and are backtracking on fossil fuel phase out. These trends are worsening in the context of the Russian invasion of Ukraine and the global spike in energy prices. Not a single wealthy industrialized country is reducing emissions fast enough to prevent further climate change-driven erosion of human rights. Existing pledges will lead to an increase of global average temperature of 2.5°C, which will be catastrophic for people around the world. Wealthier countries are failing to meet their obligations under the Paris Agreement and human rights law to provide adequate finance and support to less wealthy countries to reduce their carbon emissions and to adapt to the impacts of climate change. Wealthy industrialized country are also largely refusing to meet their obligations to provide support and remedy to less wealthy countries for the loss and damage they are suffering.

As a consequence of the failures of governments – particularly the governments of wealthy countries, the human rights of millions of people are being violated in all parts of the world. The climate emergency is becoming a human rights crisis of unprecedented proportions. This is clear from the stories and lived experiences of affected communities. These stories illustrate how climate change-related impacts harm people, how climate change can aggravate other vulnerabilities, and how these changes prevent people from living fulfilling lives.

But people at the frontline of the climate crisis are not passive sufferers. They often have important suggestions for concrete and specific measures to limit the impact of climate change on the enjoyment of their rights.

This report showcases communities' experiences to provide a snapshot of how climate change negatively affects the enjoyment of human rights in different contexts. It features seven brief case studies, each one

¹ Interview with Amnesty International, October 2021.

illustrative of different climate change-related events; the extent and breadth of negative impacts on human rights; and of the disproportionate harm experienced by people and groups who are marginalized, neglected or oppressed. The case studies were compiled by the International Secretariat of Amnesty International, with individual stories being collected by people from or close to the communities being described, including Amnesty International's country offices, local organizations and consultants.

The cases of south-west **Bangladesh** (Satkhira and Khulna districts), south-west **Honduras** (Fonseca Gulf, municipality of Marcovia) and **Senegal** (city of Saint-Louis) are particularly emblematic of the severe impact of sea-level rise, storm surges and floods on the rights to life, health, food, water, sanitation, adequate housing, work and an adequate standard of living in impoverished and marginalized coastal communities.

The cases of the Innu community of Pessamit in the province of Quebec, **Canada**, and of Indigenous peoples in Yakutia, **Russian Federation**, are illustrative of the distinct impacts that the climate crisis has on Indigenous peoples, particularly on their cultural rights and their traditional way of life.

The case of the residents of the Daloumani Safe Home in **Fiji** is an example of the impacts of climate change on marginalized people living in informal settlements with inadequate housing, as well as the additional burden suffered by people of diverse sexual orientation and/or gender identity as a consequence of stigma and discrimination.

The case of **Austria and Switzerland** shows how the rights of older people, people with disabilities and people experiencing homelessness are particularly threatened by more frequent and severe heat extremes in Europe.

Each case study provides a brief overview of the socio-economic context of the population described; climate change-related events experienced by the community or group; other factors contributing to environmental degradation that increase vulnerability to climate change – such as overfishing or the impacts of certain industries, when applicable; the human rights impacts of climate change and environmental degradation on the communities or groups; and community-based initiatives and demands.

This report does not provide an exhaustive description of all the human rights impacts suffered by these and other communities as a result of climate change. Nor does it intend to provide a comprehensive analysis of the measures taken by national and local authorities in each of the featured countries to tackle climate change and its impacts.

Instead, the report provides snapshots of community experiences. The report adds value to existing materials by foregrounding human experience and by making connections between these experiences. The stories featured provide a clear illustration of how the impacts of climate change are magnified by economic, social, political and cultural factors that compound pre-existing situations of marginalization, discrimination, colonization and oppression. They show that, despite their resourcefulness, communities need much more support from the governments of their own countries and from wealthier countries to take the adaptive measures needed to adequately protect their human rights from the impacts of climate change. They also show the significant loss and damage some communities face as the result of the climate crisis, and that they are generally left to fend for themselves. This has catastrophic consequences for communities that are already impoverished and marginalized, often resulting in forced migration, indebtedness and exploitation.

By listening to the stories and recommendations of those who experience significant impacts of climate change, we can all learn, understand, connect the dots, get outraged and act. This applies to members of the general public whose lives have not yet been totally turned upside down by the climate crisis. But most importantly, it applies to those in positions of power, particularly state actors, international governmental organizations and the private sector. National and local politicians and officials, business executives and shareholders, financial institutions, and decision-makers in inter-governmental organizations must listen to those whose rights are affected by their decisions or their failure to take action.

The stories of suffering and hardship featured in this report are a call to action. They show the urgency of putting communities, human rights and humanity above short-term financial and political interests. Specifically, all states must step up their climate change mitigation (*i.e.* reducing carbon emissions) and adaptation efforts in order to protect human rights to the greatest possible extent. They must also put in place human rights-consistent mechanisms to provide adequate financial means, technical support and access to remedy, including compensation, to people whose rights have been negatively affected as a result of the climate crisis. Having contributed the most to climate change and possessing the greatest resources, wealthy industrialized states have a heightened obligation to reduce emissions at a faster pace, provide resources to support developing countries in climate change mitigation and adaptation and redress loss and damage.

The local organizations that contributed to the case studies endorse the calls to action and recommendations.

SUMMARY OF RECOMMENDATIONS TO ALL STATES

- Protect people by urgently reducing greenhouse gas emissions, and, in particular, prioritising the phase out of fossil fuels.
- Adopt and implement human rights-consistent adaptation measures that adequately protect people from the foreseeable and unavoidable impacts of the climate crisis.
- Ensure that measures intended to protect people from the effects of climate change do not result in the violation of other human rights and that the transition to decarbonized and more resilient economies and societies is just, fair and inclusive for all, contributing to correcting existing imbalances in terms of enjoyment of and access to rights.
- Guarantee the right to information and participation in decision-making to all and particularly to groups and communities most affected by the climate crisis, climate response measures and other economic and development activities that can impact on their human rights.
- Fully implement the rights of Indigenous peoples, including their rights to self-determination, land and free, prior and informed consent, and recognize Indigenous knowledge and science.
- Conduct inclusive and participatory loss and damage needs assessments considering the adverse effect of climate change on the enjoyment of human rights and ensuring that the individuals and groups most affected are fully able to participate.
- Provide adequate resources to address and provide remedy for loss and damage, including by establishing an international loss and damage financial facility, and ensuring all responses to loss and damage are inclusive, intersectional, gender-responsive and promote equality for individuals who are already marginalized.
- Safeguard the human rights of people displaced or at risk of displacement.

SUMMARY OF RECOMMENDATIONS TO WEALTHY INDUSTRIALIZED COUNTRIES

- Reduce emissions faster to avoid imposing unreasonable emission reduction expectations on developing countries.
- Significantly increase funding to less wealthy countries for human rights-consistent mitigation and adaptation measures.
- Ensure that climate funding is additional to existing commitments for overseas development assistance, that climate finance to low-income countries is in the form of grants, not loans and that a better balance is achieved between mitigation and adaptation funding.
- Provide additional and dedicated financial means, technical support and access to remedy, including compensation, to people in developing countries whose rights have been negatively affected as the result of loss and damage caused by the climate crisis.

1. METHODOLOGY

This report is based on desk and field research realized through a collaboration between Amnesty International, national non-governmental organizations and affected communities.

The International Secretariat of Amnesty International conceptualized this project, undertook complementary desk reviews, and drafted this document. In all countries except Austria, Switzerland and Canada, where Amnesty International conducted its own research, the field research was carried out by activists, consultants or representatives of NGOs working on climate justice-related issues. They conducted interviews and focus groups with representatives of affected communities and grassroots groups.

The case studies vary in scope and depth, reflecting available resources and the respective work of the partner organizations.

More specifically (in alphabetical order):

- In Austria and Switzerland, Amnesty International interviewed plaintiffs in two legal cases currently before the European Court of Human Rights, *Klimaseniorinnen v. Switzerland* and *Mex M v. Austria*, illustrating the violations of human rights respectively of older women and people with disabilities stemming from inadequate government action. Amnesty International Austria also carried out interviews with 11 people experiencing homelessness and two healthcare professionals working with people experiencing homelessness.
- In Bangladesh, Amnesty International collaborated with Nagorik Uddyog (the Citizen's Initiative), a Bangladeshi NGO working to promote the rights of women and socially excluded, unprivileged and minority communities. Researchers from Nagorik Uddyog visited four unions in the Shyamnagar sub-district (or *upazila*) of the Satkhira district on the border with India. These were Burigoalini, Munshiganj, Ishwaripur and Gabura. They also visited the union of South Bedkashi, in the Koyra sub-district of Khulna district.² Researchers held focus group discussions with almost 100 people and 25 individual interviews in the villages they visited.
- In Canada, Amnesty International Canada Francophone section collaborated with the Innu community of Pessamit. Interviews were conducted with 17 people including staff of the Innus Council of Pessamit (the council presiding over the reserve) and other members of the community, including elders and youth. Interviews were also undertaken with a researcher from the Laboratoire de dynamique et de gestion intégrée des zones côtières of the Université du Québec à Rimouski (UQAR), mandated by the community to analyse soil erosion; with staff of the First Nations of Quebec and Labrador Sustainable Development Institute; as well as with the Société pour la nature et les parcs du Québec, which is supporting the community in the creation of a protected area for the caribou in the Pipmuakan region. The interviews were conducted face-to-face and remotely, some in Innu and others in French, by a member of the community who was hired to support the project and the research team of Amnesty International Canada Francophone, using a questionnaire based on the different rights established by the United Nations Declaration on the Rights of Indigenous peoples (UNDRIP) and other related treaties.
- In Fiji, Amnesty International worked with a climate justice activist and local consultant. Eight people were interviewed from Daulomani Safe Home (a makeshift shelter for homeless people) and one person who lived nearby. They all identified as Indigenous Fijian (iTaukei) and as gay and/or

² An upazila or sub-district includes several union parishads. A union consists of nine wards, each of which usually includes one or more village.

transgender, although the community is open to anyone at risk of being homeless. The people interviewed all worked in the informal sector.

- In Honduras, Amnesty International collaborated with the Honduran section of FIAN International (Food First Information and Action Network). FIAN Honduras carried out three studies in partnership with academics and students from the National Autonomous University of Honduras: an analysis of the impact of climate change on the progressive realization of the right to food in the municipality of Marcovia in Choluteca department; a study on the impact of climate change on coastal resources and livelihoods in the three communities of Guapinol, Cedeño and Punta Ratón in Marcovia; and a socio-economic analysis of families that depend on artisanal fishing in communities in Marcovia. In the context of these studies, interviews, focus groups and workshops were conducted in the communities with more than 100 people representatives of the affected groups, as well as with key government officials.
- In Russia, Amnesty International collaborated with the Indigenous-led Center for Support of Indigenous Peoples of the North (CSIPN). Between October-December 2021, CSIPN researchers carried out a total of 57 interviews with Indigenous Peoples in the Arctic region of Yakutia (or Republic of Sakha). In particular they visited Indigenous peoples' settlements in the Bulunsky district (Tiksi and Naiba) and Aldansky district (Khatystyr), where they carried out in-person interviews with community representatives. They also carried out telephone interviews with community members of settlements in the districts of Anabarsky (Saskylakh and Yurung-Khaya), Verkhnekolymsky (Zyryanka, Nelemnoe, Verkhnekolymsk), Momsky (Sasyr), Nizhnekolymsky (Chersky, Kolymskoe, Andriushokino).
- In Senegal, Amnesty International worked with a team of Senegalese and Gambian researchers. Between November and December 2021, the consultants visited several communities along the Langue de Barbarie down to Gadiol as well as communities of Guet Ndar, Ndar and Khar Yalla in the Saint-Louis peninsula. They carried out interviews with 10 community members from the area and held two focus groups with about 20 women in total.

All the quotes from the interviews have been anonymized to protect the identity of the interviewees, with the exception of specific cases where individuals provided consent for the use of their names.

Desk research included a variety of sources, such as Intergovernmental Panel on Climate Change (IPCC) reports, scientific and other academic studies, national climate change policies, NGO reports and media articles. These are cited in the text.

Amnesty International is immensely grateful to the organizations and individuals who took part in this project and all the persons who agreed to share their experiences with us.

2. BACKGROUND

“The overall effect of inadequate actions to reduce greenhouse gas emissions is creating a human rights catastrophe”

United Nations Special Rapporteur on the Promotion and Protection of Human Rights in the Context of Climate Change, 2022³

2.1 INADEQUATE GLOBAL CLIMATE ACTION

Recent reports by the IPCC could not be clearer: the window of opportunity to avoid even more catastrophic impacts from climate change is rapidly closing.⁴

Yet, greenhouse gas emissions continue to rise⁵ and states continue to approve new fossil fuel projects and are backtracking on fossil fuel phase out. These trends are worsening in the context of the Russian invasion of Ukraine and the spike in energy prices.⁶ Not a single wealthy industrialized country⁷ or other high-emitting country⁸ is reducing emissions fast enough to effectively protect people’s human rights.⁹ Overall, existing pledges will lead to an increase of global average temperature of 2.5°C by the end of the century or earlier,

3 UN Special Rapporteur on the promotion and protection of human rights in the context of climate change, Report on the promotion and protection of human rights in the context of climate change mitigation, loss and damage and participation, 22 July 2022, UN Doc. A/77/226, para. 7.

4 IPCC, *Climate Change 2021 – The Physical Science, Working Group II contribution to the Sixth Assessment Report, Summary for Policymakers*, August 2021, ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WG1_SPM.pdf; IPCC, *Climate Change 2022 – Climate Impacts, Adaptation and Vulnerability, Working Group II contribution to the Sixth Assessment Report, Summary for Policymakers*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf; IPCC, *Climate Change 2022 – Mitigation of Climate Change, Working Group III contribution to the Sixth Assessment Report, Summary for Policymakers*, April 2022, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf

5 World Meteorological Organization and others, *United in Science 2022: A Multi-Organization High-Level Compilation of the Most Recent Science Related to Climate Change, Impacts and Responses*, 2022, library.wmo.int/index.php?lvl=notice_display&id=22128#.Yy2UfXbMKUn

6 Climate Action Tracker, *Global reaction to energy crisis risks zero carbon transition- Analysis of government responses to Russia’s invasion of Ukraine*, June 2020, climateactiontracker.org/documents/1055/CAT_2022-06-08_Briefing_EnergyCrisisReaction.pdf

7 This document uses the term “wealthy industrialized countries” to refer to countries included in Annex 1 of the UN Framework Convention on Climate Change, unfccc.int/parties-observers

8 These are states which are part of the Group of 20 (G20), other than Canada, France, Germany, Italy, Japan, United Kingdom and United States of America which fall in the category of wealthy industrialized countries. Collectively, G20 members are responsible for 75 per cent of global GHG emissions. See United Nations Environment Programme, *Emissions Gap Report 2022*, October 2022, unep.org/resources/emissions-gap-report-2022, p. 7.

9 United Nations Environment Programme, *Emissions Gap Report 2022*, October 2022, unep.org/resources/emissions-gap-report-2022

which will be catastrophic for people around the world.¹⁰ Policies that are currently being implemented at the national level are inadequate to meet countries' pledges.¹¹

Wealthy countries are failing to meet their obligations under the Paris Agreement and human rights law to provide adequate finance and support to less wealthy countries to reduce their carbon emissions (climate change mitigation) and to adapt to the impacts of climate change. They have so far failed to meet their commitment to deliver USD 100 billion in climate finance annually from 2020 to 2025 to developing countries – an amount which, in any case, falls far below what is actually needed.¹² According to the most recent estimates from the OECD (Organisation for Economic Co-operation and Development), climate finance from developed countries amounted to USD 83.3 billion in 2020.¹³ Of these funds, 73% were in the form of loans as opposed to grants, which increases developing countries' debt and obligations to donors and reduces the resources available to fulfil human rights in the country. Moreover, climate finance provided and mobilized by developed countries largely focused on climate change mitigation measures in relatively high-emitting countries, while climate finance for adaptation in small, climate-vulnerable and low-income countries remained limited. While on the increase, climate finance for climate change adaptation projects remains limited compared to the global need and to the Paris Agreement's call for a balance between mitigation and adaptation finance flows.¹⁴

Despite their historical responsibility for the climate crisis, wealthy countries are also still largely refusing to meet their obligations to provide adequate financial support and remedy to people in developing countries whose rights have been negatively affected as a result of loss and damage caused by the climate crisis. At the 2021 UN climate conference (COP26), wealthy states opposed the creation of a financial facility to provide new and additional finance, separate from the funding committed for climate change mitigation and adaptation and beyond insurance, to support people in lower-income countries affected by loss and damage caused by the climate crisis.¹⁵ So far, only Denmark and two sub-national entities – Scotland and the Belgian region of Wallonia – have committed specific and additional funds for loss and damage in developing countries.¹⁶ Other mechanisms established during previous climate change negotiations, such as the Warsaw International Mechanism for Loss and Damage and the Santiago Network for Loss and Damage, have yet to translate to meaningful support to people most affected by the climate crisis.¹⁷

10 United Nations Framework Convention on Climate Change, *Climate Plans Remain Insufficient: More Ambitious Action Needed Now*, 26 October 2022, unfccc.int/news/climate-plans-remain-insufficient-more-ambitious-action-needed-now

11 World Meteorological Organization and others, *United in Science 2022: A Multi-Organization High-Level Compilation of the Most Recent Science Related to Climate Change, Impacts and Responses*, 2022, p. 17, library.wmo.int/index.php?l=notice_display&id=22128#_Y1fpXBmI2z

12 According to information compiled by the UNFCCC's (United Nations Framework Convention on Climate Change) Standing Committee on Finance, 78 of 153 Nationally Determined Contributions (NDCs) have costed needs, and these amount to USD 5.8–5.9 trillion up until 2030. Only 11% of the costed needs specify whether finance has to be domestic or international; of these USD 502 billion is identified as needs requiring international sources of finance. See UNFCCC Standing Committee on Finance, *First Report on the Determination of the Needs of Developing Country Parties Related to Implementing the Convention and the Paris Agreement*, 2021, para. 16, unfccc.int/topics/climate-finance/workstreams/needs-report These figures were as of 31 May 2021.

13 OECD, *Aggregate Trends of Climate Finance Provided and Mobilised by Developed Countries in 2013-2020*, 2022, oecd.org/climate-change/finance-usd-100-billion-goal/aggregate-trends-of-climate-finance-provided-and-mobilised-by-developed-countries-in-2013-2020.pdf

14 Leia Achampong, Eurodad, "Where do things stand on the global US\$100 billion climate finance goal?", Eurodad, 7 September 2022, eurodad.org/where_do_things_stand_on_the_global_100_billion_climate_finance_goal

15 Amnesty International, "COP26 outcome: 12 months to take action that delivers on human rights", 18 November 2021, amnesty.org/en/documents/ior40/4989/2021/en/

16 Climate Home News, "Denmark becomes first country to pledge 'loss and damage' finance", 20 September 2022, climateagenews.com/2022/09/20/denmark-first-country-pledge-loss-and-damage-finance/; Scottish Government, "Scotland to boost climate funding", 11 November 2021, gov.scot/news/scotland-to-boost-climate-funding/; The Brussels Times, "COP26: Wallonia earmarks one million euros for loss and damages", 14 November 2021, brusselstimes.com/news/193568/cop26-wallonia-earmarks-one-million-euros-for-loss-and-damages/

17 ESCR-Net, Human Rights and Climate Change Working Group and Loss and Damage Collaboration, *What does a human rights-based approach to addressing loss and damage look like? Key demands for the outcomes of COP 27 at the intersection of loss and damage and human rights*, 1 November 2022, <https://www.lossanddamagecollaboration.org/stories/what-does-a-human-rights-based-approach-to-addressing-loss-and-damage-look-like>

2.2 THE GLOBAL HUMAN RIGHTS IMPACTS OF CLIMATE CHANGE

Climate change has adverse impacts on the full range of human rights. This section provides a summary of the global impacts of the climate crisis on specific rights, particularly those that are described in the case studies included in this report.¹⁸

2.2.1 RIGHT TO LIFE

Between 2000 and 2019, more than 5 million people died annually because of unsafe temperature fluctuations¹⁹

Climate change threatens the right to life, particularly as the result of extreme weather events, heat extremes, floods, droughts, wildfires, waterborne and vector-borne diseases, malnutrition and air pollution. The UN Human Rights Committee stated that “environmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life”.²⁰

States have the obligation to respect and protect the right to life from reasonably foreseeable threats and life-threatening situations that can result in loss of life, including adverse climate change impacts.²¹

2.2.2 RIGHT TO HEALTH

Between 2000 and 2016, the number of people exposed to heat waves increased by around 125 million²²

Any increase in global temperature is expected to have an adverse effect on human health, with children most notably affected.²³ Furthermore, the current climate change trajectory would soon strain global health systems and cause a spiral into a situation of recurrent humanitarian crises. The main health impacts of climate change include greater risk of injury, disease and death due to more intense heat waves and fires; increased risk of under-nutrition resulting from diminished food production in poor regions and reduced labour productivity in at-risk populations; and increased risks of food- and waterborne and vector-borne diseases.

2.2.3 RIGHT TO ADEQUATE FOOD

In 2020, close to 16 million people across 15 countries were affected by food crises driven by weather extremes and natural hazards²⁴

Climate change threatens the right to food for millions of people, as it negatively interacts with all aspects of the right to food.²⁵ It affects food availability, as unpredictable and severe weather patterns reduce agricultural efficiency and alter crop, livestock, fisheries and aquaculture productivity, and ultimately leads to

18 For a more detailed analysis of the impacts on specific rights and specific groups of people see Amnesty International, *Stop Burning Our Rights! What Governments and Corporations Must Do To Protect Humanity From the Climate Crisis* (Index: POL 30/3476/2021), 7 June 2021, pp. 35-55, amnesty.org/en/documents/pol30/3476/2021/en/

19 Q. Zhao and others, “Global, regional and national burden of mortality associated with non-optimal ambient temperatures from 2000 to 2019: a three-stage modelling study”, July 2021, Lancet Planet Health, Volume 5, [thelancet.com/journals/lanplh/article/PIIS2542-5196\(21\)00081-4/fulltext#seccetitle70](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00081-4/fulltext#seccetitle70)

20 UN Human Rights Committee (HRC), General Comment 36: Right to life (Art 6), 3 September 2019, UN Doc. CCPR/C/GC/36, para. 62.

21 UN Human Rights Committee (HRC), General Comment 36: Right to life (Art 6), 3 September 2019, UN Doc. CCPR/C/GC/36, para. 62; and Views Adopted by the Committee Under Article 5 of the Optional Protocol, concerning Communication Number 3624/2019, 22 September 2022, UN Doc. CCPR/C/135/D/3624/2019, para. 8.3.

22 World Health Organization, *Heat and Health Factsheet*, 2018, [who.int/news-room/fact-sheets/detail/climate-change-heat-and-health](https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health)

23 IPCC, *Special Report on Global Warming of 1.5°C, Summary for Policymakers*, 2018, ipcc.ch/sr15/chapter/spm/, p. 11.

24 World Food Programme, *HungerMap LIVE: Global insights and key trends*, 2022, static.hungermapdata.org/insight-reports/2022-09-23/global-climate.pdf

25 In its General Comment 12 (1999) on the right to adequate food, the UN Committee on Economic, Social and Cultural Rights defined the necessary elements required for the right to food (that is, the possibility either to feed oneself directly from productive land or other natural resources or to purchase food) as availability, accessibility and adequacy. See UN Doc. E/C.12/1999/5.

a significant loss in terrestrial and marine biodiversity.²⁶ Increasing levels of carbon dioxide also reduce the nutritional values of staple crops such as rice and wheat.²⁷

2.2.4 RIGHT TO WATER AND SANITATION

By 2040, one in four children will live in areas with extremely limited water resources²⁸

Climate change affects all key elements of the right to water: availability, accessibility, acceptability and quality.²⁹ This is particularly as a result of sea-level rise and associated salinization, melting snow and ice, uneven rainfall patterns and rising temperatures.³⁰ Also, access to sanitation infrastructure can be severely undermined by climate impacts, for example as tropical storms and intense flooding pollute and destroy infrastructure.

2.2.5 RIGHT TO ADEQUATE HOUSING

22.3 million people were internally displaced due to weather-related events in 2021 alone³¹

Flooding and landslides caused by heavy rainfall, storm surges and sea-level rise can destroy or severely damage houses, especially precarious, informal and inadequate dwellings.³² The right to adequate housing is also undermined when people are forced to leave their homes when climate related impacts such as drought, salinification, and soil erosion erode their livelihoods and lead to water or food insecurity.

2.2.6 RIGHTS TO WORK AND TO AN ADEQUATE STANDARD OF LIVING

Between 2000 and 2015, 23 million working-life years were lost annually as a result of “different environmentally-related hazards caused or enhanced by human activity”³³

Climate change impedes the rights to work and to an adequate standard of living, especially for people whose livelihoods are closely linked to their local ecosystems, such as Indigenous peoples, small-scale farmers practicing rain-fed agriculture, seasonal workers in agriculture, fisherfolk, pastoralists and people employed in the tourist industry.

2.2.7 RIGHT TO CULTURE

“Some mental health challenges are associated with increasing temperatures, trauma from weather and climate extreme events, and loss of livelihoods and culture”³⁴

Climate change is causing both irreversible and reversible destruction to cultural heritage around the world. The loss of and damage to ecosystems such as the Arctic, boreal forest, tropical and mountain forests, and

26 UN Special Rapporteur on the Right to Food, Interim report of the Special Rapporteur on the right to food: 15 August 2015, UN Doc. A/70/287, paras 7-11.

27 M. R. Smith and S. S. Myers, “Impact of anthropogenic CO2 emissions on global human nutrition”, September 2018, Nature Climate Change, Volume 8, nature.com/articles/s41558-018-0253-3

28 UNICEF, Nearly 600 million children will live in areas with extremely limited water resources by 2040, Press Release <https://www.unicef.org/press-releases/nearly-600-million-children-will-live-areas-extremely-limited-water-resources-2040>

29 OHCHR, *Climate Change and the Human Rights to Water and Sanitation*, Position Paper, www.ohchr.org/Documents/Issues/Water/Climate_Change_Right_Water_Sanitation.pdf; UN Special Rapporteur on the rights to water and sanitation, Special thematic report on climate change and the human rights to water and sanitation, 28 January 2022, ohchr.org/en/documents/thematic-reports/special-thematic-report-climate-change-and-human-rights-water-and

30 IPCC, *Climate Change 2022 – Climate Impacts, Adaptation and Vulnerability, Working Group II contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Summary for Policymakers*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf, para B.4.2.

31 Internal Displacement Monitoring Centre, Global Report on Internal Displacement 2022, May 2022, internal-displacement.org/publications/2022-global-report-on-internal-displacement

32 UN Special Rapporteur on the right to adequate housing, Report, 6 August 2019, UN Doc. A/64/255; UN Special Rapporteur on extreme poverty and human rights, Report on climate change and poverty, 25 June 2019, UN Doc. A/HRC/41/39; J-B. N. Olivotto and others, “Housing and informal settlements”, in C. Rosenzweig and others (editors.), *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*, 2018, pages 399–440.

33 International Labour Organization, *The Future of Work in a Changing Natural Environment: Climate Change, Degradation, and Sustainability*, 2018, ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_644145.pdf

34 IPCC, *Climate Change 2022 – Climate Impacts, Adaptation and Vulnerability, Working Group II Contribution to the Sixth Assessment Report*, February 2022, https://ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FullReport.pdf, para B.1.4.

semi-arid pastoralist areas impact incalculably on the cultures of the peoples who live there. This results from changes to and even complete destruction of livelihoods, which form an intrinsic part of culture, and loss of way of life and access to cultural heritage such as medicinal herbs and sites of cultural rites and ceremonies.

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) enshrines the inalienable right of Indigenous peoples to enjoy the territories and natural resources that are essential for their subsistence and cultural identity.

2.3 STATES' HUMAN RIGHTS OBLIGATIONS IN RELATION TO CLIMATE CHANGE

All states have obligations under international human rights law to respect, protect and fulfil all human rights for all persons without discrimination pursuant to the various international and regional human rights treaties they have joined.³⁵ This obligation includes protecting the enjoyment of human rights from environmental harm caused by conduct or omissions within their territory or jurisdiction, whether committed by state or non-state actors, including business. The current and foreseeable adverse effects of climate change on the enjoyment of human rights of present and future generations therefore give rise to states' duties to take all reasonable steps to the full extent of their abilities to prevent this harm.³⁶

Respecting, protecting and fulfilling human rights in the face of the climate crisis means that all states have the following key duties:³⁷

- to take all feasible steps to the full extent of their abilities to reduce greenhouse gas emissions within the shortest possible time-frame, both nationally and through international cooperation;
- to adopt all necessary measures to assist those within their jurisdiction to adapt to the foreseeable and unavoidable effects of climate change, thus minimizing the impact of climate change on their human rights;
- to ensure that all policies and measures aimed at addressing the climate crisis respect, protect and fulfil human rights, including the right to information, participation and remedy;
- to ensure effective remedies to all those whose rights have been violated as a result of loss and damage caused by the climate crisis;
- to regulate businesses to ensure they reduce emissions in a manner compatible with scientific evidence and they respect human rights throughout their supply chains.

States also have extra-territorial obligations. These are defined as human rights obligations relating to the conduct of a state within or beyond its territory that have effects on the enjoyment of human rights outside of that state's territory, as well as obligations of a global character to realize human rights universally, including through international cooperation.³⁸

35 Office of the High Commissioner for Human Rights (OHCHR), "Status of ratification interactive dashboard", 2022, indicators.ohchr.org/

36 UN Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment, Report, 1 February 2016, UN Doc. A/HRC/31/52, para. 33; OHCHR, "Five UN human rights treaty bodies issue a joint statement on human rights and climate change", 16 September 2019, ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=24998&LangID=E; UN Human Rights Committee, Views Adopted by the Committee Under Article 5 of the Optional Protocol, concerning Communication Number 3624/2019, 22 September 2022, UN Doc. CCPR/C/135/D/3624/2019, para 8.3.

37 For a more detailed analysis of states' human rights obligations in relation to climate change, see Amnesty International, *Stop Burning Our Rights! What Governments and Corporations Must Do To Protect Humanity From the Climate Crisis* (Index: POL 30/3476/2021), 7 June 2021, pp. 35-55, amnesty.org/en/documents/pol30/3476/2021/en/

38 Principle 8, Maastricht Principles on Extraterritorial Obligations of States in the Area of Economic, Social and Cultural Rights. The Maastricht Principles were elaborated through an extensive process over several years and adopted by 40 international legal experts from around the world, including members of international human rights treaty bodies, regional human rights bodies, as well as Special Rapporteurs of the UN Human Rights Council. The Maastricht Principles did not create new law, but rather drew from existing laws and standards with a view to clarifying states' obligations in relation to their extraterritorial conduct. The Principles, and their commentary that sets out the legal authority for each principle, were published in LSE Library Services, Olivier De Schutter and others, "Commentary to the Maastricht Principles on Extraterritorial Obligations of States in the Area of Economic, Social and Cultural Rights", Human Rights Quarterly, Volume 34, September 2015, eprints.lse.ac.uk/47404/

Under environmental and human rights law, wealthier states have the obligation to reduce emissions faster than others.³⁹

States that have a greater responsibility for the climate crisis – due to their higher than average per capita current and past emissions – are jointly responsible for ensuring remedies to affected people based on the extent of their contribution to this harm. Wealthier states are also responsible for providing sufficient financing and support to developing countries to tackle the climate crisis through climate change mitigation and adaptation measures.

When states fail to take affirmative measures to prevent human rights harms caused by climate change, including foreseeable long-term harms, they are in breach of their obligations under human rights law.⁴⁰

39 The UNFCCC and the Paris Agreement recognize the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC), that acknowledges the different capabilities and differing responsibilities of individual countries in addressing climate change. Article 4.4 of the Paris Agreement states that “developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets”. Under human rights law implicitly, responsibilities are differentiated in that states in a position to do so are required to provide international assistance where required for the realization of human rights (Article 2(1) of the International Covenant on Economic, Social and Cultural Rights).

40 OHCHR, “Key messages on human rights and climate change”, ohchr.org/Documents/Issues/ClimateChange/KeyMessages_on_HR_CC.pdf

3. MARGINALIZED COMMUNITIES IN COASTAL SOUTH-WESTERN BANGLADESH

3.1 POVERTY AND MARGINALIZATION

Most of the population of coastal south-western Bangladesh is at high risk from the effects of climate change. Reasons for this vulnerability include living in low-lying, exposed areas; having livelihoods that are dependent on natural resources; and household poverty. Some people face additional challenges due to deep-rooted discrimination based on ethnicity, religion or caste, for example Dalits and the Indigenous Munda people.

This study is based on interviews in five communities in Satkhira and Khulna districts, which border the Sundarbans, one of the world's largest coastal mangrove forests.⁴¹ Sources of income for much of the population there are subsistence fishing, shrimp farming and agriculture. Some of the individuals interviewed identified as Dalit or Munda or as otherwise marginalized due to their profession, ethnicity or other characteristics. They did not necessarily link their identity to their experiences of climate change in their responses to the interview questions.

The Dalits of Bangladesh are a marginalized group whose identity is typically characterized as so-called "low caste" because of their birth status and current and ancestral occupations, which were considered to be unclean and impure. At present, Dalits are often employed as "sweepers" doing work such as cleaning latrines and removing rubbish. They are designated as "untouchable" within the Hindu caste system of the Indian subcontinent.⁴² There are approximately 6.5 million Dalits in Bangladesh.⁴³ Most live in poverty and have limited access to education, healthcare, secure and safe housing, sanitation or decent work due to social exclusion, stigma and limited opportunities.⁴⁴

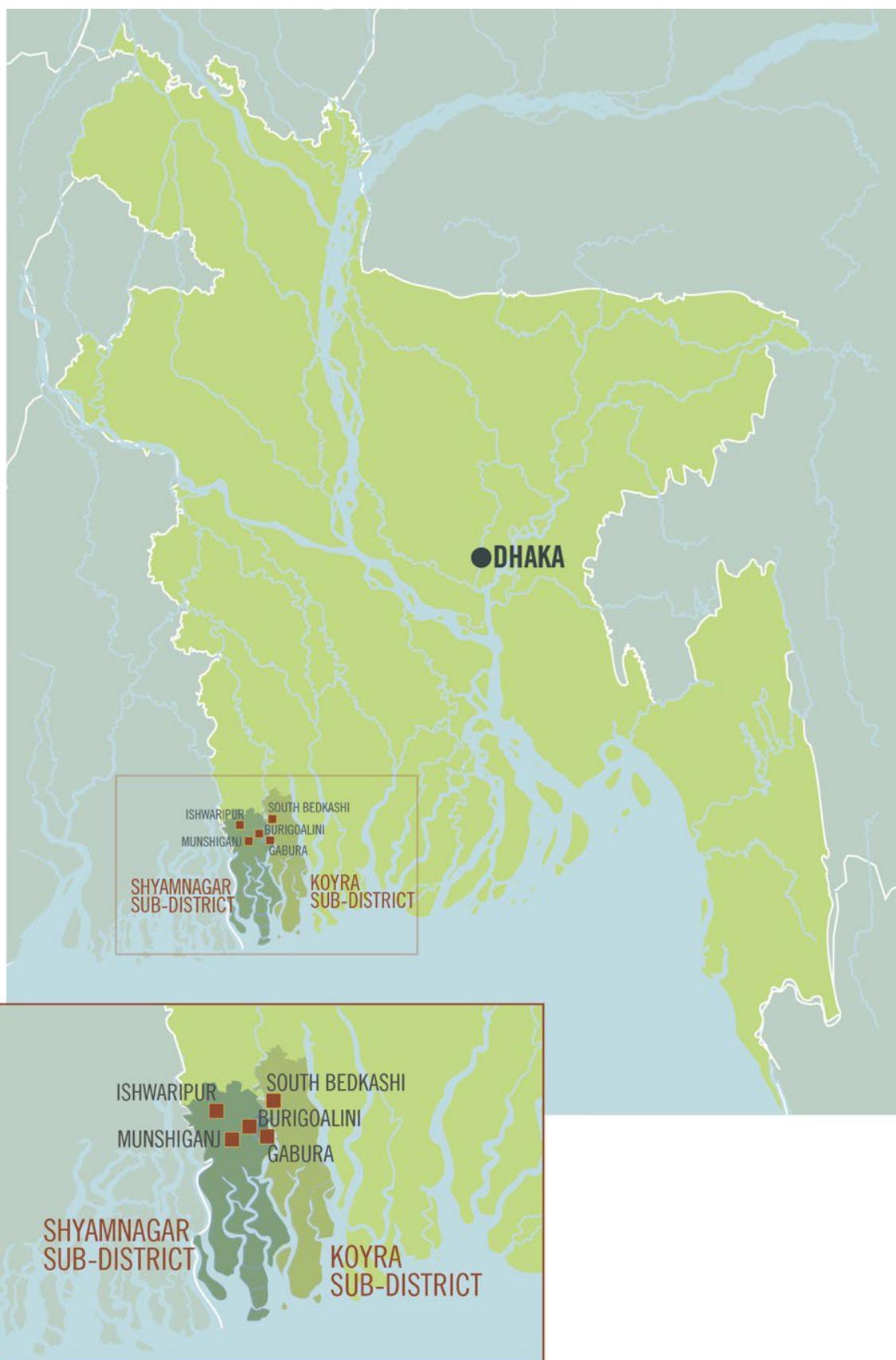
41 UNESCO, "The Sundarbans", accessed on 30 October 2022, whc.unesco.org/en/list/798/

42 A. Kabir and others, "Qualitative exploration of sociocultural determinants of health inequities of Dalit population in Dhaka City, Bangladesh", December 2018, BMJ Open, Volume 8, Issue 12, pubmed.ncbi.nlm.nih.gov/30552259/

43 International Dalit Solidarity Network, Bangladesh, idsn.org/countries/bangladesh/

44 Naganik Uddyog and Bangladesh Dalit and Excluded Rights Movement, *Dalit Initiatives in Bangladesh*, 2013, idsn.org/wp-content/uploads/2015/01/Dalit-Initiatives-in-Bangladesh.pdf; OHCHR, *Report of the Working Group on the Universal Periodic Review – Bangladesh*, 11 July 2018, UN Doc. A/HRC/39/12; OHCHR, *Summary of Stakeholders' Submissions on Bangladesh*, 13 March 2018, UN Doc. A/HRC/WG.6/30/BGD/3; A. Kabir and others, "Qualitative exploration of sociocultural determinants of health inequities of Dalit population in Dhaka City, Bangladesh", December 2018, BMJ Open, Volume 8, Issue 12, pubmed.ncbi.nlm.nih.gov/30552259/

BANGLADESH



ANY TIDAL WAVE COULD DROWN US
STORIES FROM THE CLIMATE CRISIS

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Systemic and intergenerational discrimination puts Dalits at heightened risk of climate change associated harm. Dalits are generally excluded and forced to live away from dominant caste members in their villages, in precarious houses in undesirable and hazardous areas with poor essential services.⁴⁵ Being confined to certain stigmatized occupations, they struggle to find income-earning activities following disasters, are unable to access safety nets and are more likely to be pushed into debt.⁴⁶

The Munda are an Indigenous people that has lived in the Sundarbans in south-western Bangladesh for more than two centuries.⁴⁷ The Sundarban forest plays a crucial cultural and spiritual role in the life of Mundas, as well as for their livelihoods.⁴⁸ Traditionally, the Munda have been socially discriminated against and marginalized.⁴⁹ A Munda woman interviewed for this report described discrimination in her community, such as being forced to sit at the back of the room on the floor during public meetings. The director of Sundarbans Indigenous Munda Sangsta (SAMS), a local non-governmental organisation defending the rights of Munda people, explained:

"When the Mundas first came to Satkhira, they had ownership of the land that they cultivated. A traditional Munda family had up to 100 acres of land. They have since been cheated out of the land on excuses of not being able to pay taxes. They were told that an acre is equal to a bigha [local land denominator], whereas an acre is almost three bigha. Almost all the Munda farmer[s] are now landless. We, the descendants, now live in government property."

Krishnapada Munda, executive director, SAMS, Shyamnagar, Satkhira.⁵⁰

Other human rights groups and the UN Special Rapporteur on human rights and climate change have documented hostility and discrimination towards Munda people in cyclone shelters, where they were allocated older or smaller shelters where Munda women were unable to maintain personal hygiene.⁵¹

Nevertheless, Bangladeshi climate policy documents reviewed for this study do not specifically mention Dalits, Indigenous peoples and other minority groups among the most vulnerable to climate change.⁵² Although Bangladesh is a party to International Labour Organization Convention 107 on Indigenous and Tribal Populations, it has in recent years attempted to eliminate the concept of Indigenous peoples' rights from public discourse, for example through directives to media organizations.⁵³

Irrespective of whether or not they identify as Dalit or Munda, much of the population in south-west Bangladesh is poor. According to the most recent national data, the percentage of the population living below the poverty line and in extreme poverty are both higher in the south-west than in Bangladesh as a whole.⁵⁴ Moreover, as a coastal area, the south-west is especially vulnerable to sea level rise.

45 Nagorik Uddyog & Bangladesh Dalit and Excluded Rights Movement, *Dalit Initiatives in Bangladesh*, 2013, idsn.org/wp-content/uploads/2015/01/Dalit-Initiatives-in-Bangladesh.pdf; A. Kabir and others, "Qualitative exploration of sociocultural determinants of health inequities of Dalit population in Dhaka City, Bangladesh", December 2018, BMJ Open, Volume 8, Issue 12, pubmed.ncbi.nlm.nih.gov/30552259/

46 Bond, *Caste and Development*, 2019, bond.org.uk/wp-content/uploads/2022/03/bond_caste_reportscreen.pdf

47 A. R. Islam and others, "Ethnobotanical study of plants used by the Munda ethnic group living around the Sundarbans, the world's largest mangrove forest in southwestern Bangladesh", 2022, Journal of Ethnopharmacology, Volume 285, pubmed.ncbi.nlm.nih.gov/34822959/

48 A. R. Islam and others, "Ethnobotanical study of plants used by the Munda ethnic group living around the Sundarbans, the world's largest mangrove forest in southwestern Bangladesh. Journal of Ethnopharmacology", 2022, Volume 285, pubmed.ncbi.nlm.nih.gov/34822959/; S. Roy, "Livelihood Resilience of the Indigenous Munda Community in the Bangladesh Sundarbans Forest", in W. Leal Filho (editor), *Handbook of Climate Change Resilience*, 2003, Springer, <https://link.springer.com/referencework/10.1007/978-3-319-93336-8>

49 S. Sharmin, "Politics of development and articulation of indigenous identity: the formation of Munda identity in Barind, Bangladesh", 2013, IJAPS, Volume 9, Issue 1, <http://eprints.usm.my/40653/1/Art6-Sharmin.pdf>

50 All interviews for this case study were conducted by the Bangladeshi NGO Nagorik Uddyog on behalf of Amnesty International between September 2021 and January 2022. See Methodology in Chapter 1.

51 Initiative for Rights, *An Initiative to Understand the Situation of Indigenous Munda Community Facing in the Context of the COVID-19 Pandemic*, 2021, thesouthasiacollective.org/wp-content/uploads/2021/02/IRV-An-initiative-to-understand-the-situation-of-the-Indigenous-Munda-community-in-the-context-of-the-COVID-19-pandemic.pdf; UN Special Rapporteur for the Promotion and Protection of Human Rights in the Context of Climate Change, *Statement at the Conclusion of the Country Visit to Bangladesh*, 15 September 2022, ohchr.org/sites/default/files/documents/issues/climatechange/2022-09-14/SR-ClimateChange-EOM-Statement-Bangladesh-20220915.pdf

52 Government of the People's Republic of Bangladesh, "Bangladesh Climate Change Strategy and Action Plan", 2009, policy.asiacapricenergy.org/sites/default/files/Bangladesh%20Climate%20Change%20Strategy%20and%20Action%20Plan%202009.pdf; "National Adaptation Plan of Action", 2009, unfccc.int/sites/NAPC/Country%20Documents/Parties/ban02.pdf; "Third National Communication to the United Nations Framework Convention on Climate Change", June 2018, unfccc.int/sites/default/files/resource/TNC%20Report%20%28Low%20Resolution%29%202003_01_2019.pdf; "Nationally Determined Contribution 2021", unfccc.int/sites/default/files/NDC/2022-06/NDC_submission_20210826revised.pdf.

53 A. Drong, "Bangladesh Adivasi Forum: Promoting Indigenous Peoples Rights in Bangladesh", 25 October 2021, raoen.org/2021/10/25/bangladesh-adivasi-forum-promoting-indigenous-peoples-rights-in-bangladesh/ However, note that in international law, the status of Indigenous peoples does not depend on government's recognition.

54 The World Bank, *Bangladesh Interactive Poverty Maps*, 10 November 2016, worldbank.org/en/data/interactive/2016/11/10/bangladesh-poverty-maps



General view of fishing community in Shyamnagar, Satkhira, Bangladesh, September 2021. © Farhan Hossain/Amnesty International

3.2 CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION

Sea-level rise drives saltwater intrusion into waterways and agricultural areas. Saltwater intrusion is a particular threat to agriculture in the south-west region,⁵⁵ and is worsened by inappropriately managed shrimp farming, which requires saltwater.⁵⁶ Community members call this phenomenon *Notun Durjog* – the “New Disaster”.

The Sundarbans coastline is retreating by up to 200m per year, threatening the future of this ecosystem.⁵⁷ As well as the loss of livelihoods and biodiversity, the destruction of the Sundarbans leaves inland areas more susceptible to cyclones and the devastating storm surges that they cause.⁵⁸

Some of the communities visited for this study have experienced successive, severe cyclones.

“During [Cyclone] Aila [in 2009], we were at a nearby village where my in-laws live... When we came back, we saw that there was nothing remaining.”

Resident of South Bedkashi, Koyra.

⁵⁵ S. Dasgupta and others, “River salinity and climate change. Evidence from coastal Bangladesh”, The World Bank, Policy Research Working Paper, 2014, documents.worldbank.org/en/publication/documents-reports/documentdetail/522091468209055387/river-salinity-and-climate-change-evidence-from-coastal-bangladesh

⁵⁶ M. S. Hossain and others, “Impacts of shrimp farming on the coastal environment of Bangladesh and approach for management”, 19 March 2013, Reviews in Environmental Science and Bio/Technology, Volume 12, link.springer.com/article/10.1007/s11157-013-9311-5

⁵⁷ Zoological Society of London (ZSL), *Bengali Forests Are Fading Away*, 11 January 2013, zsl.org/conservation/news/bengali-forests-are-fading-away#:~:text=Mangrove%20forests%20of%20the%20Sundarbans,disappearing%20in%20a%20single%20year.

⁵⁸ The Climate Reality Project, *How the Climate Crisis Is Impacting Bangladesh*, 9 December 2021, climaterealityproject.org/blog/how-climate-crisis-impacting-bangladesh

Besides storm surges linked to tropical cyclones, the area experiences frequent floods during monsoon seasons.⁵⁹ Bangladesh also suffers from regular droughts,⁶⁰ particularly in north-western regions but increasingly in the south-west coastal region too.⁶¹ Climate change contributes to the increased intensity of these phenomena.⁶²

“The drought has been unbearable this year. There was no rain for two to three months in [the] summer of 2021, if this is going to continue we cannot live here anymore.”

Resident of Burigolani, Shyamnagar.

3.3 LIVELIHOOD STRESS, DESTRUCTION OF HOMES AND REDUCED STANDARD OF LIVING

People’s livelihoods in this region mostly depend on subsistence fishing, shrimp farming or agriculture. Their ability to maintain an adequate standard of living can be seriously affected by cyclones, flooding, salt-water intrusion and drought. The potentially disastrous human rights impacts of climate change in Bangladesh were acknowledged by the UN Special Rapporteur on human rights and climate change, following his September 2022 visit to Bangladesh.⁶³

As described by an interviewee:

“In the [2021] monsoon, we lost everything in the flood. Both our homes and crops were destroyed.”

Resident of Ishwaripur, Shyamnagar.

Cyclones destroy crops and damage fisheries. In 2009, Cyclone Aila devastated 350,000 acres of cropland⁶⁴ and left stagnant salt water across the land for three years. Crops became difficult to grow and fish cultivated in fish farms died.⁶⁵ Shrimp farmers are experiencing low production as high temperatures and high rainfall events lower shrimps’ growth rate and increase susceptibility to diseases.⁶⁶ Small-scale fisherfolk report a reduction in the fish catch, and yields are projected to decrease further as a consequence of water salinization driven in part by sea-level rise.⁶⁷

A young fisherman from the Shyamnagar sub-district explained that the number of fish in the accessible Sundarbans has decreased significantly.

As a coping mechanism, community members reported borrowing money from private lenders, often at extortionate interest rates, to survive after a disaster.

59 The IPCC stated that rising temperature increases the likelihood of floods in monsoon regions in South Asia. IPCC, *Climate Change 2022 - Climate Impacts, Adaptation and Vulnerability, Working Group II Contribution to the Sixth Assessment Report: Chapter 10 – Asia*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf, p. 1463.

60 Government of the People’s Republic of Bangladesh - Ministry of Environment, Forest and Climate Change, “Third National communication to the United Nations Framework Convention on Climate Change”, June 2018, unfccc.int/sites/default/files/resource/TNC%20Report%20%28Low%20Resolution%29%202003_01_2019.pdf, p. 34.

61 B Sheikh and others, “Drought assessment in the coastal region of Bangladesh using grid data”, *6th International Conference on Engineering Research, Innovation and Education School of Applied sciences & Technology*, February 2021, SUST, Sylhet, researchgate.net/publication/350327177_Drought_assessment_in_the_coastal_region_of_Bangladesh_using_grid_data

62 United States Institute of Peace, *How Climate Change Deepens Bangladesh’s Fragility*, 13 September 2021, usip.org/publications/2021/09/how-climate-change-deepens-bangladesh-fragility Scientific American, “Adapting to climate change lessons from Bangladesh”, 1 March 2021, [scientificamerican.com/article/adapting-to-climate-change-lessons-from-bangladesh/](https://www.scientificamerican.com/article/adapting-to-climate-change-lessons-from-bangladesh/)

63 UN Special Rapporteur for the Promotion and Protection of Human Rights in the Context of Climate Change, *Statement at the Conclusion of the Country Visit to Bangladesh*, 15 September 2022, ohchr.org/sites/default/files/documents/issues/climatechange/2022-09-14/SR-ClimateChange-EOM-Statement-Bangladesh-20220915.pdf

64 R. Subhani and others, “Impact of Cyclone Yaas 2021 aggravated by COVID-19 pandemic in the southwest coastal zone of Bangladesh”, 1 December 2021, Sustainability, Volume 13, Issue 23, mdpi.com/2071-1050/13/23/13324

65 M. Moniruzzaman and others, “Environmental migrants in Bangladesh: A case study on climatic change hazards in the southwestern coastal area”, in Nazrul Islam and André van Arnstel (editors), *Bangladesh I: Climate Change Impacts, Mitigation, and Adaptation in Developing Countries*, 2018, link.springer.com/chapter/10.1007/978-3-319-26357-1_4

66 IPCC, *Climate Change 2022 - Climate Impacts, Adaptation and Vulnerability, Working Group II Contribution to the Sixth Assessment Report: Chapter 10 – Asia*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf, p. 1491.

67 IPCC, *Climate Change 2022 - Climate Impacts, Adaptation and Vulnerability, Working Group II Contribution to the Sixth Assessment Report: Chapter 10 – Asia*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf, p. 1491.

“During floods, we are stuck at our homes for three to four weeks. We have to borrow, at times at as high as 20-30% interest rate to feed our children.”

Member of the fisherfolk community of Munshiganj.

Economically insecure families may be vulnerable to exploitative schemes. For example, one study documented how children living in the Sundarbans are lured into forced labour in fish- and shrimp-farming and processing through false promises of adequately paid work to help their families pay off debts.⁶⁸

Cyclones and floods have also had devastating impacts on the right to adequate housing for people in south-western coastal areas.

“Our homes got destroyed each year during [Cyclones] Aila, Sidr and Amphan.”

Lower caste Hindu woman, Koyra, Khulna district.

Much of the wider area of South Bedkashi union – one of the areas visited for this case study – was subject to regular inundations for almost three years following Cyclone Aila in May 2009, due to breaches in a nearby protective embankment that had been damaged.⁶⁹ According to a local health worker, this resulted in diseases and infections. Relief workers struggled to reach remote areas cut off by the water. Only when the embankment was repaired in March 2012 did the flow of water into the inundated villages stop. During that time, families lived either on the embankments themselves, elsewhere in makeshift houses, or in the ruins of their flooded homes.

“We lived in a floating home for three years.”

Resident of Dakshin (South) Bedkashi.

Even though the establishment of cyclone shelters has saved many lives during the past two decades,⁷⁰ spending prolonged periods of time in such shelters can be stressful. For example, women, particularly pregnant women and lactating mothers, noted a lack of separate washrooms and privacy. As a result, some women interviewed were reluctant to return to shelters in the event of future disasters.⁷¹

3.4 WATER AND SANITATION

Cyclones and flooding cause considerable contamination and damage to water and sanitation infrastructure.

“The toilets get flooded by water. During monsoons, the feces often float on the toilets, making them almost unusable.”

Resident of Banshipur, Shyamnagar.

“We have heavy salinization in our area. During the monsoon season, the drinkable water resources get overflowed by the saline sea water. The influential people⁷² of the area control the flow of water.”

Resident of Banshipur, Satkhira district.

Interviewees explained how they try to secure clean water for drinking but are often forced to bathe, wash clothes and clean dishes with salt water.

⁶⁸ D. Brown and others, “Modern slavery, environmental degradation and climate change: Fisheries, field, forests and factories”, Environment and Planning E: Nature and Space, 2021; Volume 4, Issue 2, journals.sagepub.com/doi/full/10.1177/2514848619887156

⁶⁹ S. K. Saha and others, “Cyclone Aila and post disaster housing assistance in Bangladesh”, 2021, Sustainability, 13(15), [mdpi.com/2071-1050/13/15/8604](https://doi.org/10.3390/sus13158604)

⁷⁰ School buildings, official buildings or designated structures are used as cyclone shelters and people are invited to evacuate there by volunteers announcing the forecast and the level of threat by microphones. The number of shelters was increased and the early-warning system improved after the 1991 cyclone Gorky.

⁷¹ T. J. Chowdhury and others, “Lived-experience of women’s well-being in the cyclone shelters of coastal Bangladesh, prehospital disaster medicine”, August 2022, Prehosp Disaster Med, Volume 37, Issue 4, pubmed.ncbi.nlm.nih.gov/35477492/

⁷² “Influential people” likely refers to members of the ruling political party, and wealthier members of the village.



The scarcity of fresh water reserves nearby mean the storage of water is essential for residents. Satkhira, Bangladesh, September 2021. © Farhan Hossain/Amnesty International

“The children here have several skin diseases like rashes and lumps. This is mainly due to the salinization in the water that we bathe in.”

Resident of Bagbidhoba, Gabura union.

Drinking water contaminated with salt also increases the risk of contracting waterborne diseases, such as diarrhoea and dysentery, which affect children in particular,⁷³ as well as raised blood pressure and associated illnesses.⁷⁴ A health worker in Dacope, Khulna district, mentioned that women suffer with vaginal yeast infections from a combination of salt-contaminated water and unhealthy living conditions. Pregnant women who drink highly saline water are at increased risk of certain complications,⁷⁵ and their newborn babies are at higher risk of infant mortality.⁷⁶ The health consequences of water salinization represents an additional health burden for rural people who already suffer from limited availability of healthcare services. The cost and difficulty of travelling to receive healthcare makes people reluctant to seek medical attention.

Caste-based discrimination associated with notions of impurity and untouchability can further reduce access to water, particularly during periods when water is scarce.

73 A. Paul and A. Jabed, “Salinity has made our life terrible: A qualitative investigation of human sufferings in the Chittagong coast”, 2017, Oriental Geographer, Volume 59, Number 1 & 2, https://www.researchgate.net/publication/333149544_Salinity_has_made_our_life_terrible_A_qualitative_investigation_of_human_sufferings_in_the_Chittagong_coast

74 P. F. D. Scheelbeek and others, “Drinking water salinity and raised blood pressure: Evidence from a cohort study in coastal Bangladesh”, 30 May 2017, Environ Health Perspect, Volume 125, Issue 5, pubmed.ncbi.nlm.nih.gov/28599268/; M. R. Talukder and others, “Drinking water salinity and risk of hypertension: A systematic review and meta-analysis”, 4 May 2017, Arch. Environ Occup Health, Volume 72, Issue 3, pubmed.ncbi.nlm.nih.gov/27064986/

75 P. F. D. Scheelbeek and others, “Drinking water salinity and raised blood pressure: Evidence from a cohort study in coastal Bangladesh”, 30 May 2017, Environ Health Perspect, Volume 125, Issue 5, pubmed.ncbi.nlm.nih.gov/28599268/; A. E. Khan and others, “Salinity in drinking water and the risk of (pre)eclampsia and gestational hypertension in coastal Bangladesh: A case control study”, 30 September 2014, PLoS ONE Volume 9, Issue 9 journals.plos.org/plosone/article?id=10.1371/journal.pone.0108715; A. E. Khan and others, “Climate change, sea-level rise, and health impacts in Bangladesh”, 2011, Environ Sci Policy Sustain Dev, Volume 53, Issue 5, tandfonline.com/doi/abs/10.1080/00139157.2011.604008?journalCode=env20

76 S. Dasgupta and others, “Drinking water salinity and infant mortality in coastal Bangladesh, World Bank, Policy Research Working Paper, 2015, elibrary.worldbank.org/doi/abs/10.1596/1813-9450-7200

“When we are at the wells to bring water, if by accident we touch some people, they throw the water away. They say, ‘We don’t drink water touched by Shakha’ [a bangle traditionally worn by Hindu married women, in this case likely identifying the wearer as a Dalit]”

Hindu Dalit woman, Ishwaripur, Satkhira.

3.5 FORCED DISPLACEMENT AND MIGRATION

The destruction of homes and loss of livelihoods in successive natural disasters has forced some residents to relocate away from their ancestral villages to other locations within Bangladesh. The impacts of shrimp farming have also caused internal displacement.⁷⁷

“We used to live in Kolbari... In 2009-10, when [Cyclone] Aila happened, our homes were destroyed. We had to shift here, in Burigoalini. We have been living here ever since.”

Displaced woman.

In some cases, rather than the entire family relocating, men migrate to other villages or cities in Bangladesh or India temporarily in order to earn money to support their families.⁷⁸ In the absence of their husbands, women may take on additional roles. Women who take on roles traditionally considered not feminine, or who undertake certain chores without male accompaniment, find themselves discriminated against, harassed or the subject of gossip.

“When the men of the village are away, we cannot go to the market. It is extremely uncomfortable, as at times there are inappropriate gestures by the villagers. People talk when they see us with men.”

Resident of Gabura, Shyamnagar.

In addition, men, women and children who migrate within Bangladesh or across the border into India are vulnerable to human trafficking, sexual exploitation and bonded labour.⁷⁹ The IPCC warns that flooding from sea-level rise alone could displace up to 2.1 million people from southern Bangladesh by 2050.⁸⁰

3.6 COMMUNITIES’ DEMANDS

Due to its geography and climate vulnerability, Bangladesh has been obliged to confront the reality of climate change much earlier than other countries. For example, it was one of the first countries to prepare and submit its National Adaptation Programmes of Action to the UNFCCC Secretariat in 2005.⁸¹ In 2009, it adopted a comprehensive Climate Change Strategy and Action Plan⁸² and in 2010 it established a Climate Change Trust Fund to finance projects that would implement the strategy.⁸³ It has also established frameworks and mechanisms to reduce risks from natural disasters.⁸⁴

⁷⁷ M. Moniruzzaman and others, “Environmental migrants in Bangladesh: A case study on climatic change hazards in the southwestern coastal area”, in Nazrul Islam and André van Amstel (editors), *Bangladesh I: Climate Change Impacts, Mitigation, and Adaptation in Developing Countries*, 2018, link.springer.com/chapter/10.1007/978-3-319-26357-1_4; K. Paprocki, “All that is solid melts into the bay: Anticipatory ruination and climate change adaptation”, January 2019, *Antipode*, Volume 51, Issue 1, onlinelibrary.wiley.com/doi/10.1111/anti.12421

⁷⁸ Anti-Slavery International and International Institute for Environment and Development, *Climate-induced Migration and Modern Slavery: A Toolkit for Policymakers*, 2021, iied.org/sites/default/files/pdfs/2021-09/20441G.pdf; S. Bose, “Sea-level rise and population displacement in Bangladesh: Impact on India”, 23 December 2013, *Marit Aff*, Volume 9, Issue 2, tandfonline.com/doi/abs/10.1080/09733159.2013.848616?journalCode=rnmf20

⁷⁹ Anti-Slavery International and International Institute for Environment and Development, *Climate-induced Migration and Modern Slavery: A Toolkit for Policymakers*, 2021, iied.org/sites/default/files/pdfs/2021-09/20441G.pdf

⁸⁰ IPCC, *Climate Change 2022 - Climate Impacts, Adaptation and Vulnerability*, Working Group II Contribution to the Sixth Assessment Report: Chapter 10 – Asia, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter10.pdf, p. 1469.

⁸¹ Government of the People’s Republic of Bangladesh – Ministry of Environment, Forest and Climate Change, “National Adaptation Plan of Action”, 2009, unfccc.int/sites/NAPC/Country%20Documents/Parties/ban02.pdf.

⁸² Government of the People’s Republic of Bangladesh, “Bangladesh Climate Change Strategy and Action Plan”, 2009, policy.asiapacificenergy.org/sites/default/files/Bangladesh%20Climate%20Change%20Strategy%20and%20Action%20Plan%202009.pdf

⁸³ International Institute for Environment and Development, *The Bangladesh National Climate Funds*, 1 May 2012, idc-climate.org/wp-content/uploads/2018/02/LDC-paper-series-18.pdf

⁸⁴ World Resources Report, *Bangladesh Comprehensive Approach to Disaster Management*, 1 January 2012, wriorg.s3.amazonaws.com/s3fs-public/uploads/wrr_case_study_bangladesh_comprehensive_disaster_management.pdf

However, the stories of suffering collected in this case study show that much more needs to be done both nationally and through international cooperation and assistance to ensure that plans and strategies translate into real changes for people living on the frontline of the climate crisis, who are also grappling with other systemic issues such as poverty and marginalization.

Nagorik Uddyog researchers found limited knowledge of climate change and how to cope with it among the people interviewed. Despite this, many interviewees had clear asks for the local and national authorities for measures that could improve their situation.

For example, residents demanded more permanent mechanisms to protect them from flooding and saline water intrusion, as the coastal embankments built in the 1960s are degrading and they often use sandbags to stop salt water intrusion, which are not sufficiently resilient in the monsoon season.⁸⁵ However, it will be important to integrate the construction of seawalls into a long-term adaptation plan to effectively reduce impacts to people and assets in the short-term and to avoid climate risks in the long-term.⁸⁶

Residents interviewed also demanded more livelihood diversification programmes and employment creation activities in the area. For example, during the three- to six-month seasonal ban on fishing in the Sundarbans declared by the government for nature conservation reasons, fisherfolk and communities dependent directly or indirectly on the Sundarbans' resources for their livelihood find themselves with no means of subsistence. With no compensation provided and no other livelihoods available, fisherfolk are left with limited options besides indebtedness, migration or defying the ban.⁸⁷ The authorities have been arresting people to enforce the ban.⁸⁸

Indigenous Munda people interviewed for this report demanded respect and protection of their land rights. As the UN Special Rapporteur on human rights and climate change noted, access to their land "is an important precondition for the realization of several rights that are impacted by the consequences of climate change, particularly the rights to adequate food, water and housing as well as the right to health and the protection against non-discrimination".⁸⁹

85 In the 1960s, the government built 139 coastal embankments in 13 districts of the country to protect coastal areas from floods and saline water intrusion. However, most of the embankments are now degraded. The World Bank is supporting the rehabilitation of the embankment system. See World Bank, Coastal Embankment Improvement Project, projects.worldbank.org/en/projects-operations/project-detail/P128276?lang=en&tab=overview

86 IPCC, *Climate Change 2022 - Climate Impacts, Adaptation and Vulnerability*, Working Group II contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Summary for Policymakers, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf, para C.4.1.

87 Dhaka Tribune, "Fishing bans in Sundarbans render hundreds of fishermen jobless", 15 July 2019, archive.dhakatribune.com/bangladesh/nation/2019/07/15/fishing-bans-in-sundarbans-render-hundreds-of-fishermen-jobless

88 A. Sidiqque, Mongabay, "Bangladesh ban on resource hunting in Sundarbans leaves communities facing hardship", Mongabay, 30 May 2022, news.mongabay.com/2022/05/bangladesh-ban-on-resource-hunting-in-sundarbans-leaves-communities-facing-hardship/

89 UN Special Rapporteur for the Promotion and Protection of Human Rights in the Context of Climate Change, *Statement at the Conclusion of the Country Visit to Bangladesh*, 15 September 2022, ohchr.org/sites/default/files/documents/issues/climatechange/2022-09-14/SR-ClimateChange-EOM-Statement-Bangladesh-20220915.pdf

4. FISHERFOLK COMMUNITIES IN SOUTH-EASTERN HONDURAS

4.1 POVERTY AND INEQUALITY

Honduras has one of the highest poverty and income inequality rates in Latin America.⁹⁰ Some 82% of the rural population of Honduras lives in poverty.⁹¹

Climate change and other environmental degradation are seriously damaging the livelihoods of fisherfolk in the Fonseca Gulf area of Honduras, exacerbating poverty and inequalities.⁹²

The residents of the villages of Punta Ratón, Cedeño, Guapinol and Pueblo Nuevo in the Marcovia municipality, Choluteca department, rely on subsistence fishing as their main source of income and food; a livelihood which is highly vulnerable to climate shocks and other environmental factors. There is no local livestock production to replace fishing as a source of food, and what small-scale agriculture previously existed has been destroyed by salt-water incursion caused by sea-level rise.

With no running water in the villages and underground water contaminated, drinking water must be bought. Most households lack sewage systems and there is no solid waste collection or management.

4.2 CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION

Fisherfolk families in the four villages face the harsh impacts of the climate crisis daily. Sea-level rise is causing permanent submergence of land, significant coastal erosion and more frequent and intense coastal flooding.⁹³ Since 2012, the coastline of Cedeño has regressed between 65m and 108m.⁹⁴

90 IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change: Chapter 12 - Central and South America, February 2022, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter12.pdf, p. 1689

91 IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change: Chapter 12- Central and South America, February 2022, [ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter12.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter12.pdf), p. 1689

92 FIAN International Honduras, *Diagnóstico sobre el impacto del cambio climático en la realización progresiva del derecho a la alimentación y nutrición adecuada en el Municipio de Marcovia*, 2021 (unpublished)

93 Misereor and FIAN International Honduras, *Impacto del cambio climático en los recursos costeros y medios de vida en las comunidades de Guapinol, Cedeño y Punta Ratón, Marcovia, Choluteca*, 2021, (unpublished). For the general impacts of sea-level rise, see IPCC, "Special Report on the Ocean and Cryosphere in a Changing Climate": Chapter 4 - Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities, September 2019, [ipcc.ch/site/assets/uploads/sites/3/2022/03/06_SROCC_Ch04_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/sites/3/2022/03/06_SROCC_Ch04_FINAL.pdf)

94 Misereor and FIAN International Honduras, *Impacto del cambio climático en los recursos costeros y medios de vida en las comunidades de Guapinol, Cedeño y Punta Ratón, Marcovia, Choluteca*, 2021 (unpublished)

HONDURAS



Guapinol, Cedeño and Punta Ratón are flood-prone and highly vulnerable due to their proximity to the coast and estuaries.⁹⁵ Residents noted having been affected by more frequent storm surges for at least the past 20 years. In 2020 the communities were severely affected by hurricanes Eta and Iota, which hit the region two weeks apart and caused about USD 10 billion in damages and displaced 937,000 people in Honduras.⁹⁶

The climate crisis adds additional pressure to communities affected by human-made, non-climatic environmental degradation. In particular, the expansion of the shrimp industry since the 1970s has resulted in the removal of large areas of mangrove forest.⁹⁷ Mangrove destruction increases the risk of inland flooding for coastal communities. It has also degraded water quality and reduced the habitat for fish.⁹⁸ This, in

95 A d. R. Martinez Ortiz and J.R. Bravo Moreno, "Evaluación de potenciales impactos y reducción de la vulnerabilidad de la pesca y la acuicultura al cambio climático en el Golfo de Fonseca", 2013, FAO Actas de Pesca y Acuicultura (29), repositorio.uca.edu.ni/1108/Misereor and FIAN International Honduras, *Impacto del cambio climático en los recursos costeros y medios de vida en las comunidades de Guapinol, Cedeño y Punta Ratón, Marcovia, Choluteca*, 2021 (unpublished)

96 For an overview of the main human rights concerns in the aftermath of storms in Honduras, see Amnesty International, "When it rains, it pours: The devastating impact of hurricanes Eta and Iota in Honduras", 13 December 2020, [amnesty.org/en/latest/news/2020/12/devastating-impact-hurricanes-eta-iota-honduras/](https://www.amnesty.org/en/latest/news/2020/12/devastating-impact-hurricanes-eta-iota-honduras/);

Inter-American Development Bank (IDB) and Economic Commission for Latin America and the Caribbean (ECLAC), *Assessment of the Effects and Impacts of Tropical Storm Eta and Hurricane Iota in Honduras*, May 2021, repositorio.cepal.org/bitstream/handle/11362/46853/3/S2100044_es.pdf; International Federation of the Red Cross and Red Crescent Societies (IFRC), *Communities affected by Hurricanes Eta and Iota are threatened by food insecurity, displacement and the climate crisis*, 11 November 2021, reliefweb.int/report/honduras/communities-affected-hurricanes-eta-and-iota-are-threatened-food-insecurity

97 J. Tobey and others, "Impactos económicos, ambientales y sociales del cultivo de camarón en Latino América, Centro de Recursos Costeros", 1998, Universidad de Rhode Island, crc.uri.edu/download/MAN_0034.pdf

98 Earth Observatory, "Shrimp farming in Honduras", no date, earthobservatory.nasa.gov/images/6339/shrimp-farming-in-honduras

combination with the warming and acidification of ocean waters⁹⁹ linked to climate change, as well as overfishing, is contributing to the loss of marine habitat and a decline in the fish population.¹⁰⁰

“The shrimp companies have totally destroyed us. You have no idea what the mangroves used to be like, it was a pleasure to see and appreciate them. Today you can no longer see them, they have been destroyed, it is a desert over the water.”

Resident of Cedeño.¹⁰¹

As a coping strategy in the face of environmental changes and extreme poverty, residents explained they are often reduced to cutting mangrove as a survival strategy to sell as timber or firewood, contributing to the further degradation of their environment.

“We are living a natural phenomenon caused by global warming and caused by ourselves for not obeying the ecological damage we did, for deforesting our forests, in particular our mangrove forests, which we did without conscience, and now we must take care of what is left for the generations to come.”

Resident of Punta Ratón

4.3 DESTRUCTION OF HOMES

Permanent submergence of land, coastal erosion and repeated flooding are severely undermining villagers' right to adequate housing.

“The fishermen have lost the few resources they had invested in their houses, which were destroyed by the waves.”

Community leader in Punta Ratón.

For example, during a storm surge in 2015, 37 local houses were totally destroyed and 36 partially destroyed in Marcovia.¹⁰² An entire neighbourhood in Cedeño was destroyed, with affected residents relocating to other neighbourhoods or living with relatives. Likewise, in Punta Ratón, the receding coastline has forced more than 200 families to relocate.

“[W]e are waiting for any tidal wave to cause flooding or to drown us while we sleep.”

Resident of Pueblo Nuevo.

With limited economic resources and what they describe as limited or inconsistent support from the authorities affected families often rebuild their houses in at-risk areas. As observed by FIAN Honduras researchers, they usually end up living in more precarious structures than before, built with materials such as wood, earth, mud, plastic sheeting, coconut palms and earthen floors, and with no access to water or sanitation services. Their living conditions put them, and particularly children, at risk of respiratory, diarrhoeal and parasitic diseases.

99 Global warming manifests itself not only in the rise of air temperatures but also rising ocean temperatures. Ocean acidification is the process in which seawater becomes more acidic because of the excess carbon dioxide it is absorbing from the atmosphere. Both phenomena have negative impacts on marine species and ecosystems. See International Union for Conservation of Nature, “Issues brief: Ocean warming, November 2017, www.iucn.org/sites/default/files/2022-07/ocean_warming_issues_brief_final.pdf

Natural Resources Defence Council, “Ocean acidification: What you need to know”, 13 October 2022, www.nrdc.org/stories/what-you-need-know-about-ocean-acidification

100 IPCC, “Climate Change 2022: Impacts, Adaptation and Vulnerability”, Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change: Chapter 3 - Oceans and Coastal Ecosystems and their Services, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter03.pdf, pp. 371 , 426, 448; Misereor and FIAN International Honduras, *Impacto del cambio climático en los recursos costeros y medios de vida en las comunidades de Guapinol, Cedeño y Punta Ratón, Marcovia, Choluteca, 2021* (unpublished)

101 All interviews for this case study were conducted by FIAN Honduras on behalf of Amnesty International between June and September 2021. See Methodology in Chapter 1.

102 World Vision, “Asistencia humanitaria en Municipio de Marcovia ante Inundaciones por Marejada”, 5 May 2015, reliefweb.int/report/honduras/asistencia-humanitaria-en-municipio-de-marcovia-ante-inundaciones-por-marejada



Mr. Julian Flores standing in front of the remains of his house. Punta Ratón, Honduras, October 2022. © David Estrada/Amnesty International

4.4 LOSS OF LIVELIHOODS

Storm surges and floods also cause significant damage and destruction to local infrastructure and businesses, further degrading villagers' rights to work and an adequate standard of living.

"The sea has destroyed hotels and restaurants, which have been devastated by the tidal waves, which destroy everything in their path near the beach, penetrating several blocks into the mainland."

Community leader and entrepreneur in Cedeño whose beach hotel was destroyed.

Each episode of flooding can prevent fishing for several days or weeks, and interrupts other economic activities that revolve around or are supported by fishing. This paralysis causes loss of income and indebtedness for fisherfolk, most of whom work with rented boats and access boat fuel on a loan basis.

Even on a "good" day, fishing has become a less productive activity because of the decline in fish population caused by climate change and other environmental degradation.¹⁰³

"The day begins at three o'clock in the morning... The fishing is not much, since the species are scarce. We come back from fishing at three or four in the afternoon, it's not easy, that's why I say that money is not easy to earn. And when the fishing is bad, you can't even pay for the fuel for the boat."

Resident of Punta Ratón.

¹⁰³ Food and Agriculture Organization, *Impacts of Climate Change on Fisheries and Aquaculture: Synthesis of Current Knowledge, Adaptation and Mitigation Options*, 2018, fao.org/3/i9705en/i9705en.pdf

4.5 FOOD INSECURITY AND IMPACTS ON HEALTH AND EDUCATION

Fish and seafood are central to the local diet. Fisherfolk sell some of the catch to buy other foodstuffs, medicine, clothing and school supplies. Extreme weather events and the reduction in fish species are reducing the standard of living of fisherfolk families, preventing them buying essentials, including food. Food insecurity particularly affects children, pregnant women and older people. People interviewed in Cedeño reported eating only twice a day.

“Families have reduced meal times in order to fit into the family budget”

Fisherman from Punta Ratón.

“[I]f we have dinner, we buy it for one day and the next day we don't know what we're going to eat.”

Moisés Osorto, Presidente de la Asociación de Pescadores Artesanales del Golfo de Fonseca (APAGOLF), living in Cedeño.

Women are particularly affected as they bear the burden of housework and family care in conditions of food scarcity.

“I work washing other people's clothes and selling fish to feed the children, supporting us as a family. I wash [clothes] up to three or four times a week. Another thing I have done is to go buy some fish and re-sell it to the market and bring food to the house for my children, but this is not enough to cover the three meal times in my family.”

Resident of Guapinol.

Reduced income from fishing means families have fewer resources to buy medicines and access specialized treatment.

“When a child gets sick, gets a cold or fever, [all] we can [afford] is acetaminophen [paracetamol]”

Moisés Osorto, Presidente de la Asociación de Pescadores Artesanales del Golfo de Fonseca (APAGOLF), living in Cedeño.

Parents also have fewer resources to pay for children's education. Municipal authorities have calculated a dropout rate of 66% in Cedeño's village school.¹⁰⁴

“I used to be able to send my son to school, but now I don't have that luxury, I'm getting poorer every day.”

Resident of Punta Ratón.

“We miss fishing so much. I had four daughters studying, now I only have one, I have no capacity for the others, one stayed in eighth grade and another one passed ninth grade.... I [previously] managed seven boats of my own, now I can only maintain one boat.”

Fisherfolk leader from Cedeño.

4.6 FORCED DISPLACEMENT AND MIGRATION

Poorer households noted that disaster insurance schemes and government supported reconstruction efforts typically miss subsistence and small scale fisherfolk and farmers. They also reported having difficulties in accessing credit to cope with loss and damage to their homes and possessions following extreme events. The combination of climate change, environmental degradation, poverty and inequality is forcing people to leave their communities in search of better opportunities.

¹⁰⁴ Plaza Publica, “La agonía de una aldea tragada por el mar”, 5 July 2021, www.plazapublica.com.gt/content/la-agonia-de-una-aldea-tragada-por-el-mar



Mrs. Bacita Romero stands in front of her flooded house, Cedeño, Honduras, October 2022. Due to her feet being constantly in the standing floodwater, she has developed a crippling infection.
© David Estrada/Amnesty International

“[L]ast year and the year before, a large number of families left Punta Ratón.”

Resident of Punta Ratón.

Some migrate temporarily to work in coffee plantations in the west and east of Honduras. Others go to northern Honduras to look for work in maquilas (factories) or in the sugar cane harvest. Others embark on perilous journeys towards the USA or Spain.¹⁰⁵

Cedeño residents expressed sorrow that their village is facing misery and destruction. They predict that in 10 to 15 years they will be made homeless by the advancing sea. Unless the current outlook changes significantly, they see migration as their only option.

4.7 COMMUNITIES’ DEMANDS

Despite the multiple challenges they face, fisherfolk communities in the four villages have clear ideas about measures that could help them cope with the interlinked crises they are facing.

They are advocating with national and local authorities to put in place independent projects to recover the mangrove ecosystem. There is also widespread awareness among local fisherfolk about the need to prohibit fishing in the Fonseca Gulf at certain times of year to avoid the permanent depletion of maritime resources. However, this should be accompanied by income-diversification activities and other socio-economic measures to ensure the community has access to adequate support and alternative sources of livelihoods during those seasons.

Community members also want the authorities to conduct research into the contamination of marine waters in the Gulf and the effect of this contamination on marine species and human health, and to regulate and monitor companies’ conduct to avoid the disposal of chemical waste in the Gulf.

What is clear is that all the measures above should be designed and implemented with the full participation of the concerned communities to ensure their success.

¹⁰⁵ World Food Programme, “Honduras: Climate change, coronavirus and caravans”, 21 April 2021, wfp.org/stories/honduras-climate-change-coronavirus-and-caravans. On the human rights violations faced by Central Americans seeking asylum and migrating towards Mexico and the USA, see Amnesty International, *Mexico: Overlooked, under-protected: Mexico’s deadly refoulement of Central Americans seeking Asylum* (Index Number: AMR 41/7602/2018), 23 January 2018, amnesty.org/en/documents/amr41/7602/2018/en/; Amnesty International, *USA: “You don’t have rights here”: Illegal pushbacks, arbitrary detention & ill-treatment of asylum-seekers in the United States* (Index Number: AMR 51/9101/2018), 11 October 2018, amnesty.org/en/documents/amr51/9101/2018/en/

5. COASTAL COMMUNITIES IN SAINT-Louis, SENEGAL

5.1 POVERTY AND INEQUALITY

Since the mid-20th century, Senegal's former capital Saint-Louis has received large numbers of migrants from the interior of the country. Driven partly by drought and seeking new opportunities, these migrants have rapidly swelled the population of greater Saint-Louis,¹⁰⁶ including in areas at particular risk of flooding.¹⁰⁷

One especially vulnerable area includes the Langue de Barbarie, a narrow (100m to 400m wide) sand peninsula. Approximately 80,000 people reside in densely populated fishing neighbourhoods along the Langue de Barbarie, more than 9,000 in the neighbourhoods of Guet Ndar, Goxou Mbathie and Ndar Toute alone. These neighbourhoods are at high risk from flooding and erosion¹⁰⁸ and residents of the peninsula have minimal access to public services.¹⁰⁹

"The Langue de Barbarie, and particularly the neighbourhood of Gueth Ndar, suffers from several serious problems: lack of infrastructure, poor services, and private property encroaching on public spaces."

Woman fish trader from Guet Ndar.¹¹⁰

Most households in Langue de Barbarie rely on artisanal fishing for their livelihoods and diet, with men typically practising fishing and women occupied in fish processing and sale. Due to overfishing and trade agreements between Senegal and third parties for fishing, the fishermen of Guet Ndar have had to go farther and farther out to sea, often in the waters of neighbouring countries (Mauritania, Gambia) to sustain their livelihoods. This has created tensions; for example, some Senegalese fishermen have been arrested by neighbouring countries' coast guards.¹¹¹

106 L. Martinez-Quintana and E. Caceres-Morales, "Urban growth and cultural identity; fractures and imbalances in heritage values: a case study of the island of Saint-Louis, Senegal", May 2016, Gale Academic Onefile, go.gale.com/ps/i.do?p=AONE&u=googlesearch&id=GALE|A458165110&v=2.1<=r&sid=AONE&asid=ae8cf04f

107 UNDRR, "Saint-Louis – Senegal", no date, unisdr.org/campaign/resilientcities/cities/senegal/saint-louis.html?tid=lk_inline_enhanced-template

108 The World Bank, "SN - AF Saint Louis Emergency Recovery and Resilience Project", documents1.worldbank.org/curated/en/423451588951113712/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-SN-AF-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P170954.txt

109 L. Martinez-Quintana and E. Caceres-Morales, "Urban growth and cultural identity; fractures and imbalances in heritage values: a case study of the island of Saint-Louis, Senegal", May 2016, Gale Academic Onefile, go.gale.com/ps/i.do?p=AONE&u=googlesearch&id=GALE|A458165110&v=2.1<=r&sid=AONE&asid=ae8cf04f

110 All interviews for this case study were conducted by Amnesty International in November and December 2021. See Methodology in Chapter 1.

111 Le 360 Afrique, "Sénégal-Mauritanie: les pêcheurs de Guet Ndar en désaccord avec le futur accord", 15 March 2018, afrique.le360.ma/senegal/economie/2018/03/15/19827-senegal-mauritanie-les-pecheurs-de-guet-ndar-en-desaccord-avec-le-futur-accord-19827; Radio France Internationale, "Pêcheurs sénégalais arrêtés en Guinée : un ministre dépêché par Dakar doit se rendre à Conakry", 7 June 2022, rfi.fr/fr/afrique/20220607-p%C3%A9cheurs-s%C3%A9nagalais-arrêt%C3%A9s-en-guin%C3%A9e-un-ministre-d%C3%A9p%C3%A9che%C3%A9-par-dakar-doit-se-rendre-%C3%A0-conakry

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5.2 CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION

In 2008, UN-Habitat designated Saint-Louis the city most threatened by rising sea levels in the whole of Africa.¹¹² Coastal communities, particularly in Langue de Barbarie, are at risk due to coastal erosion resulting in the retreat of the coastline, coastal flooding, storm surges and river flooding. Coastal erosion along Langue de Barbarie has accelerated in recent years, with up to 5m to 6m of beach being lost per year.¹¹³

“I have noticed a lot of changes in the climate: the sea is advancing.”

Fisherman living in Guet Ndar.

The coastal erosion is caused by a combination of sea-level rise, natural transport of sand by Atlantic waves, coastal urbanization and poorly planned infrastructure.¹¹⁴ In 2003, following a period of heavy rainfall, the government attempted to limit flooding of the Senegal River by cutting a 4m canal across the peninsula.¹¹⁵ The effect was disastrous: the canal has been growing ever since and is now more than 7km wide.¹¹⁶ The breach has split the peninsula in two and caused the full submergence of the island of Doune Baba Dieye. It has also severely damaged local economic activities, particularly as a consequence of salt-water incursion in fresh river waters.¹¹⁷

Meanwhile, residents interviewed have observed changes in weather and climate patterns, which are consistent with IPCC findings.¹¹⁸

“Currently we are noting significant heat in a period when it used to be very cool... we consider the changes are catastrophic because the cold period has been transformed into a hot period.”

Artist and environmentalist, resident of Saint-Louis.

Climate change is also contributing to a depletion of marine species,¹¹⁹ exacerbated by unsustainable fishing practices, including by foreign trawlers.¹²⁰

“Men are facing the scarcity of fisheries resources. Previously, fishermen came with canoes full of fish. This is no longer the case, and it is difficult to fill a basin.”

Woman resident of Diel Mbam.

112 UNDRR, “Saint-Louis – Senegal”, no date, unisdr.org/campaign/resilientcities/cities/senegal/saint-louis.html?tid=lk_inline_enhanced-template

113 The World Bank, “SN – AF Saint Louis Emergency Recovery and Resilience Project”, documents1.worldbank.org/curated/en/423451588951113712/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-SN-AF-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P170954.txt

114 The World Bank, “SN - AF Saint Louis Emergency Recovery and Resilience Project”, documents1.worldbank.org/curated/en/423451588951113712/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-SN-AF-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P170954.txt

115 Minority Rights Group, “Senegal: The impact of the climate crisis on the fisher community of St. Louis”, 13 November 2019, <https://minorityrights.org/2019/11/13/SENEGAL-IMPACT-OF-THE-CLIMATE-CRISIS/>

116 BBC, “A Saint-Louis, la mer dicte sa loi”, 22 June 2018, bbc.com/afrique/resources/ldt-sh/senegal_et_la_mer

117 Flood Resilience Portal, “Senegal’s sinking villages”, July 2018, floodresilience.net/resources/item/senegal-s-sinking-villages/

118 The IPCC reported that mean temperature increase has generally been more rapid in Africa than the global average. West Africa has also experienced a decrease in the number of cool nights, as well as more frequent warm days and warm spells. In West Africa there has been an increase in river flooding and agricultural and ecological droughts. See IPCC, “*Climate Change 2021 - The Physical Science Basis*”, Working Group I Contribution to the Sixth Assessment Report: *Atlas*, August 2021, ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Atlas.pdf, pp. 1967-1971
IPCC, “*Climate Change 2021 - The Physical Science*”, Working Group II contribution to the Sixth Assessment Report: *Regional Fact Sheet – Africa*, August 2021, ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Africa.pdf

119 Government of Senegal, *Plan National d’Adaptation du Secteur de la Pêche et de l’Aquaculture Face au Changement Climatique Horizon 2035*, October 2016, chm.cbd.int/api/v2013/documents/A0E18B74-831F-6EEB-3AAA-1A7C07F3F3AC/attachments/207058/Plan%20National%20Adaptation%20Principal_2016.pdf

120 Government of Senegal, *Plan National d’Adaptation du Secteur de la Pêche et de l’Aquaculture Face au Changement Climatique Horizon 2035*, October 2016, chm.cbd.int/api/v2013/documents/A0E18B74-831F-6EEB-3AAA-1A7C07F3F3AC/attachments/207058/Plan%20National%20Adaptation%20Principal_2016.pdf

A. Doumbouya and others, “Assessing the effectiveness of monitoring control and surveillance of illegal fishing: The case of West Africa”, 2017, *Frontiers in Marine Science*, Volume 4, frontiersin.org/articles/10.3389/fmars.2017.00050/full France 24, “Overfishing in Senegal: Chinese trawlers leave local fishermen with empty nets”, 24 February 2022, france24.com/en/tv-shows/focus/20220224-overfishing-in-senegal-chinese-trawlers-leave-local-fishermen-with-empty-nets; Africa Renewal, “Overfishing destroying livelihoods”, May-July 2017, [https://www.un.org/africarenewal/magazine/may-july-2017/overfishing-destroying-livelihoods](http://www.un.org/africarenewal/magazine/may-july-2017/overfishing-destroying-livelihoods)



Aerial view showing destroyed houses along the seaside fishing neighbourhood of Guet Ndar, Langue de Barbarie, Saint Louis, August 2021.
© AFP via Getty Images

5.3 LOSS OF LIVELIHOODS

The local economy mostly relies on fishing, including freshwater fishing. Freshwater salinization, flooding and reduced fish populations are therefore causing widespread damage to livelihoods. The Senegalese government has identified the collapse of the local economy in Saint-Louis and other major fishing regions as a key risk spurred by climate change, predicting that it could increase poverty, irregular emigration to Europe and the USA, and social unrest.¹²¹

“People in our community are more impacted by climate change than other [people] because they only work in fishing and agriculture and do not do additional activities.”

Housewife and NGO volunteer in Gondiol.

“The dominant activity in Guet Ndar is fishing, but with the advance of the sea, we no longer work and we are witnessing the scarcity of fish.”

Woman fish seller and resident of Guet Ndar.

Interviewees noted the harsh impact of shrinking economic opportunities on young people and women.

“The youth are the most affected by this phenomenon because they must continue their families’ activities while facing all these difficulties.”

Woman fish processor in Gokhou Mbathie.

“Women are the most affected, because they take care of the family. Their husbands give them money only when they have [it], and only then [do] they manage to feed the family.”

Fisherman and resident of Guet Ndar.

¹²¹ Government of Senegal, *Plan National d'Adaptation du Secteur de la Pêche et de l'Aquaculture Face au Changement Climatique Horizon 2035*, October 2016, chm.cbd.int/api/v2013/documents/A0E18B74-831F-6EEB-3AAA-1A7C07F3F3AC/attachments/207058/Plan%20National%20Adaptation%20Principal_2016.pdf

5.4 FORCED DISPLACEMENT, PLANNED RELOCATION AND MIGRATION

Doune Baba Dieye is an island located between Langue de Barbarie and the mainland. Its approximately 800 inhabitants were forced to abandon their homes when the sea began submerging the island, mostly as the result of the construction of the canal across the Langue de Barbarie in 2003.

The canal was intended to decrease the harm caused by more extreme storms and rising seas, but the government did not reinforce it. It widened into a large breach and became the new mouth of the Senegal River, 20km north of its previous location. The sea slowly inundated the island of Doune Baba Dieye, destroyed the settlements there and contaminated the freshwater that had been used to support agriculture. By 2012, the last residents of Doune Baba Dieye had left the island. Now the island emerges only during low tides, when ruins and dead tree branches peek through the rings of sand. The residents of Doune Baba Dieye moved to nearby areas, including the village of Diel-Mbam. The government has provided some livelihood programmes to support these internally displaced people, but people interviewed for this study found support for adequate housing inadequate.

"We left Doune Baba Dieye because of the advancing sea to come and settle here in Diel-Mbam, but we are still thinking of moving because the river and the sea are not far away and can advance from one day to the next. We leave everything in the hands of God."

Displaced woman.

Following storm surges in August 2017 and February 2018, at least 2,600 people lost their homes along the shoreline of Langue de Barbarie, as well as possessions and livelihood assets.¹²² Most of the displaced people went to Khar Yalla relief camp, several kilometres inland on the outskirts of Saint-Louis, run by the government was in a flood-prone area and living conditions were dire. Families lived in crowded tents with no sanitation services and inadequate access to water, electricity, and transport.¹²³ Since most of the displaced people earned their living from fishing, they had to travel to the sea, losing a significant portion of their wage in transport.¹²⁴

"Access to maternal and child health is also affected by these changes. Women who are in labour return to Gueth Ndar for their medical care and only return after delivery."

Woman fish processor living in Gueth Ndar.

"People who were relocated to Khar Yalla, Boudiouck and other [places] are coming back here to Gueth Ndar to find a livelihood."

Fisherman living in Guet Ndar.

In late 2020 and early 2021, the displaced people living in Khar Yalla were relocated to a safer site identified by the government in Djougop, in the district of Gandon, 13km from Langue de Barbarie.¹²⁵ They were housed in temporary accommodation in mobile units and are due to be allocated permanent brick-built homes, funded by the World Bank, by the end of 2022.¹²⁶

122 All Africa, "Sénégal: Développement local – Diel-Mbam à l'heure de l'aquaculture en eau salée", 2 September 2021, [fr.allafrica.com/stories/202109020761.html](http://allafrica.com/stories/202109020761.html)

123 The World Bank, "SN – AF Saint Louis Emergency Recovery and Resilience Project (P170954)", 8 May 2020, documents1.worldbank.org/curated/en/423451588951113712/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-SN-AF-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P170954.txt

124 FloodList, "Senegal city races to move families as sea swallows homes", 4 April 2018, floodlist.com/africa/senegal-city-races-to-move-families-as-sea-swallows-homes

125 The World Bank, "Senegal - Saint-Louis Emergency Recovery and Resilience Project (P166538)", 2018, <https://documents1.worldbank.org/curated/en/535331608477508506/pdf/Disclosable-Version-of-the-ISR-Senegal-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P166538-Sequence-No-05.pdf>

126 Enquête+, "Les premières constructions en dur livrées avant fin 2022", 4 March 2022, enqueteplus.com/content/saint-louis-relogement-des-sinistres-de-la-langue-de-barbarie-les-premi%C3%A8res-constructions-en



A man walks past the ruins of a school in the seaside fishing neighbourhood of Guet Ndar, Langue de Barbarie, Saint Louis, August 2021.
© AFP via Getty Images

The Government of Senegal, with support from the Agence Française de Development (French Development Agency) has begun the construction of a coastal protection dyke on the Langue de Barbarie.¹²⁷ The World Bank is also supporting the government to permanently relocate more than 15,000 people living along the seafront in Langue de Barbarie by 2025. These residents have been identified as most at-risk from frequent and extreme storm surges.¹²⁸ Also planned is the construction of essential services and community facilities such as schools, health posts, youth centres, women's centres and markets in the permanent relocation site, along with assistance to restore livelihoods.

According to the World Bank, the households to be relocated are being consulted about the move and involved in local-level planning to ensure a smooth relocation.¹²⁹ However, media reports state that local authorities are facing difficulties in convincing people to relocate, given their attachment to their land, homes, cultural identity and traditional livelihoods.

"We're thinking of moving, but we don't really want to. Because if you want to kill a fisherman, you have to take him away from the sea, we only know the sea."

Fisherman living in Guet Ndar.

Several interviewees noted that some fishermen migrate temporarily or permanently to nearby countries in search of better fishing opportunities, while some even embark on perilous journeys to reach Morocco, the Canary Islands (Spain), or elsewhere in Europe. Fewer women than men migrate away from Saint-Louis.

¹²⁷ Croniques, "Lutte contre l'avancée de la mer: Le chantier de construction de la digue de protection de la Langue de Barbarie, d'un coût de 10,5 milliards Cfa, avance à grands pas", 5 January 2021, chroniques.sn/actualites/lutte-contre-lavancee-de-la-mer-le-chantier-de-construction-de-la-digue-de-protection-de-la-langue-de-barbarie-du-cout-de-105-milliards-cfa-avance-a-grands-pas/

¹²⁸ The World Bank, "SN – AF Saint Louis Emergency Recovery and Resilience Project (P170954)", 8 May 2020, documents1.worldbank.org/curated/en/423451588951113712/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-SN-AF-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P170954.txt

¹²⁹ The World Bank, "SN – AF Saint Louis Emergency Recovery and Resilience Project (P170954)", 8 May 2020, documents1.worldbank.org/curated/en/423451588951113712/text/Project-Information-Document-Integrated-Safeguards-Data-Sheet-SN-AF-Saint-Louis-Emergency-Recovery-and-Resilience-Project-P170954.txt

Their responsibility for household management and care responsibilities and their occupations in fish processing and sale make them less mobile than men.¹³⁰

“Women are the most affected since men leave for the countryside in Casamance [southern Senegal], Gambia or Mauritania; thus, women remain in the houses to manage the family and provide for their needs.”

Community organiser and resident of Tassinière, Gadiol.

Seasonal and permanent migration is not new in Senegal and is particularly common among fishermen in Saint-Louis. However, climate change and environmental degradation are adding additional pressures to migrants and also affect the duration of migration and the chosen destination.¹³¹ The World Bank predicts that up to 443,000 people (5.58% of the coastal population) in Senegal's coastal areas may migrate under the most pessimistic climate change scenario.¹³²

5.5 COMMUNITIES' DEMANDS

Residents of coastal communities in St. Louis who were interviewed for this report are aware of climate change and its impacts and are already taking a number of initiatives to support each other. For example, some communities have set up a solidarity fund to help each other at times of greatest difficulty, even though in some instances they reported that the fund had been left empty because of the economic problems affecting the community. The community-led project Hahatay Gadiol carries out awareness-raising campaigns among local residents and supports residents affected by sea-level rise to build houses with traditional clay brick techniques and to set up income-generating recycling activities. Other local associations organize around waste collection and management.

Despite their community-based efforts, all interviewees noted that they needed more support from the authorities. Many of the interviewees stressed that they would like to see a hotline or similar service to report impacts of climate change and environmental degradation and activate emergency responses. They also expressed the need for initiatives to create alternative sources of livelihoods and build residents' skills to avoid over-reliance on fishing. Displaced people from Doune Baba Dieye demanded support from the authorities to access adequate housing, food, water and other essential services.

“We are asking for help from the government because we are brave women and we really want to work to support ourselves and [our] family”

Woman displaced from Doune Baba Dieye.

130 C. Zickgraf, “Relational (im)mobilities: A case study of Senegalese coastal fishing populations”, 24 May 2022, Journal of Ethnic and Migration Studies, Volume 448, Issue 14, tandfonline.com/doi/full/10.1080/1369183X.2022.2066263

131 C. Zickgraf, “Relational (im)mobilities: A case study of Senegalese coastal fishing populations”, 24 May 2022, Journal of Ethnic and Migration Studies, Volume 448, Issue 14, tandfonline.com/doi/full/10.1080/1369183X.2022.2066263

132 The World Bank, *Groundswell Africa: Internal Climate Migration in West African Countries*, 2021, openknowledge.worldbank.org/bitstream/handle/10986/36404/Groundswell-Africa-Internal-Climate-Migration-in-West-African-Countries.pdf?sequence=1&isAllowed=y, p 11.

6. INDIGENOUS INNU PEOPLE IN PESSAMIT, QUEBEC, CANADA

6.1 COLONIALISM AND INDIGENOUS PEOPLES' RIGHTS

Indigenous peoples in Canada continue to experience the harsh consequences of colonial policies and practices making them more vulnerable to the more recent impacts of climate change. The 1876 Indian Act, which aimed to assimilate Indigenous Peoples into European-Canadian culture and dispossess them of their territory, remains in force, despite some amendments.¹³³ The Act established a system of reserves to control Indigenous territory and to settle nomadic Indigenous peoples. The reserves, delineated by the federal government alone, represent a tiny portion of the territory that each Indigenous nation considers to be its own. They have the right to use the land in the reserves, but they do not own it, as reserves remain possessions of the federal government. The provincial government meanwhile has the power to grant mining, forestry and hydroelectric exploitation permits on the territory that was inhabited by Indigenous peoples. The obligation to obtain the free, prior and informed consent of Indigenous peoples for mining, forestry, hydroelectric and other projects on territory claimed by Indigenous groups is not fully implemented across Canada, including in Quebec.¹³⁴

This case study examines the Pessamit – an Indigenous community of the Innu Nation in the province of Quebec, Canada.¹³⁵ The Pessamit reserve is almost 256km² in size with a population of about 4,000 people.¹³⁶ However, the Innu's ancestral territory, known to the Innu as Nitassinan, is much larger; it is approximately 138,000km² and is used by the Innu for traditional community activities such as hunting and trapping in Canada's boreal forest. The Innu never ceded this larger traditional territory to the federal and

133 Government of Canada, Indians Act, 1985, laws-lois.justice.gc.ca/eng/acts/i-5/. For example, the Act still assigns the federal government the power to determine who is eligible for "Indian" status under the Act and obliges it to act as trustee for Indigenous financial affairs, perpetuating the idea that the federal government is better placed than the communities themselves to manage their finances.

134 S. Savard, "Les communautés autochtones du Québec et le développement hydroélectrique: un rapport de force avec l'État, de 1944 à aujourd'hui", Recherches amérindiennes au Québec, 2009, Volume 39, Issues 1-2. erudit.org/fr/revues/raq/2009-v39-n1-2-raq3971/044996ar/; C. Fréchette, "Développement hydroélectrique québécois : quelle place pour le consentement préalable, libre et éclairé chez les Cris et les Innus ?", Recherches amérindiennes au Québec, 2019, Volume 49, Issue 2, erudit.org/fr/revues/raq/2019-v49-n2-raq05428/1070758ar/; M. Papillon and T. Rodon, "Le consentement préalable, libre et éclairé : les défis de la mise en oeuvre en contexte canadien", Recherches amérindiennes au Québec, 2019, Volume 49, Issue 2, erudit.org/en/journals/raq/2019-v49-n2-raq05428/1070754ar/.

135 For more details about this case study, see Amnistie International Canada Francophone, *Urgence climatique en territoire Innu: l'innu-aitun en péril*, (Index Number: AMR 20/6175/2022) November 2022, <https://amnistie.ca/sinformer/2022/canada/canada-rapport-urgence-climatique-en-territoire-innu-ainnu-aitun-en-peril>

136 See official website of the Innus Council of Pessamit, pessamit.org/ and Government of Canada, Indigenous Services Canada, canada.ca/en/indigenous-services-canada.html

CANADA



provincial governments, and they continue to claim it. In 2005, the Pessamit community began court proceedings to officially claim their ancestral territory.¹³⁷

6.2 CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION ON INNU TERRITORY

Climate change, hydroelectric power projects and clear-cutting of forests have negatively affected the ecology of the land where the Pessamit live, and thus the community itself.

Rising temperatures have led to reduced coastal ice, ice thawing in winter and changes in rainfall. Retreating ice leaves coastal areas exposed to storm waves, accelerating coastal erosion.¹³⁸

Rising temperatures and unpredictable weather patterns are changing daily life in Pessamit and on the Nitassinan. Community members interviewed for this report mentioned warmer winters with reduction in

¹³⁷ The Superior Court of Quebec, *First Nation of Betsiamites v. Canada (Attorney General)*, 2005 CanLII 21668 (QC CS), 17 June 2005, canlii.org/en/qc/gccs/doc/2005/2005canlii21668/2005canlii21668.html

¹³⁸ P. Bernatchez and others, "Géorisques côtiers, vulnérabilité et adaptation de la communauté de Pessamit dans un contexte de changements climatiques", Laboratoire de dynamique et de gestion intégrée des zones côtières, Université du Québec à Rimouski, 2012, researchgate.net/publication/282219755_Georisques_cotiers_vulnerabilite_et_adaptation_de_la_communaute_de_Pessamit_dans_un_contexte_de_changements_climatiques, p. 191



↑ Aerial view of the Pessamit Reserve, Canada, October 2022.
© Jean-Luc Canapé, Conseil des Innus de Pessamit

snow cover on land and ice cover on lakes. In summer, they are witnessing hotter and drier periods. These are causing changes to the vegetation and river fish populations. They also observed how earlier winter ice thawing causes insects to appear earlier and in greater numbers, harming livestock and vegetation. These observations are consistent with the emerging scientific evidence suggesting that changes in freeze-thaw patterns influence insect survival and behaviour, with implications for food web dynamics and important ecosystem processes.¹³⁹

Community members described other weather changes too:

“These changes are very weird. It’s rare that we have big snowstorms like in the 1970s. There is a storm, then it rains, then it warms up.”

Adélard Benjamin, project coordinator for Territory and Resources in Pessamit.¹⁴⁰

A recent IPCC report describes some of the weather impacts of climate change in Canada, including reduction in the snowpack and in the extent of sea and lake ice across the country, with increased annual precipitation in areas including Quebec.¹⁴¹

Alongside the impacts of climate change, the Pessamit community is also exposed to the harmful consequences of the forestry industry in their territory, including clear-cutting of trees.¹⁴² This is particularly

139 A. M. Koltz and others, “Differential arthropod responses to warming are altering the structure of Arctic communities”, 18 April 2018, Royal Society Open Science, royalsocietypublishing.org/doi/10.1098/rsos.171503;

140 All interviews for this case study were conducted face-to-face and remotely, some in Innu and others in French, by a member of the community and the research team of Amnesty International Canada Francophone in September and October 2021. See Methodology in Chapter 1.

141 IPCC, “Climate Change 2022: Impacts, Adaptation and Vulnerability”, Working Group II Contribution to the Sixth Assessment Report: Chapter 14 – North America, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter14.pdf, p. 1936.

142 Clear-cutting is a silvicultural system that removes an entire stand of trees from an area of 1 ha or more, and greater than two tree heights in width, in a single harvesting operation. See W. Schönenberger ad P. Brang, “Site-specific silviculture: Silviculture in Mountain Forests”, 2004, Encyclopedia of Forest Sciences, sciencedirect.com/science/article/pii/B0121451607002283

harmful for ecosystems as it contributes to soil erosion, modifies the composition of nearby watercourses,¹⁴³ and reduces biodiversity, including of species that are significant in Pessamit culture.

"The caribou are disappearing more and more because of deforestation, because the forest is their natural shelter against predators."

Adélard Benjamin project coordinator for Territory and Resources in Pessamit.

The Pessamit Nation is also living with the harmful impacts of 13 hydroelectric power stations and 16 hydroelectric dams which have been built on their ancestral territory since 1952.¹⁴⁴ The Pessamit have long complained that these projects, most of which were built and are operated by the state-owned corporation Hydro-Québec have contributed to flooding, destroyed cultivated land and forests, altered fishing, irrigation, navigation in the affected rivers, and access to the territory; changing the way of life of the surrounding populations and their sources of income.¹⁴⁵ A 2016 legal filing by the Pessamit Nation referred to the "the detrimental and irreversible nature of such impacts in terms of its customs, traditional activities and rights guaranteed under the United Nations Declaration on the Rights of Indigenous Peoples".¹⁴⁶ With one exception, these dams were built without obtaining the free, prior and informed consent of the Innu of Pessamit.¹⁴⁷

"Those who made the dams, they install them but they don't pay attention. There are fish in the rivers, but they don't care. There are animals, they don't care. Even if it floods the land, they don't care about humans, let alone animals."

Philippe Rock and Robert Dominique, elders of the Pessamit Community.

"[Because of the hydroelectric dams,] we see a lot of erosion, many of these beaches have disappeared. So there are very few stopping places for people to stop, to make portage¹⁴⁸ to access the territory, because many beaches have been swallowed up, have been washed away."

David Toro, environmental adviser at Mamuitun Tribal Council.

143 Heritage Newfoundland, "Les industries forestières et l'environnement", 2011, heritage.nf.ca/articles/en-francais/economy/forestieres-et-environnement.php ; B. Freedman, "Environmental effects of forestry", in *Environmental Science: A Canadian Perspective*, 2018, Chapter 23, ecampusontario.pressbooks.pub/environmentalscience/chapter/chapter-23-environmental-effects-of-forestry/

144 See also Radio-Canada, "Hydro-Québec ce croit maître chez les autres", 2022 , ici.radio-canada.ca/recit-numerique/3463/territoire-barrages-pessamit-hydro-quebec

145 See Bureau d'audience publique d'environnement, Projet d'aménagement hydroélectrique de la rivière Toulnustuc, 2001, numerique.banq.qc.ca/patrimoine/details/52327/49949; Union of Concerned Scientists, "Environmental impacts of hydroelectric power, 5 March 2013, ucsusa.org/resources/environmental-impacts-hydroelectric-power; American Rivers Connect Us, "The future of hydropower", accessed on 28 October 2022, americanrivers.org/threats-solutions/energy-development/hydropower-climate-change/#:~:text=Hydropower%20dams%20can%20contribute%20to,dioxide%20added%20by%20fossil%20fuels.&text=Reservoirs%20allow%20broaden%20rivers%2C%20making%20them%20waterproof

146 "Petition to Intervene", 10 November 2016, northeastmegadamresistance.org/wp-content/uploads/2019/12/2015-06_2016-11-10_late_mtn_intervene_pessamit.pdf

147 S. Savard, "Les communautés autochtones du Québec et le développement hydroélectrique: un rapport de force avec l'État, de 1944 à aujourd'hui", Recherches amérindiennes au Québec, 2009, Volume 39, Issues 1-2, erudit.org/fr/revues/raq/2009-v39-n1-raq3971/044996ar/; M. Papillon and T. Rodon, "Le consentement préalable, libre et éclairé: les défis de la mise en oeuvre en contexte canadien", 2019, Recherches amérindiennes du Québec, Volume 49, Issue 2, erudit.org/en/journals/raq/2019-v49-n2-raq05428/1070754ar/. Only in the case of the Toulhoustouc River dam did the community achieve an agreement with the company Hydro-Québec in 1999; they have been able to collect royalties since then. The Partnership Agreement between Pessamit and Hydro-Québec was signed on 21 June 1999. Radio-Canada, "Hydro-Québec se croit maître chez les autres", 25 May 2022, ici.radio-canada.ca/recit-numerique/3463/territoire-barrages-pessamit-hydro-quebec. When presented with the statement that the dams were constructed without the free prior and informed consent of the Innu, Hydro-Québec responded that the dams were constructed following the legal obligations in force at the time of their construction.

148 "Portage" refers to the carrying of canoes overland from one body of water to another.



↑ A Caribou in woodland of the Pessamit reserve, Canada, 2017. © Alain Caron

The impacts of both the forestry practices and hydroelectric industries compound the effects of climate change. Dams and reservoirs alter the river hydrology and harm biodiversity.¹⁴⁹ Deforestation releases carbon into the atmosphere, thereby driving climate change, and reduces protection against heatwaves and other extreme weather events.

"There is no species of animal that can protect itself from the sun's rays because there are no more trees. They are really cut down."

Adélard Benjamin, project coordinator for Territory and Resources in Pessamit.

Reservoirs have been constructed as part of the hydroelectric projects, and trees have been cut down to make way for these reservoirs. Residents say that reservoir water can be heated by the increasingly warm weather, affecting temperatures in the local rivers. Research has indeed found that reservoirs are warmer than other bodies of water in the winter.¹⁵⁰

"On the river there is also a change in temperature because of the reservoirs. In the summer the reservoirs warm up, so in the autumn the water will stay warmer than in other rivers... in the spring, the water will stay cold longer on the river until about mid-June, early July. So, it has brought about some definite changes. For example, the salmon will spawn really late in the autumn here, compared to all the rivers where the salmon will start spawning in mid-October or so. Ours will spawn in mid-November just until December."

Éric Kanapé, biologist, environmental adviser for the Territory and Resources of the Pessamit community.

149 H. Wu and others, "Effects on dam construction on biodiversity: A review", 2019, Journal of Cleaner Production, Vol 221, [sciencedirect.com/science/article/abs/pii/S0959652619306845](https://www.sciencedirect.com/science/article/abs/pii/S0959652619306845)

150 C. Irambona and others, "Impacts of boreal hydroelectric reservoirs on seasonal climate and precipitation recycling as simulated by the CRCM5: A case study of the La Grande River watershed, Canada", 3 May 2017, Theoretical and Applied Climatology, Volume 131, link.springer.com/article/10.1007/s00704-016-2010-8

6.3 PRESERVATION OF CULTURE AND TRADITIONAL WAY OF LIFE AT RISK

Due to the combined impacts of climate change, forestry practices, hydroelectric projects and colonial policies that forced communities to be sedentary, the Innu people of Pessamit struggle to maintain their traditional way of life. This way of life is integral to their identity and cultural rights.

Traditional activities such as hunting, fishing, transportation and trapping are all affected. Some interviewees reported having to travel much further to hunt or fish because of changes to the topography. Emblematic species such as the caribou, a sacred animal for the Innu people, are endangered.¹⁵¹

"It's really an important animal. If there are no more caribou, I think there will be a danger that the Innu will disappear too."

Éric Kanapé, biologist, environmental adviser for the Territory and Resources of the Pessamit community.

Members of the Pessamit community state that they have stopped hunting caribou in order to ensure its survival, thereby ending an essential aspect of the community's culture and traditions.

In addition, decreased snow cover has caused the decrease of the cloudberry - or *chicoutai*¹⁵² – around Pessamit.

"The chicoutai is an element that has accompanied the Innu for thousands of years. It is a companion. That's why it's important. There is the know-how that is linked to this fruit. So the fact that we no longer have access to it is also a loss."

David Toro, environmental adviser at Mamuitun Tribal Council.

These limitations on traditional hunting and food gathering have increased the community's dependence on processed food from shops, further undermining their traditions and the food security they used to enjoy.

Other cultural activities are threatened too. Coastal erosion has forced the community to move an important annual celebration which was traditionally held at the water's edge.

"The celebration of August 15 marks the departure of our ancestors to the hunting grounds... We had to move to a safer place because the water was always moving forward."

Olivier Bacon, youth community member.

6.4 INDIGENOUS KNOWLEDGE AT RISK

Environmental changes affect Indigenous knowledge and its transmission to younger and future generations. For example, warmer winters affect the cleaning of animal skins, which requires cold temperatures, making it more difficult to pass on knowledge about trapping and preparing furs.

Changes in the landscape and meteorological unpredictability mean that elders are less able to travel within the territory. For example, the milder weather means they can no longer cross some lakes in the winter. As a result of these challenges, elders are less able to pass on their landmarks and knowledge to future generations.

"If you are no longer able to talk about your knowledge, there is a certain shame. You lose some dignity. Normally people expect you to be connected to your territory and the fact that you are not able to control your movement within your territory, you are undermining the dignity of the person."

David Toro, environmental adviser at Mamuitun Tribal Council.

¹⁵¹ La Presse, "L'atiku (le caribou) au cœur d'une relation millénaire", 26 April 2022, plus.lapresse.ca/screens/00af990c-56b7-488c-900c-9e6c438ffde4%7C_0.html

¹⁵² Scientific nomenclature: Rubus chamaemorus. See also Municipality of Rivière-au-Tonnerre, *Plan d'Action pour l'Adaptation aux Changements Climatiques Municipalité de Rivière-au-Tonnerre*, 21 November 2014, aruc.robvg.qc.ca/public/documents/rapports/index/plan_adaptation_rat_v2_21_nov_2014.pdf, p. 19.

Community members described a shift in the significance of elders' knowledge from instruction to historical record.

"If we look at Indigenous knowledge and climate change, there is some knowledge that will disappear.... There are climate changes that will [bring about] changes in terms of knowledge. It will no longer be knowledge that we have to teach people, but it will be knowledge that we will remember that it used to be like this, that it used to be like that."

Jean-Luc Canape, community member.

"To me, it was a heritage when you walked there and reflected that you had ancestors who had walked that same trail. The trail is no longer there. [It is] a loss of the language of the places, the names of the lakes. That's all lost."

Éric Kanapé, biologist, environmental adviser for the Territory and Resources of the Pessamit community.

"For me, it's the ability to use that coastline to teach children: look at what our ancestors did. It was going from that coastline into the Nushimit interior. That ability to recall. For us it's kind of like taking away your right to know your history."

David Toro, environmental adviser at Mamuitun Tribal Council.

In September 2022 the UN Human Rights Committee found that the Government of Australia had violated the human rights of the Torres Strait Islanders – an Indigenous group in Australia – by failing to adequately protect them from the impacts of climate change.¹⁵³ More specifically, the government violated their right to enjoy their culture and be free from arbitrary interferences with their private life, family and home. Individuals and community leaders from the Pessamit interviewed for this case study argue that climate change as well as hydroelectric projects and forestry practices have a similar impact on the rights to enjoy culture and to be free from arbitrary interferences with their private lives.

6.5 COMMUNITY'S DEMANDS

Members of the Pessamit community interviewed expressed not only their willingness to protect their whole territory, the Nitassinan and the reserve, but also their capacity to adapt and be resilient.

"We try to live with what happens. You know that hunters have always been very resourceful. When something happened, they were able to respond effectively to what was coming."

Jean-Marie Vollant, former Chief of the Pessamit Band.

The Innus Council of Pessamit (the council which presides over the reserve) works with universities to study the impact of climate change on their territory. The Innus Council of Pessamit also runs its own projects such as a programme to protect salmon – the Betsiamites River salmon restoration project – and a dedicated budget to monitor the Nitassinan which involves regular visits to the territory. It is also advocating with provincial authorities for the creation of an Innu-led protected area in the Pipmuakan region for the protection of Innu culture and the caribou.

"We have initiated [the creation of] a protected area. We have already submitted our protected area project, the Pipmuakan. We want to protect it. For the past 10 or 12 years, community or even individual hunting has been prohibited. We are trying to protect this species [the caribou], because it was one of the species that allowed us to be here today. Thanks to it, it has allowed us to survive in difficult times in the past."

Adélard Benjamin, project coordinator for Territory and Resources in Pessamit.

Members of the Pessamit community demand that federal and provincial authorities fully respect their rights and pay compensation for the loss of their use of the territory due to the activities of the forestry and hydroelectric industries, and the damages caused by these industries. They demand to be considered a key

¹⁵³ UN Human Rights Committee, Views Adopted by the Committee Under Article 5 of the Optional Protocol, concerning Communication, 22 September 2022, UN Doc. CCPR/C/135/D/3624/2019.

stakeholder in the planning and implementation of climate change adaptation policies and measures. They also want to be fully recognized as co-managers of the territory and resources of the Nitassinan on an equal footing with the Government of Quebec. They believe that their knowledge and its transmission is an important tool for climate justice.

Cultural rights of Indigenous peoples must be taken into account in climate change policy and measures at all levels of government.

7. INDIGENOUS PEOPLES IN YAKUTIA, RUSSIAN FEDERATION

7.1 INDIGENOUS PEOPLES' RIGHTS

The Arctic region of Yakutia (or Republic of Sakha), in the far north-east of Russia, is one of the coldest inhabited places on Earth. Almost half of Yakutia's population belongs to the Indigenous Yakut people, and about 4% to smaller Indigenous nations.¹⁵⁴ They are mostly engaged in traditional occupations such as fishing, hunting, gathering and reindeer herding and are dependent on the surrounding ecosystems for their food, livelihoods and culture.

The rights of Indigenous peoples in Yakutia to enjoy their own means of subsistence and development, and to engage freely in their traditional and other economic activities (reaffirmed by the UNDRIP) are severely threatened by climate change.¹⁵⁵ In addition, they have faced a history of colonization, racism and discrimination which compounds their present difficulties.¹⁵⁶

Indigenous peoples represent one of the poorest and most disenfranchised segments of Russian society and are generally excluded from decision-making processes.¹⁵⁷ Indigenous rights granted by Russia's Constitution and other federal legislation are not fully consistent with international standards. This is particularly evident in relation to Indigenous land rights,¹⁵⁸ which have been eroded by recent legislation.¹⁵⁹

¹⁵⁴ S. A. Sukneva, "Migration processes in Sakha Republic (Yakutia)", Espace populations sociétés, 2021, journals.openedition.org/eps/10352?lang=en Smaller Indigenous nations include the Evenks, the Evens, the Dolgan, the Yukaghirs and the Chukchi.

¹⁵⁵ Climate Scorecard, "The impact of climate change on Indigenous peoples has received little attention in Russia", 31 August 2020, climatescorecard.org/2020/08/the-impact-of-climate-change-on-indigenous-peoples-has-received-little-attention-in-russia/; Cultural Survival, Observations on the state of Indigenous Women's Human Rights in Russia, May 2021, culturalsurvival.org/sites/default/files/Russia%20CEDAW%20Report%202021%20FINAL.pdf

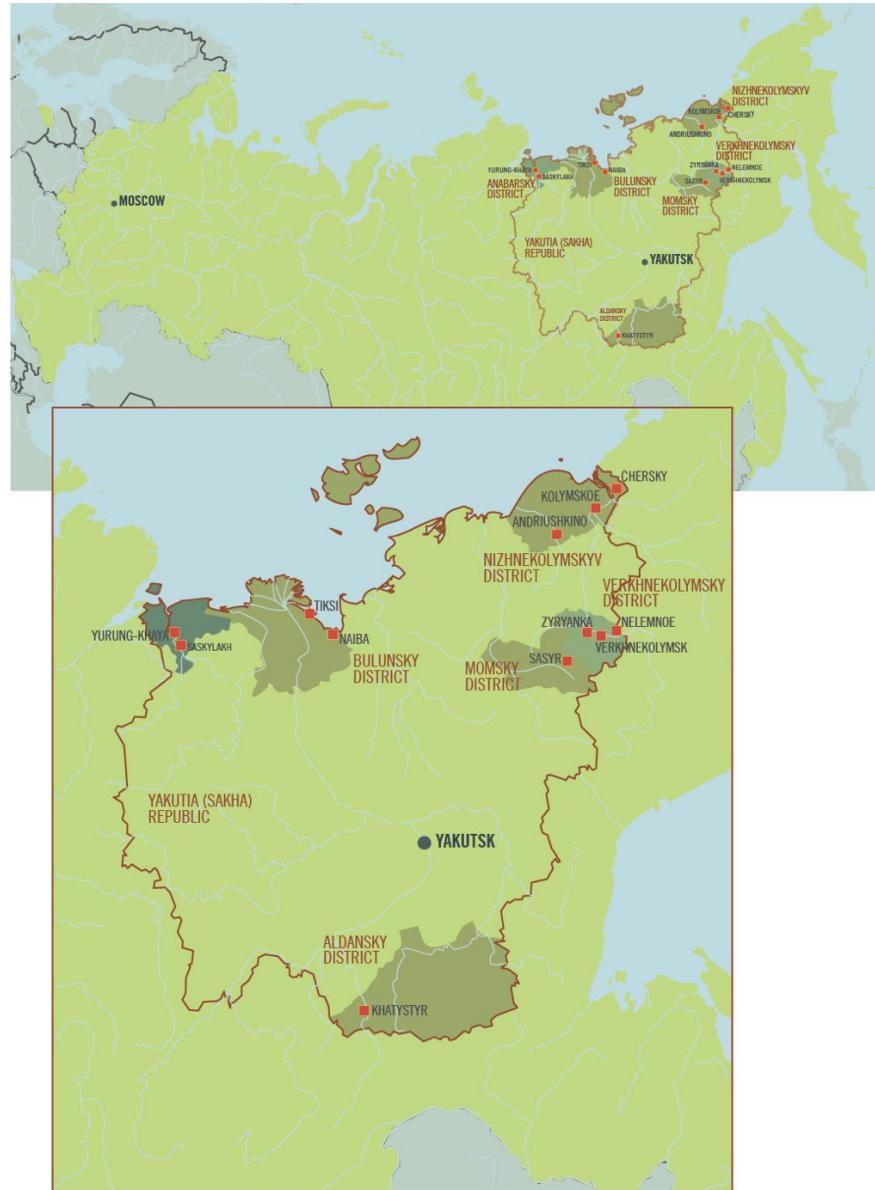
¹⁵⁶ Minority Rights Group, *Native peoples of the Russian far North*, 1992, academia.edu/32948900/Native_Peoples_of_the_Russian_Far_North; International Work Group for Indigenous Affairs (IWGIA), *Indigenous Peoples in the Russian Federation*, 2014, iwgia.org/images/publications/0695_HumanRights_report_18_Russia.pdf

¹⁵⁷ R. Garipov, "Indigenous Peoples' rights in Russian north: Main challenges and prospects for future development", 2020, Human Rights Brief, Volume 23, Issue 1, digitalcommons.wcl.american.edu/hrbrief/vol23/iss1/3

¹⁵⁸ For example, Article 8 of Russian Federal Law of 30 April 1999 Number 82-FZ "About Guarantees of the Rights of Indigenous Small-Numbered Peoples of the Russian Federation" states that the small Indigenous Peoples of the North have the right to "own and use, free of charge, various categories of land required for supporting their traditional economic systems and crafts". Even though Article 8 mentions the right to own land, this is limited to the right to continue to use land for traditional purposes. In contrast, (Article 13.2) of ILO Convention 169 emphasizes that "land" is understood to include the "concept of territories, which covers the total environment of the areas which the peoples concerned occupy or otherwise use". See I. Overland, "Indigenous rights in the Russian North", in E. Wilson Rowe (editor) *Russia and the North*, Ottawa: University of Ottawa Press, p. 172, 2009. Although the 2001 law on Territories of Traditional Nature Use (TTNU) is the only federal law affording some form of recognition of Indigenous peoples' land tenure, it has not been implemented.

¹⁵⁹ In 2017, the UN Committee on the Elimination of All Forms of Racial Discrimination (CERD) expressed concern that "new legislation, namely Federal Laws Numbers 171-FZ and 499- FZ dated 2014, have further weakened indigenous peoples land rights" See UN CERD,

RUSSIA



The Republic of Sakha has a more advanced legal framework to protect the rights of Indigenous peoples.¹⁶⁰ However, these laws are often not implemented due to inconsistency between national and federal laws, lack of implementing mechanisms, as well as the federal government's continued granting of resource extraction licences even in areas that the Sakha state recognizes as protected Indigenous territories.¹⁶¹

Concluding Observations on the Twenty-third and Twenty-fourth Periodic Reports of the Russian Federation, 20 September 2017, CERD/C/RUS/CO/23-24, para. 23(b). Similarly, the same year the UN Committee on Economic, Social and Cultural Rights (CESCR) expressed concern about “the amendment of April 2015 to the Land Code that empowers authorities to confiscate land at the request of third parties, particularly extractive industry companies, thereby potentially placing business interests above people’s right to an adequate standard of living (Article 11)”. See UN CESCR, *Concluding Observations on the Sixth Periodic Report of the Russian Federation*, 16 October 2017, E/C.12/RUS/CO/6, para. 48.

160 Law on subsoil of the Republic of Sakha (Yakutia) (1998), Number 29-II; On territories of traditional nature use and traditional economic activities of the indigenous numerically small peoples of the North of the Sakha Republic (Yakutia) (2006). N 370-3 N 755-III; Law “On the social responsibility of business”, 2010; Law on ethnological expertise in places of traditional residence and traditional economic activity of the indigenous peoples of the North of the Republic of Sakha, 2010, 820-3 Number 537-IV; Regulation on the procedure of organizing and conducting the assessment, 2011.

161 R. Garipov, “Indigenous Peoples’ rights in Russian north: Main challenges and prospects for future development, 2020, Human Rights Brief, Volume 23, Issue 1, digitalcommons.wcl.american.edu/hrbrief/vol23/iss1/3; B. Newman and others, “Arctic energy development and best practices on consultation with Indigenous Peoples, in *Boston University International Law Journal*, 2014, Volume 32,

7.2 CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION

Yakutia's average temperature has risen by around 2 to 3°C in recent years.¹⁶² Consequently, permafrost is rapidly thawing, increasing the likelihood of flooding, landslides, coastal erosion, sea-level rise and wildfires.¹⁶³ Indigenous peoples experience these impacts first-hand. Everyone interviewed for this case study observed an increase in rainfall and more frequent and intense floods. Indigenous settlements on coastlines and along riverbanks are particularly threatened by thawing permafrost, with faster water flow causing dramatic riverbank erosion.

"In the '60s, we clearly understood the seasons – if it's spring, then spring, if it's winter, then winter. And now we don't understand, and we can't determine in winter whether spring has come, and it's raining in the middle of winter and warming, the thaw in winter is dramatic. The climate is changing."

Chukcha resident of Meinyipilgyno, Anadyrsky District.¹⁶⁴

Interviewees reported unprecedented changes in the weather leading to warmer winters and snow in summer, changing dates for the first appearance of ice in winter, rapid changes in lake and river ice patterns, and more forest fires.

Wildfires in Yakutia have increased in intensity, burning vast swathes of forest.¹⁶⁵ The 2021 fire season was particularly devastating, lasting for 140 days and burning an estimated 8 to 9 million hectares.¹⁶⁶

"In the end the whole tundra dried out, we walk on the moss, and it crumbles under our boots, it's so dried out. That is why it caught fire. We had to change roaming route in order to bypass [the] burnt area. This is the first time this has happened. Even our grandfathers don't remember such things, they say."

Reindeer farmer, Anabarsky district.

The impact of climate change is compounded by the Russian federal government's plans to maximize extraction and production of oil and gas, which is becoming easier due to warmer temperatures and melting ice.¹⁶⁷ These plans have huge implications for Indigenous peoples in Yakutia and other Russian Arctic regions. Interviewees in Anabarsky, Nizhnekolymsky and Aldan districts shared their concerns about the rapid expansion and advancement of extractive industries towards Indigenous lands.

"We have been living here for thousands of years; despite changes, our ancestors have always found a way to adapt. But we won't be able to survive if we don't have our land."

Yukaghir elder, Chersky, Nizhnekolymsky District.

papers.ssrn.com/sol3/papers.cfm?abstract_id=2320796# E. Gladum and K. Ivanova, "Preservation of territories and traditional activities of the northern Indigenous Peoples in the period of the Arctic industrial development", in K. Latola and H. Savela (editors), *The Interconnected Arctic – UArctic Congress 2016*, Springer Polar Sciences, link.springer.com/content/pdf/10.1007/978-3-319-57532-2_14.pdf

162 J. Czerniawska and J. Chlachula, "Climate-change induced permafrost degradation in Yakutia, East Siberia", 2020, Arctic, Volume 73, number 4, <https://www.jstor.org/stable/10.2307/26991438>

163 J. Czerniawska1 and J. Chlachula, "Climate-change induced permafrost degradation in Yakutia, East Siberia", 2020, Arctic, Volume 73, number. 4, <https://www.jstor.org/stable/10.2307/26991438>

164 All interviews for this case study were conducted by the Center for Support of Indigenous Peoples of the North (CSIPN) on behalf of Amnesty International in October and November 2021. See Methodology in Chapter 1.

165 R. Glückler and others, "Holocene wildfire and vegetation dynamics in Central Yakutia, Siberia, reconstructed from lake-sediment proxies", 16 August 2022, Frontiers in Ecology and Evolution, 16 August 2022, frontiersin.org/articles/10.3389/fevo.2022.962906/full; L. Vinokurova and others, "When ice turns to water: Forest fires and Indigenous settlements in the Republic of Sakha(Yakutia)", 2022, Sustainability, Volume 14, Issue 8, [mdpi.com/2071-1050/14/8/4759](https://doi.org/10.3390/su14084759)

166 L. Vinokurova and others, "When ice turns to water: Forest fires and Indigenous settlements in the Republic of Sakha (Yakutia)", 2022, Sustainability, Volume 14, Issue 8, [mdpi.com/2071-1050/14/8/4759](https://doi.org/10.3390/su14084759)

167 Oil Capital, "Yakutia opens oil and gas resources", 10 December 2021, <https://oilcapital.ru/news/2021-12-10/yakutiya-otkryvaet-neftegazovye-resursy-1028446> On concerns related to the Arctic strategy, see Radio Free Europe Radio Liberty, "At risk: Russia's Indigenous Peoples sound alarm on loss of Arctic, traditional way of life", 28 November 2020, rferl.org/a/russia-arctic-indigenous-peoples-losing-traditional-way-life-climate-change/30973726.html



Burning forest at Gorny Ulus area, west of Yakutsk, in the Republic of Sakha, Russian Federation, 27 July 2021 © AFP via Getty Images

7.3 TRADITIONAL WAY OF LIVING AT RISK

The sustainability of Indigenous reindeer husbandry, hunting and fishing depends on the ability to predict the weather.

"The weather is essential for the traditional way of life of Indigenous peoples. Based on weather patterns, we determine where the reindeer will graze, where to set up a camp between migrations, when the snowstorm will come, when and where animals, birds and fish will migrate."

Chukcha resident of Kolymskoye, Nizhnekolymsky district.

However, the elders say that predicting the weather, especially long-term forecasts, has become nearly impossible. This increases the risks to Indigenous peoples' lives and safety.

"According to our beliefs, nature is rational and there is an explanation for everything. Perhaps nature is taking revenge on us because we mistreat it, we do not honour the customs of our ancestors. And nature does not trust us anymore."

Yukaghir resident of Chersky, Nizhnekolymsky district.

Reindeer have major cultural and economic significance for Indigenous peoples in Yakutia, where reindeer herding is a sustainable livelihood based on traditional knowledge.¹⁶⁸ Interviewees explained how changes in the migration routes of wild reindeer resulting from climate change cause serious losses to domestic herding, as wild reindeer trample pastures, bring diseases and kill or lure away domestic reindeer.¹⁶⁹ They reported increasing attacks by other wild animals such as wolves and bears on reindeer herds, a consequence of

¹⁶⁸ Anna Naykanchina, *Indigenous Reindeer Husbandry: The Impacts of Land Use Change and Climate Change On Indigenous Reindeer Herders' Livelihoods and Land Management, and Culturally Adjusted Criteria For Indigenous Land Uses*, May 2012, reindeerherding.org/images/projects/Nomadic_Herders/publications/UNPFII-2012-Reindeer-Husbandry_Final23Nov.pdf

¹⁶⁹ Anna Naykanchina, *Indigenous Reindeer Husbandry: The Impacts of Land Use Change and Climate Change On Indigenous Reindeer Herders' Livelihoods and Land Management, and Culturally Adjusted Criteria For Indigenous Land Uses*, May 2012, reindeerherding.org/images/projects/Nomadic_Herders/publications/UNPFII-2012-Reindeer-Husbandry_Final23Nov.pdf

these predators' increasing inability to find food in the wild. Some interviewees also explained how reindeer herders are being forced to leave coastal pastures because of the danger from polar bears, which are spending more time on land because of reduced ice cover.

The availability of lichen, an important food source for reindeer, is reduced by sudden temperature fluctuations causing thick layers of ice to build up.¹⁷⁰ Interviewees described how reindeer often break their legs trying to reach lichen, while the lack of food causes them to become exhausted and rapidly lose weight. Interviewees also reported that vast areas of reindeer pasture were destroyed by wildfires in Anabarsky and Nizhnekolymsky districts, and ash from wildfires reduced the quality of pasture in neighbouring territories. Many Indigenous hunting and fishing lodges were also burned down.

Fishing is another traditional livelihood and important food source. Winter and summer fisheries on the lakes and rivers enable survival in the coldest months of the winter.¹⁷¹ However, the fishing methods are fully dependent on proper ice conditions and the loss of winter ice and the earlier spring melt severely affect subsistence fishing.¹⁷²

"By November, there will be no fish at all. Hence, in order to prepare fish for the winter, we are forced to go fishing on thin ice and risk our lives."

Even fisherman, Tiksi village, Bulunsky district.

Sustainable livelihoods in Yakutia also depend on ice roads, which must be sufficiently thick to support the weight of vehicles. Warmer temperatures have decreased the safety and duration of these roads,¹⁷³ endangering access to passenger transportation, food, fuel and medical care.

7.4 FORCED DISPLACEMENT AND THE RIGHT TO CULTURE

Most of the last tundra Yukaghir dialect speakers live in the Yukaghir Indigenous community of Andryushkino.¹⁷⁴ In 2007, Andryushkino suffered the worst flooding in its history as the result of several factors including warmer air temperatures and permafrost thawing. People lost their homes and the community was evacuated. While many residents soon returned, flood damage persisted for years, including to some fishing grounds and reindeer pastures. Normal subsistence and work patterns only resumed in 2012.¹⁷⁵ Subsequent years have been marked by further flooding, inducing many to leave permanently. Remaining residents interviewed emphasized that the village has no future if the floods continue.

Researchers have pointed out that the depopulation of Andryushkino jeopardizes the preservation of local culture, including traditional knowledge and language; a culture which could completely disappear in the next century.¹⁷⁶

170 EuroNews, "How is climate change hurting reindeer populations in the Arctic?", 25 December, 2022, www.euronews.com/green/2020/12/25/how-is-climate-change-hurting-reindeer-populations-in-the-arctic

IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report: Cross-Chapter Paper 6 - Polar Regions, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_CCP6.pdf, pp. 2332 and 2342.

171 T. Mustonen and V. Shadrin, "The River Alazeya: Shifting socio-ecological systems connected to a northeastern Siberian river", 2021, Arctic, Volume 74, Issue 1, journalhosting.ucalgary.ca/index.php/arctic/article/view/72238

172 T. Mustonen and V. Shadrin, "The River Alazeya: Shifting socio-ecological systems connected to a northeastern Siberian river", 2021, Arctic, Volume 74, Issue 1, journalhosting.ucalgary.ca/index.php/arctic/article/view/72238

173 IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report: Cross-Chapter Paper 6 - Polar Regions, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_CCP6.pdf.

174 T. Mustonen and V. Shadrin, "The River Alazeya: Shifting socio-ecological systems connected to a northeastern Siberian river", 2021, Arctic, Volume 74, Issue 1, journalhosting.ucalgary.ca/index.php/arctic/article/view/72238, p.70

175 T. Mustonen and V. Shadrin, "The River Alazeya: Shifting socio-ecological systems connected to a northeastern Siberian river", 2021, Arctic, Volume 74, Issue 1, journalhosting.ucalgary.ca/index.php/arctic/article/view/72238, p. 80; T. Sakai and others, "Long-term flood damage by permafrost degradation in Siberia", 2012, IEEE International Geoscience and Remote Sensing Symposium, ieeexplore.ieee.org/document/6350474

176 T. Mustonen and V. Shadrin, "The River Alazeya: Shifting socio-ecological systems connected to a northeastern Siberian river", 2021, Arctic, Volume 74, Issue 1, journalhosting.ucalgary.ca/index.php/arctic/article/view/72238 p. 84.

7.5 HEALTH IMPACTS

Interviewees expressed concern that the thawing permafrost will unlock deadly pathogens such as anthrax, plague and smallpox, while contributing to the emergence of new diseases. They cited an anthrax outbreak in 2016 in the Yamal Peninsula, which caused the death of a boy, the hospitalization of more than 70 Indigenous nomadic herders and the deaths of more than 200,000 reindeer.¹⁷⁷ These fears are widespread¹⁷⁸ and well founded; the thawing permafrost soil, particularly where it exposes burial sites, poses a high risk of reactivating diseases of the past.¹⁷⁹

Similarly, interviewees expressed concern for the risk posed by the contamination of water sources as a consequence of thawing permafrost. For example, they described the discovery in 2018 of the remains of decomposed bodies near a drinking water source in Bykov village, Bulunsky district, after the local cemetery thawed.¹⁸⁰

Regular riverbank collapses caused by floods are contaminating river water with sediment, causing difficulties in accessing safe drinking water.

Interviewees also expressed concerns for their health related to the more frequent and intense forest fires, which force thousands of people to breathe toxic smog. In August 2021, data revealed alarming levels of air pollution in the regional capital, Yakutsk; an average of 107 times higher than the levels recommended by the World Health Organization.¹⁸¹

7.6 LIMITED COMPENSATION FOR LOSS AND DAMAGE

Interviewees expressed concern about the limited compensation received following recent disasters. Compensation for natural disasters comes from the state through insurance payments, but CSPIN researchers reported that Indigenous peoples were not consulted over the damage calculations commissioned by the government, meaning that insurance payments are often insufficient.

Similarly, other researchers reported that people affected by the 2021 fires have complained about the state overlooking non-economic and less tangible damages, like damage to health, stating that the health impacts of fires on the rural population are not properly recorded and monitored.¹⁸²

7.7 COMMUNITIES' DEMANDS

Indigenous residents interviewed for this report recognized that important measures had been taken by the Republic of Sakha to preserve Indigenous settlements and infrastructure. For example, construction standards have been changed to enhance stability and strengthen the foundations of houses against thawing permafrost. Other initiatives are underway to reduce coastal erosion in northern communities. The state provides subsidies and grants to protect traditional livelihoods, and new technologies are being introduced to monitor pastures and livestock.

However, interviewees also believed that additional measures are needed in consultation with Indigenous peoples, such as the implementation of protection measures in areas of severe coastal erosion in Nizhnekolymsky, Bulunsky and Verkhnekolymsky districts. They also suggested that the authorities could explore options for pasture rotation or other approaches to ensuring pastures are available for reindeer in

177 See The Guardian, "Anthrax outbreak triggered by climate change kills boy in Arctic Circle", 1 August 2016, [theguardian.com/world/2016/aug/01/anthrax-outbreak-climate-change-arctic-circle-russia](https://www.theguardian.com/world/2016/aug/01/anthrax-outbreak-climate-change-arctic-circle-russia)

IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report: Cross-Chapter Paper 6 - Polar Regions, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_CCP6.pdf, page 2340.

178 See for example, N. Dolois and J.P. Vanderlinde, "The perception of permafrost thaw in the Sakha Republic (Russia): Narratives, culture and risk in the face of climate change", 2020, Polar Science, Volume 26, [sciencedirect.com/science/article/pii/S1873965220301067](https://www.sciencedirect.com/science/article/pii/S1873965220301067)

179 Irene Huber and others, "Symposium report: emerging threats for human health – impact of socioeconomic and climate change on zoanthropos in the Republic of Sakha (Yakutia), Russia", 2020, International Journal of Circumpolar Health, Volume 79, Issue 1, tandfonline.com/doi/full/10.1080/22423982.2020.1715698

180 123ru.net, "Melted water washed away the burials in the old cemetery in Bykov Mys village, Bulunsky district, Yakutia, are being washed away", 28 September 2018, 123ru.net/yakutsk/167651124/

181 L. Vinokurova and others, "When ice turns to water: Forest fires and Indigenous settlements in the Republic of Sakha (Yakutia)", 2022, Sustainability, Volume 14, Issue 8, mdpi.com/2071-1050/14/8/4759

182 L. Vinokurova and others, "When ice turns to water: Forest fires and Indigenous settlements in the Republic of Sakha (Yakutia)", 2022, Sustainability, Volume 14, Issue 8, mdpi.com/2071-1050/14/8/4759, p.12

Sakha's Arctic zone. They also demanded innovative ways to monitor, prevent and respond to floods and forest fires.

They believe that Indigenous knowledge and science have much to offer to strengthen adaptation capacities and therefore suggested that the authorities organize workshops and provide other opportunities, in collaboration with Indigenous peoples, to facilitate the exchange of experiences on best adaptation practices.

They also requested that adequate compensation is available for damages to traditional livelihoods caused by natural disasters due to climate change-related impacts.

As stressed by several interviewees, respect of Indigenous peoples' land rights is paramount for the effective preservation of Indigenous cultures in the context of climate change.

8. MARGINALIZED COMMUNITIES IN FIJI

8.1 CLIMATE CHANGE IMPACTS ON RESIDENTS OF THE DALOUMANI SAFE HOME

Fiji is best known as a tropical paradise where warm and muggy weather is expected. However, it is battered by cyclones, floods, and droughts.¹⁸³ Most of Fiji's population and essential infrastructure are near the coast,¹⁸⁴ and the country is among those most vulnerable to the impacts of climate change. These include sea-level rise, increasing ocean acidification, coral bleaching, rising sea and air temperatures, more intense tropical cyclones, storm surges, droughts and changing rainfall patterns.¹⁸⁵

For example, in 2016, Fiji was hit by Tropical Cyclone Winston – the strongest ever recorded cyclone in the Southern Hemisphere – causing loss and damage exceeding 20% of the country's GDP.¹⁸⁶ Since then, Fiji has experienced four further category four and five (severe) cyclones.¹⁸⁷ Food, electricity and clean water supplies are typically disrupted during extreme weather events made more intense by climate change. When authorities are concerned about looting during or after a cyclone, an evening curfew is imposed, posing challenges for those who travel longer distances to sell food at markets, those who do shift work and sex workers.¹⁸⁸

Half of Fiji's population lives in urban areas, many in informal settlements with inadequate housing.¹⁸⁹ Houses in these communities are often poorly built and cannot withstand even the weakest tropical cyclones.¹⁹⁰ Residents are likely to face frequent displacement and increasing hardship with each successive severe weather event.

¹⁸³ UNFCCC, "How Fiji is impacted by climate change" , 9 February 2017, unfccc.int/news/how-fiji-is-impacted-by-climate-change

¹⁸⁴ IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report: Chapter 15 - Small Islands, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter15.pdf, p. 2064.

¹⁸⁵ This paragraph includes findings by the Pacific Climate Change Science Program, available at pacificclimatechangescience.org These findings also align with

¹⁸⁵ IPCC, "Climate Change 2022: Impacts, Adaptation and Vulnerability", Working Group II Contribution to the Sixth Assessment Report: Chapter 15 - Small Islands, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter15.pdf

¹⁸⁷ These are the strongest categories of tropical cyclones according to the Saffir-Simpson Hurricane Wind Scale. See Met Office, "Measuring tropical cyclones", metoffice.gov.uk/weather/learn-about/weather/types-of-weather/hurricanes/measuring

¹⁸⁸ See also for example, The Guardian, "Fiji imposes curfew ahead of Cyclone Yasa", 17 December 2020, theguardian.com/world/2020/dec/17/fiji-imposes-curfew-ahead-of-cyclone-yasa

¹⁸⁹ UN Habitat, Participatory Slum Upgrading, "Fiji", myps.org/countries/Fiji

¹⁹⁰ Fiji Sun, "Housing policy to reflect Fiji's climate conditions", 16 April 2021, fijisun.com.fj/2021/04/16/housing-policy-to-reflect-fijis-climate-conditions/

FIJI



Daulomani Safe House is one such community, and the plight of its residents is emblematic of the situation for many who have been forced into emergency shelters several times over the past few years. This case study was developed based on interviews with eight residents of Daulomani Safe House.

Far from the pristine beaches of Fiji, Edwina Biyau, a transgender woman, founded Daulomani Safe Home on the rural outskirts of Lautoka after she had experienced homelessness. Her goal was to provide a safe home for those who needed it. Daulomani means “place of love” in the Fijian language.¹⁹¹

At any given time, there are up to 70 residents in Daulomani Safe Home, including many people of diverse sexual orientation and gender identity, and people who were formerly homeless (sometimes described as “street-dwellers” in Fiji). Residents moved there for a variety of reasons, including lack of affordable housing,

¹⁹¹ Fiji Sun, “Daulomani safe home grateful for British envoy’s visit, NGO donations”, 29 January 2022, pressreader.com/fiji/fiji-sun/20220129/282016150717903

discrimination in housing and employment, or their home being destroyed by a cyclone. The residents support themselves through various activities including hairdressing, grass-cutting, sex work and selling home-grown produce.

Climate change affects the residents of Daulomani Safe Home in several ways.

Residents reported that increasing hot days and droughts make it harder for them to grow the traditional crops on which they rely for food and income. As a result, they try to grow crops that require less water. They also struggle to access sufficient and adequate quality of food immediately after cyclones because of increased prices and limited availability.

During these times, the community reduces its meat consumption to once per week. Edwina Biyau said that people need more awareness and training to address food insecurity resulting from the changing climate. One resident said:

"Right now, at least we could grow some food, but with the extreme changes, such as heatwave[s], food security for us as Indigenous peoples is severely affected. Even traditional knowledge of understanding and predicting weather patterns and when we would expect disasters/seasons has become a lost knowledge with the current generation [because of] the constant displacement of community members from their own villages."¹⁹²

Daulomani Safe Home is situated on land leased from Indigenous owners, and it was built by the residents themselves with corrugated iron and wood. The Safe Home does not have electricity; the residents use firewood for cooking and solar lighting. Although this style of informal housing is fairly common in rural and peri-urban Fiji, it is not adequate to protect residents from the harsh weather. As a result, the shelter is easily damaged in cyclone season, and residents have had to evacuate several times in recent years.

"The shelter that we live in has been rebuilt seven times [since 2016] because of the sustained damage from strong winds [during tropical cyclones] and also because it is not secure. We... had to go to the school evacuation centre."

Edwina Biyau.

During Tropical Cyclone Yasa in 2020, the community went to the evacuation centre (in this case, the local school, which is a sturdier building) but were given just one day's notice by the authorities to vacate the evacuation centre, even though the Safe Home had not yet been repaired. They were told to seek help from the Red Cross.



→ *Edwina Biyau, the transgender woman founder of Daulomani Safe Home. © Amnesty International*

192 The interviews in this case study were conducted by Amnesty International in October 2021. See Methodology in Chapter 1.

"[W]e have to constantly rebuild the house, which is a very costly exercise for us and a labour intensive task – especially when everything is destroyed and we have to start from scratch. Right now, we are struggling to purchase materials to complete the shelter we are building... when it rains, water floods into the shelter and men and boys have to move into the [women and girls'] shelter resulting in overcrowding and unhealthy living conditions."

Resident of Daulomani Safe Home.

Many of the people residing in the Daloumani Safe Home identify as gay and/or transgender. The gay and transgender people from Daulomani interviewed for this case study all work in the informal sector. (For comparison, 60% of the total working population of Fiji works in the informal sector).¹⁹³ In a group interview, residents explained that due to their sexual orientation and/or gender identity, they were already at the periphery of society, socially and economically.

Several people interviewed said they had at times relied on sex work to support themselves when they were unable to find work, particularly after natural disasters. Because of their work, they faced discrimination from the authorities both during and in the aftermath of disasters and find it increasingly challenging to rebuild their lives after each successive disaster.

"We experienced heavy flooding and a tropical cyclone, which laid bare the inequalities in our society, the poor basic services (health, infrastructure etc), [and] the over-dependence of our communities on certain industries which are fragile to disasters and pandemics."

Resident of Daulomani Safe Home.

"[F]or those of us who are already marginalized, times of disasters only deepen the inequalities and inequities that we are experiencing. Sex workers, LGBTQI [and] street dwellers are [some] of the most impacted with lack of access to resources."

Resident of Daulomani Safe Home.

"For LGBTQI community members – those who [had] jobs, suddenly find themselves out of work for prolonged periods of time [following cyclones], to the extent where some have been forced to make decisions such as selling sex for money. There are a lot of risks with sex work, because in Fiji, it's still criminalized and not regulated, so we'd hear cases of abuse by clients, sexual violence etc."

Resident of Daulomani Safe Home.

8.2 DISPROPORTIONATE CLIMATE IMPACTS BASED ON SEXUAL ORIENTATION AND/OR GENDER IDENTITY

Even though protection from discrimination is enshrined in Fiji's Constitution, the reality is that people of diverse sexual orientation and/or gender identity in Fiji experience high rates of stigma, discrimination¹⁹⁴ and harassment,¹⁹⁵ that may be heightened at times of disasters.¹⁹⁶

The people interviewed for this report said that they were sometimes blamed for natural disasters such as cyclones and the Covid-19 pandemic because of this identity, and that they disproportionately experienced harassment by the police and members of the community.¹⁹⁷

193 Repeka Nasiko, The Fiji Times, "Informal sector growth", 6 March 2021, fijitimes.com/informal-sector-growth/

194 See for example, UN Human Rights Council, *Working Group on the Universal Periodic Review* (34th Session), Summary of Stakeholder's Information, 22 August 2019, A/HRC/WG.6/34/FJI/3, pp. 17-19.

195 In a more extreme case of violence, a trans activist was murdered in Fiji in 2018 (see ABC News, "Murdered on International day against Transphobia: Fears Fiji killing is a hate crime", 23 July 2018, abc.net.au/news/2018-07-23/trans-woman-murdered-in-fiji-in-suspected-hate-crime/10026188) and in September 2017 a gay student was murdered (see Fiji Village, "Loved ones call for justice 1 year after Iosefo Qionitoga Magnus was brutally murdered", 22 September 2019, fijivillage.com/news/Loved-ones-call-for-justice-1-year-after-Iosefo-Qionitoga-Magnus-was-brutally-murdered--rs9k25/

196 Marisa Hutchinson, Open Global Rights, "Facing intersecting crisis: LGBTQI+ resilience in Fiji", 18 December 2020, openglobalrights.org/facing-intersecting-crisis-lgbtqi-plus-resilience-in-fiji/

197 Interviews with Daulomani Safe Home supported this, as did a report from Oxfam International and others, *Down by the River: Addressing the Rights, Needs and Strengths of Fijian Sexual and Gender Minorities In Disaster Risk Reduction and Humanitarian Response*, February 2018, edgeeffect.org/wp-content/uploads/2018/02/Down-By-The-River_Web.pdf



The temporary shelters at Daulomani Safe Home, with a corrugated iron roof and a tarpaulin wall on one side. Edwina hopes to build this into a more resilient shelter that can withstand future cyclones and accommodate the growing number of residents in the community.

© Amnesty International

“I have received a lot of statements and comments that blame us for causing disasters, even with Covid-19, when we are walking the streets, people call us ‘Covid, Covid’.... We are told that we are sinful, and that we are the cause of these [disasters].”

Edwina Biyau.

Residents of Daulomani Safe Home also reported that police harassment occurred during and after disasters, with curfews presenting an opportunity for police to detain or question them.¹⁹⁸ A resident described being released just prior to curfew and having to spend the night in a bus shelter, as there was no transport available to get home before the curfew began.

“We are constantly harassed by security officers pre- and post-disasters. They would make us get into trucks and detain us until closer to curfew hours.”

Resident of Daulomani Safe Home.

Participants did not describe personal experiences of physical or sexual violence in evacuation centres, but they did express concerns for their safety and privacy in such centres.¹⁹⁹

“Over the past few climate disasters, we have also heard of reports from neighbouring communities where LGBTQI people don’t feel safe accessing the evacuation centres... there have also been reports of sexual and gender-based violence and abuses happening in these evacuation centres [against] the LGBTQI community.”

Gay resident of a community near the Daulomani Safe Home.

In addition, they reported being unable to access support to help them recover from climate-induced impacts and being pushed into poverty and social exclusion.²⁰⁰ For example, Fiji often allows people to access pension funds early as a means of self-insurance against climate-induced natural disasters.²⁰¹ The caveat is that only people working in the formal sector or making voluntary contributions in the informal sector will have funds to access. Bureaucracy and institutional discrimination can create additional barriers to access to financial support such as government disaster or relief payments.

“Most of us work in the informal sector with lack of social protections to cover us during times of disasters. While others are easily able to access recovery packages from government, these are not easily accessible for us. Societal stigma and discrimination often impede accessibility of key services to us.”

Resident of Daulomani Safe Home.

8.3 COMMUNITY’S DEMANDS

Fiji has formally committed to undertake a “gender and human rights-based approach to adaptation planning”, explicitly mentioning the full involvement of low-income and otherwise disadvantaged groups, including LGBTI people, in decision-making.²⁰² Fiji’s National Climate Change Policy explicitly mentions that

198 Five of the people interviewed at Daulomani Safe Home claimed they had been detained by the police for around 48 hours before being released in town close to the beginning of curfew time.

199 This was also corroborated by the Oxfam International and others on the experiences of sexual and gender minorities in disaster risk responses, *Down by the River: Addressing the Rights, Needs and Strengths of Fijian Sexual and Gender Minorities In Disaster Risk Reduction and Humanitarian Response*, February 2018, edgeeffect.org/wp-content/uploads/2018/02/Down-By-The-River_Web.pdf

200 Oxfam International and others, *Down by the River: Addressing the Rights, Needs and Strengths of Fijian Sexual and Gender Minorities In Disaster Risk Reduction and Humanitarian Response*, February 2018, edgeeffect.org/wp-content/uploads/2018/02/Down-By-The-River_Web.pdf

201 International Monetary Fund, *Self-insurance Against Natural Disasters: The Use of Pension Funds in Pacific Island Countries*, 6 July 2018, <https://www.imf.org/EN/PUBLICATIONS/WP/ISSUES/2018/07/06/SELF-INSURANCE-AGAINST-NATURAL-DISASTERS-THE-USE-OF-PENSION-FUNDS-IN-PACIFIC-ISLAND-COUNTRIES-45972>

202 Republic of Fiji, *National Adaptation Plan: A Pathway Towards Climate Resilience*, 2018, 4.unfccc.int/sites/NAPC/Documents/Parties/National%20Adaptation%20Plan_Fiji.pdf, pp. 38-39

"an inclusive approach will be used to ensure that policy design, activities and investments take into account the differing needs and vulnerabilities of all social groups".²⁰³

However, according to the people interviewed for this report, more needs to be done to include consultation and engagement with marginalized and minority groups, including people of diverse sexual orientation and/or gender identity.

"All we hear is that the government frequently talks about leaving no one behind... but here we are – left behind. That's the reality."

Resident of Daulomani Safe Home.

While people mentioned varying degrees of government support,²⁰⁴ many felt the voices of people of diverse sexual orientation and/or gender identity were not always included in formulating disaster risk responses. Edwina Biyau and other residents want greater opportunities to be included in decisions at levels of government that affect their lives and livelihoods, particularly when it comes to climate adaptation, resilience and disaster response.

"We want a better standard, quality of living, including a clean and safe environment that can accommodate street dwellers. We hope that there will be increased support in the area of food security, so we can grow climate-resilient crops and also be able to strengthen our capacity, so we can advocate for our rights."

Edwina Biyau.

²⁰³ Republic of Fiji, *National Climate Change Policy 2018-2030*, 2019, policy.thinkbluedata.com/sites/default/files/Republic%20of%20Fiji%20National%20Climate%20Change%20Policy%202018-2030.pdf, p.30.

²⁰⁴ The community reached out to the Fiji District Council of Social Services (DCOSS) to get support for water access and DCOSS connected them to NGOs to provide water tanks. They were also contacted by the Fiji National Disaster Management Office when they were staying in the emergency shelter and were told to seek support from the Red Cross. The community has also received support from NGOs such as Friend Fiji, the Red Cross and Rotary International.

9. EXTREME HEAT IN AUSTRIA AND SWITZERLAND

9.1 CLIMATE CHANGE AND EXTREME HEAT IN EUROPE

Heatwaves are generally defined as a period of abnormally hot weather, relative to the expected conditions at that given time and place.²⁰⁵ Climate change is making heatwaves more frequent, longer and hotter around the world and will further increase heat extremes as global warming intensifies.²⁰⁶ Europe is no exception,²⁰⁷ and has been identified as a hotspot for heatwaves in the northern mid-latitudes.²⁰⁸ Prolonged hot and dry periods increase the risk of major wildfires in Europe.²⁰⁹

In 2022, Europe experienced its hottest summer on record, with multiple heatwaves, record-breaking temperatures, drought and wildfires in several countries.²¹⁰ Many European countries have experienced increasing heatwaves in recent decades.²¹¹

Heatwaves are among the deadliest extreme weather events. During Europe's 2003 heatwave, more than 70,000 people were reported to have died as a consequence of heat extremes across 12 countries. Subsequent heatwaves have also killed thousands of people. Preliminary data from the 2022 heatwave suggests that 16% more deaths were recorded in July in EU countries compared with the monthly averages for 2016-2019.²¹²

205 IPCC, *Special Report: Global Warming of 1.5°C, Glossary*, 2018, ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_AnnexI.pdf; MetMatters, "Heatwaves", 28 June 2021, www.rmets.org/metmatters/heatwaves

206 IPCC, *Climate Change 2021: The Physical Science Basis, Working Group I Contribution to the Sixth Assessment Report, Summary for Policymakers*, 2021, ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf, para. A.3.1; World Weather Attribution, "Human contribution to the record-breaking July 2019 heatwave in Western Europe", 2 August 2019, worldweatherattribution.org/human-contribution-to-the-record-breaking-july-2019-heat-wave-in-western-europe/

207 IPCC, *Climate Change 2021 – The Physical Science, Working Group II contribution to the Sixth Assessment Report*; Regional Fact Sheet – Europe, August 2021, ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Europe.pdf; IPCC, *Climate Change 2022 -Impacts, Adaptation and Vulnerability, Working Group II Contribution II to the Sixth Assessment Report: Chapter 13 - Europe*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter13.pdf, p. 1854.

208 E. Rousi and others, "Accelerated western European heatwave trends linked to more-persistent double jets over Eurasia", 4 July 2022, *Nature Communications*, Volume 13, [nature.com/articles/s41467-022-31432-y](https://doi.org/10.1038/s41467-022-31432-y)

209 See European Environment Agency, "Forest fires in Europe", 18 November 2021, eea.europa.eu/ims/forest-fires-in-europe. A dozen European countries suffered major fires between June-July 2022, which overall burned the second biggest area since records began in the continent. See Reuters, "Wildfires in Europe burn second-biggest area on record", 4 August 2022, [reuters.com/world/europe/wildfires-europe-burn-second-biggest-area-record-2022-08-04/](https://www.reuters.com/world/europe/wildfires-europe-burn-second-biggest-area-record-2022-08-04/)

210 Copernicus, "Summer 2022 Europe's hottest on record", 8 September 2022, climate.copernicus.eu/copernicus-summer-2022-europes-hottest-record

211 R. Zhang and others, "Increased European heatwaves in recent decades in response to shrinking Arctic sea ice and Eurasian snow cover", 2020, *NPJ Climate and Atmospheric Science*, Volume 3, [nature.com/articles/s41612-020-0110-8](https://doi.org/10.1038/s41612-020-0110-8)

212 EuroStat, "Excess mortality hits +16%, highest 2022 value so far", 16 September 2022, ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220916-1

AUSTRIA AND SWITZERLAND



9.2 EXTREME HEAT IN AUSTRIA AND SWITZERLAND

The regions that surround the Mediterranean Sea are affected by some of the most severe increases in temperature extremes worldwide.²¹³ Even in landlocked Austria and Switzerland, average temperatures have already increased by 2°C.²¹⁴ As a consequence, both countries are seeing more heatwaves and increasing frequency and intensity of hot days and nights.²¹⁵ Heat stress is greatest in low-lying urban areas with high population densities. Austria's capital, Vienna, is experiencing more hot days compared to rest of Austria²¹⁶ as Vienna is particularly vulnerable to heatwaves.²¹⁷ Without effective measures to mitigate climate change, the number of hot days are expected to increase by up to 60 to 80 per annum in Austria.²¹⁸ In Switzerland, Lugano and Geneva appear to be more strongly affected.²¹⁹ It is estimated that with every additional degree Celsius increase in the average temperature in Switzerland, the number of very hot days will double.²²⁰

In Switzerland, excess mortality²²¹ of around 1,000 deaths was estimated to have occurred during the 2003 heatwave; with 800 excess deaths in 2015, 200 in 2018, and 500 in 2019.²²² In Austria, the 2003 heatwave resulted in approximately 180 deaths in Vienna alone,²²³ while 550 died in 2018 across Austria.²²⁴ While exact figures for the 2022 heatwaves are yet to be published, preliminary statistics reveal an excess mortality of 25.9% in Switzerland and 17.5% in Austria in the month of July. This excess mortality is greater than the same months over the past two years, suggesting that it was driven in part by the heatwaves and not Covid-19.²²⁵

9.3 IMPACTS OF EXTREME HEAT ON MOST AFFECTED GROUPS

The impacts of heatwaves are being felt most strongly by older people, people with certain disabilities and underlying health conditions, and people experiencing homelessness or living in inadequate housing or older buildings. Among the above groups, lower-income, socially isolated urban residents are particularly at risk.

Heat extremes also impact the right to work and people's rights at work, since they reduce the hours that people can work and cause occupational health issues and workplace injuries. The IPCC estimated that

213 Swiss Confederation, National Centre for Climate Services (NCCS), "More hot days", accessed on 28 October 2022, nccs.admin.ch/nccs/en/home/climate-change-and-impacts/swiss-climate-change-scenarios/key-messages/more-hot-days.html

214 Austrian Panel on Climate Change (APCC), *Österreichischer Sachstandsbericht 2014 - Austrian Assessment Report, 2014 (AAR14)*, 2014, ccca.ac.at/wissenstransfer/apcc/aar14, p. 228; Swiss Confederation, Federal Office for the Environment (OFEV), "Climate Change", <https://www.bafu.admin.ch/bafu/en/home/topics/natural-hazards/info-specialists/hazard-situation-and-land-use/climate-change.html>

215 Austrian Panel on Climate Change (APCC), (2014), *Österreichischer Sachstandsbericht 2014 - Austrian Assessment Report 2014 (AAR14)*, 2014, ccca.ac.at/wissenstransfer/apcc/aar14, p. 228; Swiss Confederation, National Centre for Climate Services, "More hot days", last accessed 28 October 2022, nccs.admin.ch/nccs/en/home/climate-change-and-impacts/swiss-climate-change-scenarios/key-messages/more-hot-days.html

216 Vienna experienced an average of 20.1 heat days a year from 1991 to 2020. This is above the national average, which was 15 days in 2019. See Global 2000, "Klimawandel in Österreich", www.global2000.at/klimawandel-oesterreich/Stadt_Wien/Wiener_Hitzaktionsplan_2022.pdf, p. 17, wien.gv.at/umwelt/cooleswien/hitzeaktionsplan.html

217 C. Tapia and others, "Profiling urban vulnerabilities to climate change: An indicator-based vulnerability assessment for European cities, Ecological Indicators", July 2017, Volume 78, [sciencedirect.com/science/article/pii/S1470160X17301036](https://doi.org/10.1016/j.ecolind.2017.04.036)

218 Zentralanstalt für Meteorologie und Geodynamik (ZAMG), "Massive zunahme an hitzetagen", 2022, zamg.ac.at/cms/de/klima/news/massive-zunahme-an-hitzetagen

219 S. A. Vaghefi and others, "Future trends in compound concurrent heat extremes in Swiss cities - An assessment considering deep uncertainty and climate adaptation options", December 2022, Weather and Climate Extremes, Volume 38, [sciencedirect.com/science/article/pii/S2212094722000809?via%3Dihub](https://doi.org/10.1016/j.wace.2022.100597)

220 Swiss Confederation, National Centre for Climate Services, "More hot days", accessed on 28 October 2022, nccs.admin.ch/nccs/en/home/climate-change-and-impacts/swiss-climate-change-scenarios/key-messages/more-hot-days.html

221 Excess mortality is derived from statistical analysis comparing deaths during an extreme heat event to the typical projected number of deaths for the same time period based on historical records.

222 A. Saucy and others, "The role of extreme temperature in cause-specific acute cardiovascular mortality in Switzerland: A case-crossover study", 10 October 2021, Science of the Total Environment, Volume 790, [sciencedirect.com/science/article/pii/S0048969721030291](https://doi.org/10.1016/j.scitotenv.2021.148969)

223 Hans-Peter Hutter and others, "Heatwaves in Vienna: Effects on mortality", 2007, Wien Klin Wochenschr, Volume 119, <https://pubmed.ncbi.nlm.nih.gov/17492349/>

224 AGES, "Informationen zu hitze", accessed on 28 October 2022, ages.at/umwelt/klima/informationen-zu-hitze

225 Eurostat, "Excess mortality by month", accessed on 21 October 2022, ec.europa.eu/eurostat/databrowser/view/demo_mexrt/default/table?lang=en

each of the major European heatwaves led to considerable economic losses in agriculture and construction and reduced GDP in Europe by between 0.3% and 0.5%.²²⁶

9.3.1 IMPACT ON OLDER PEOPLE AND PEOPLE WITH DISABILITY

Extreme heat causes heat cramps, heat exhaustion, heatstroke and hyperthermia (abnormally high body temperature). It worsens chronic diseases, such as respiratory and cardiovascular illnesses and increases hospitalizations. Pre-existing mental ill-health has been found to increase mortality during heatwaves.²²⁷

Older people are more likely to have health conditions that put them at risk of heat-related illnesses and death. Conditions that can affect an older person's ability to keep cool include, among others, Parkinson's disease and Alzheimer's disease, as well as certain medications that may cause dehydration. Older people are also more likely to live alone and be less physically able to care for themselves.²²⁸

Older women are more likely to die during heatwaves than men, although the specific reasons are yet to be confirmed.²²⁹ In Switzerland, a study found that older women, particularly those with a lower socio-economic position and lower level of education, are at higher risk for heat-related mortality linked to cardiovascular disorders.²³⁰

In 2016 a group of older Swiss women formed the Senior Women for Climate Protection (KlimaSeniorinnen) Association and sued the Swiss government for its failure to take adequate action to reduce greenhouse gas emissions and therefore protect the rights of older women. The association is supported by Greenpeace Switzerland and currently consists of 2,000 women.²³¹ Rosmarie Wydler-Wälti, co-president of the KlimaSeniorinnen Association and one of the plaintiffs in the case said:

"I know women even younger than me who are suffering because of the heat, they have respiratory problems and heart problems. We found out from medical studies that women over 75 are particularly affected compared to men, as we cannot sweat as much as men. It is more difficult for us to cool down.... When it's very hot, the government tell older people to stay at home.... This recommendation cannot be a solution because then they go on in producing too much CO₂."²³²

Several of the plaintiffs provided evidence in court of how their health is affected as a consequence of heatwaves.

"Some people don't understand our fight as they say we are old and we will die anyway. But my father was 99 and my mother 93 when they died. So I could have another 25 years to live. I don't want to die earlier because of heatwaves."

Rosmarie Wydler-Wälti, Switzerland.

226 IPCC, *Climate Change 2022 -Impacts, Adaptation and Vulnerability, Working Group II Contribution to the Sixth Assessment Report: Chapter 13 - Europe*, February 2022, , ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter13.pdf, p. 1863.

227 European Environment Agency, *Unequal Exposure and Unequal Impacts: Social Vulnerability to Air Pollution, Noise and Extreme Temperatures in Europe*, 2018, eea.europa.eu/publications/unequal-exposure-and-unequal-impacts

A. Bouchama and others, "Prognostic factors in heat wave-related deaths", 12 November 2007, Arch Intern Med, Volume 167, Issue 20, jamanetwork.com/journals/jamainternalmedicine/fullarticle/413470

228 European Environment Agency, *Unequal exposure and unequal impacts: social vulnerability to air pollution, noise and extreme temperatures in Europe*, 2018, p. 15.

229 Y. van Steen and others, "Sex differences in mortality after heat waves: Are elderly women at higher risk?", 2019, International Archives of Occupational Environ Health, Volume 92, pubmed.ncbi.nlm.nih.gov/30293089/ M. A. Folkerts and others, "Sex differences in temperature-related all-cause mortality in the Netherlands", 2022, International Archives of Occupational Environ Health, Volume 95, ncbi.nlm.nih.gov/pmc/articles/PMC8755659/

230 A. Saucy and others, "The role of extreme temperature in cause-specific acute cardiovascular mortality in Switzerland: A case-crossover study", 10 October 2021, Science of the Total Environment, Volume 790, sciencedirect.com/science/article/pii/S0048969721030291

231 KlimaSeniorinnen Schweiz, "Climate action - climate seniors to sue Switzerland before the European Court of Human Rights", 2022, www.klimaseniorinnen.ch/english/. Following dismissal of the case by the Swiss Federal Tribunal, the plaintiffs brought the case to the European Court of Human Rights in December 2020. The Court accepted the case in March 2021 and subsequently relinquished it to the Grand Chamber.

232 All interviews for this case study were conducted by Amnesty International between March and July 2022.

Younger people with disabilities and pre-existing health conditions are also affected by extreme heat. For example, people with spinal cord injuries may be less able to sweat to regulate their body temperature.²³³ About 60-80% of people suffering from multiple sclerosis are affected by Uhthoff's syndrome, meaning that the symptoms of their disease worsen as external temperatures increase.²³⁴

In the case of *Mex M. v Austria*, a 42-year-old man with multiple sclerosis and Uhthoff's syndrome brought a lawsuit in 2021 against the Austrian government before the European Court of Human Rights for failing to combat climate change and thus failing to comply with its obligation to protect his health and well-being, therefore violating his right to family and private life.²³⁵ He described to Amnesty International Austria how, as the temperature rises past 25°C, his muscular movement becomes more impaired, obliging him to use a wheelchair and confining him to his home for increasingly longer periods of time, forcing him to live an isolated family and private life. He said:

"The heat waves affect me. It gets hotter more often now... My limitations come from my condition and not from climate change. But climate change influences my mobility even more. By affecting my mobility, many other things are affected as well. My social life is severely limited because of it.... I can't get anywhere that easily anymore".

9.3.2 IMPACT ON PEOPLE EXPERIENCING HOMELESSNESS

"It's insane. You have to experience the heat as a homeless person."

Woman experiencing homelessness in Vienna, Austria.

Interviews conducted by Amnesty International Austria in Vienna show how people experiencing homelessness are at particular risk from heat extremes. Those experiencing homelessness are particularly exposed to heat as they do not have their own home in which to shelter and often live in urban environments where temperatures are higher.

"There is a need for more trees. Concrete is heating up. Then you are exposed to the heat from below and above."

Man experiencing homelessness, Vienna.

People experiencing homelessness often carry their belongings around all day or wear extra layers, further exposing them to heat stress. It can be difficult to access drinking water, showers and cool spaces.

Ajoki Kalo, a nurse at the neunerhaus Health Care Center, a social organization providing healthcare services to people experiencing homelessness or people who do not have health insurance, explained that people experiencing homelessness often prefer to sleep in daylight because the risk of theft of their belongings is lower. Rough sleepers may then end up with heat stroke or sunburn, which can have severe consequences for their health.

"Recently, we just had a case of a severe sunburn here. Second-degree burns on both lower legs. The wound care was particularly important in this case. The person was in the target group, alcoholic/drug-addicted. In the case of burns, the skin barrier is no longer intact. This allows bacteria to penetrate. This is dangerous on the street."

Stephan Leick, general practitioner and medical director, neunerhaus Health Care Center, Vienna.

233 Shirley Ryan Ability Lab, "Spinal cord injury complications: Temperature regulation," 14 May 2022, srab.org/lifecenter/resources/spinal-cord-injury-complications-temperature-regulation M.J. Price and M. Trbovich, "Thermoregulation following spinal cord injury", 2018, Handbook of Clinical Neurology, pubmed.ncbi.nlm.nih.gov/30459042/#:~:text=Spinal%20cord%20injury%20results%20in,whether%20heat%20balance%20is%20achieved

234 S. L. Davies and others, "Thermoregulatory dysfunction in multiple sclerosis", 2018, Handbook of Clinical Neurology, [sciencedirect.com/science/article/abs/pii/B9780444640741000422](https://www.sciencedirect.com/science/article/abs/pii/B9780444640741000422)

235 LSE, *Mex M v Austria*, https://climate-laws.org/geographies/austria/litigation_cases/mex-m-v-austria and Europäische Klimaklage, "Schutz vor der Klimakrise muss einklagbar werden", accessed on 28 October 2022, klimaklage.fridaysforfuture.at/



A homeless person lies by the pond in front of the Karlskirche, Vienna, Austria, 20 July 2022. © Alamy Stock Photo

Accessing shady areas is difficult as people are frequently moved on by the police.

"We move into the shadow at the other side of the street. Then the police come and tell you, that we have to go back to that side, into the sun!"

Man experiencing homelessness, Vienna, Austria.

Even though Vienna has a number of day centres – including some targeted to specific groups, such as women or youth²³⁶ – strict house rules might hinder people experiencing homelessness from accessing them.²³⁷ People interviewed by Amnesty International Austria also noted that protective measures, such as sun cream, are not sufficiently available:

"One would need a least one litre sun cream during the day. That cannot cost that much. Water, water, water. I am not asking for alcohol."

Man experiencing homelessness, Vienna.

People's health is often already degraded as a consequence of homelessness. Healthcare professionals explained that their patients often live with chronic heart conditions, leg oedema, blood circulation problems, digestive problems, malnutrition and mental health conditions. Alcohol addiction is also very common. Heat-related health impacts observed in people experiencing homelessness include symptoms of heat stress such as dizziness, headaches and nausea, as well as dehydration, sunburns and increased infections.

²³⁶ Amnesty International, "If Housing Was a Human Right, I Wouldn't Live Like This": Barriers to Accessing Homeless Assistance Services in Austria (Index: EUR 13/5458/2022), 7 April 2022, amnesty.org/es/documents/eur13/5458/2022/en/#:~:text=Austria%3A%20%E2%80%9Cif%20housing%20was%20a%20human%20right%2C%20I,International%20Austria%20focussing%20on%20poverty%20and%20human%20rights, p. 35.

²³⁷ Amnesty International, "If Housing Was a Human Right, I Wouldn't Live Like This": Barriers to Accessing Homeless Assistance Services in Austria (Index: EUR 13/5458/2022), 7 April 2022, amnesty.org/es/documents/eur13/5458/2022/en/#:~:text=Austria%3A%20%E2%80%9Cif%20housing%20was%20a%20human%20right%2C%20I,International%20Austria%20focussing%20on%20poverty%20and%20human%20rights, pp. 43-44.

“The heat worsens nearly every illness. Sick people get sicker during hot days, especially cardiovascular diseases, kidney diseases and leg oedema deteriorate.”

Stephan Leick, general practitioner and medical director, neunerhaus Health Care Center, Vienna.

These health impacts are magnified as homelessness people experience in society have limited access to healthcare in Austria. Reasons include lack of health insurance or additional barriers when accessing the healthcare system that relate to stigmatization and discrimination that people experience in society homeless.²³⁸

The impacts of heatwaves on people experiencing homelessness continue to be overlooked by Austrian authorities, compared with action taken to protect against extreme cold. While in winter, authorities put in place so-called “winter packages” which provide additional places in emergency shelters and are accessible for any person sleeping rough, similar measures are not activated during heatwaves.²³⁹ Although the Vienna Heat Action Plan adopted in May 2022 identifies people experiencing homelessness as among the groups most at risk,²⁴⁰ concrete measures have yet to be implemented. Moreover, the government has so far failed to adopt a national housing strategy.²⁴¹

“In winter, I can go [to the shelter] because it is cold, but not in summer, because it is warm?!”

Man experiencing homelessness, Vienna.

²³⁸ Amnesty International, “*If Housing Was a Human Right, I Wouldn’t Live Like This”: Barriers to Accessing Homeless Assistance Services in Austria* (Index: EUR 13/5458/2022), 7 April 2022, amnesty.org/es/documents/eur13/5458/2022/en/#:~:text=Austria%3A%20%E2%80%9CIf%20housing%20was%20a%20human%20right%2C%20International%20Austria%20focussing%20on%20poverty%20and%20human%20rights, p. 17.

²³⁹ Amnesty International, “*If Housing Was a Human Right, I Wouldn’t Live Like This”: Barriers to Accessing Homeless Assistance Services in Austria* (Index: EUR 13/5458/2022), 7 April 2022, amnesty.org/es/documents/eur13/5458/2022/en/#:~:text=Austria%3A%20%E2%80%9CIf%20housing%20was%20a%20human%20right%2C%20International%20Austria%20focussing%20on%20poverty%20and%20human%20rights, p. 40

²⁴⁰ City of Vienna, Vienna Heat Action Plan, 2022, <https://www.wien.gv.at/umwelt/cooleswien/hitzeaktionsplan.html>, p. 36.

²⁴¹ Amnesty International, “*If Housing Was a Human Right, I Wouldn’t Live Like This”: Barriers to Accessing Homeless Assistance Services in Austria* (Index: EUR 13/5458/2022), 7 April 2022, amnesty.org/es/documents/eur13/5458/2022/en/#:~:text=Austria%3A%20%E2%80%9CIf%20housing%20was%20a%20human%20right%2C%20International%20Austria%20focussing%20on%20poverty%20and%20human%20rights, p. 17.

10. LESSONS FROM THE CASE STUDIES

This collection of case studies provides a clear picture of how the climate crisis is affecting the enjoyment of human rights of people around the world, and how discrimination, marginalization, environmental degradation, local planning decisions and other factors can deepen human rights harm.

Even though each case study is different due to the local context, they show the challenges faced by communities in similar settings and by specific marginalized groups.

The cases of south-western Bangladesh, western Honduras and Saint-Louis in Senegal are particularly emblematic of the severe impact on the rights to life, health, adequate housing, work and an adequate standard of living faced by impoverished and marginalized coastal communities. The cases of the Innu community of Pessamit in the Canadian province of Quebec and of Indigenous peoples in Yakutia, Russian Federation, are illustrative of the distinctive impacts that the climate crisis has on Indigenous peoples who depend on the environment, particularly on their cultural rights and their traditional way of life. The cases of Austria and Switzerland show how the rights of older people, people with disabilities and people experiencing homelessness are particularly at risk from more frequent and severe heat extremes in Europe. The case of the residents of the Dalourmani Safe Home in Fiji serves as an example of the impacts of climate change on marginalized people living in informal settlements with inadequate housing, as well as of the additional burden suffered by people with diverse sexual orientation and/or gender identity as the consequence of stigma and discrimination.

The stories included in this report also point to the urgency and duty of states to take all feasible measures to prevent foreseeable human rights harms caused by climate change and to provide remedy for the harms caused.

10.1 STATE FAILURE TO REDUCE CLIMATE CHANGE IS VIOLATING HUMAN RIGHTS

As the case studies show, at the current level of about 1.1°C average global warming above pre-industrial levels,²⁴² extreme weather events and slow-onset events are threatening the rights to life, health, housing, work and an adequate standard of living, as well as the rights to culture and traditional way of life of Indigenous peoples, among others. Every fraction of a degree increase in global warming will aggravate such impacts.

²⁴² The IPCC calculated that global surface temperature was 1.09 [0.95 to 1.20] °C higher in 2011–2020 than 1850–1900. See IPCC, *Climate Change 2021 – The Physical Science, Working Group II contribution to the Sixth Assessment Report, Summary for Policymakers*, August 2021, ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf, para A.1.2. In 2022, the World Meteorological Organization estimated that the 2018–2022 global mean temperature average (based on data up to May or June 2022) is estimated to be 1.17 ± 0.13 °C above the 1850–1900 average. See WMO and others, *United in Science 2022: A Multi-Organization High-Level Compilation of the Most Recent Science Related to Climate Change, Impacts and Responses, 2022*, library.wmo.int/index.php?lvl=notice_display&id=22128#.Yy2UfxbMKUn



Mrs Francis Asuzena Cruz stands on the remains of what used to be her house in Cedeño, Honduras, October 2022. According to her she lost about 2 million lempiras worth of investment. This is the equivalent to roughly 80,000 USD. © David Estrada/Amnesty International

These impacts are the result of insufficient action by states and business enterprises to reduce climate change, given that incontrovertible evidence of climate change and its harms has been available for decades. Despite the commitments made under the Paris Agreement and human rights treaties, states are failing to reduce emissions at a pace compatible with protecting human rights. In particular, states have failed to phase out the use and production of fossil fuels, despite evidence of the harmful impact of the continued burning of fossil fuels.²⁴³

Each state that fails to take all feasible steps to the full extent of their abilities to reduce GHG emissions within the shortest possible time-frame violates its human rights obligations. However, wealthier countries have the obligation to reduce emissions faster than others. The failure of states, and particularly of wealthier countries, to take all feasible steps to the full extent of their abilities to reduce greenhouse gas emissions within the shortest possible time-frame, both nationally and through international cooperation, is a violation of human rights.

10.2 CLIMATE CHANGE INCREASES THE RISK OF DISPLACEMENT

The plight of some of the millions of households that are displaced following extreme weather events each year, or who face the threat of displacement, is illustrated by several of the case studies. The Internal Displacement Monitoring Centre calculated that 22.3 million people were internally displaced due to weather-related events in 2021 alone.²⁴⁴

The cases of Bangladesh, Honduras and Senegal also reveal how climate change and environmental degradation pile additional pressures on already impoverished and marginalized populations living in coastal areas. While many people interviewed for this report affirmed their desire not to leave their homes, land and

²⁴³ Amnesty International, “Urgent fossil fuels phase-out critical to protect rights”, 4 April 2022, amnesty.org/en/documents/ior40/5405/2022/en/; The Lancet Countdown on health and climate change: health at the mercy of fossil fuels, October 2022, [the lancet.com/journals/lancet/article/PIIS0140-6736\(22\)01540-9/fulltext](https://the lancet.com/journals/lancet/article/PIIS0140-6736(22)01540-9/fulltext)

²⁴⁴ Internal Displacement Monitoring Centre, *Global Report on Internal Displacement 2022*, May 2022, internal-displacement.org/publications/2022-global-report-on-internal-displacement

countries, many see no solution other than migration to cope with living conditions that are becoming increasingly difficult. Some move internally towards bigger cities; others across borders, temporarily or permanently. Some transnational migration entails perilous journeys, with migrants at risk of trafficking and exploitation. Migration also has important consequences for those who stay, as community networks are disrupted, and women are often left to shoulder the economic support and care of entire households.

"We want to live here for as long as we can. However, we do not know for how long we can stay."

Monoranjan Sarkar, resident of Banshipur, Bangladesh.²⁴⁵

The experiences described underline the imperative for states not only to step up climate action to reduce the likelihood and extent of climate-related displacement but also to put in place effective protection measures for people displaced internally and across borders in the context of climate change. Enhancing safe and regular migration pathways is also an essential measure to protect the security of those who live in climate change affected areas.²⁴⁶

10.3 CLIMATE JUSTICE MUST GO HAND IN HAND WITH ECONOMIC, SOCIAL, RACIAL AND GENDER JUSTICE

These case studies also provide a clear illustration of how climate change rarely acts in isolation. Its impacts are magnified by economic, social, political and cultural factors that compound pre-existing situations of marginalization, discrimination, colonization and oppression.

For example, almost all cases show how climate change adds additional strain to communities who already suffer environmental degradation caused by economic activities, such as oil and gas extraction in Yakutia; forestry and hydroelectric dams in the ancestral territory of the Innu of Pessamit in Canada; shrimp farming and mangrove destruction in Bangladesh and Honduras; and overfishing in Bangladesh, Honduras, and Senegal.

In Bangladesh, Senegal and Honduras, women explained how extreme weather events are particularly onerous for them. Due to discrimination, gender inequality and patriarchal structures, women often bear the burden of housework and family care, and consequently suffer disproportionately in conditions of food and water scarcity.

In Fiji, several interviewees provided testimonies of the disproportionate impacts of climate change that people of diverse sexual orientation and/or gender identity suffer. As the result of stigma and discrimination, they are at heightened risk of being excluded from assistance, being provided inappropriate assistance, or being subject to harassment.

In the case of the Indigenous peoples of Pessamit, Canada, and in Yakutia, Russian Federation, the impacts of climate change and environmental degradation are magnified by a history of colonialism, racism and discrimination towards Indigenous peoples. In particular, the testimonies gathered show how the denial of land rights for ancestral territory and failure to fully respect their right to free, prior and informed consent leave Indigenous peoples without effective mechanisms to exercise their right to self-determination and to a remedy.

"We are consulted for the sake of it. We propose new ways of doing things but we are not listened to. We are not taken seriously."

Éric Kanapé, Pessamit, Canada.²⁴⁷

The case of people experiencing homelessness in Austria shows that climate change and the increasing frequency and intensity of heat extremes result in a further deterioration of their health. However, authorities continue to overlook these human rights risks as a result of the stigmatization of homelessness.

²⁴⁵ Interview conducted by Nagrik Uddyog on behalf of Amnesty International, October 2021.

²⁴⁶ For an analysis of states' obligations to safeguard the rights of people displaced or at risk of displacement in the context of the climate crisis, see Amnesty International, *Stop Burning Our Rights! What Governments and Corporations Must Do To Protect Humanity From the Climate Crisis* (Index: POL 30/3476/2021), 7 June 2021, pp. 116-122, <https://www.amnesty.org/en/documents/pol30/3476/2021/en/>

²⁴⁷ Interview conducted by Amnesty International Canada francophone, October 2021.



A group of female farmers participating in a training on how to grow saline-resistant crops, Satkhira, Bangladesh, September 2021
© Farhan Hossain/Amnesty International

In sum, these stories reveal that climate change is a threat multiplier. If women, Indigenous peoples, people living in poverty, older people, people with disabilities, people experiencing homelessness, people of diverse sexual orientation and/or gender identity, among others, are particularly affected by climate change impacts it is not because they are inherently vulnerable. It is because they face marginalization and discrimination. This makes them more likely to be on the frontlines of climate disasters, and less likely to have access to quality governmental support in the aftermath of disaster. Moreover, in the context of social and political dislocation accompanying climate events, they may bear the brunt of public anger or administrative disruption, such as the case of community and police harassment of people of diverse sexual orientation and gender identity in Fiji.

Climate justice cannot be achieved without economic, social, racial and gender justice.²⁴⁸ Ensuring that those most impacted by the climate crisis have adequate mechanisms to participate in decisions that affect their lives, including climate change response measures, is central to this.

“Vulnerability at different spatial levels is exacerbated by inequity and marginalization linked to gender, ethnicity, low income or combinations thereof, especially for many Indigenous peoples and local communities. Present development challenges causing high vulnerability are influenced by historical and ongoing patterns of inequity such as colonialism, especially for many Indigenous peoples and local communities.”²⁴⁹

²⁴⁸ See for example UN Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance, Report on ecological crises and racial justice, 25 October 2022, UN Doc. A/77/2990; UN Committee on the Elimination of Discrimination against Women (CEDAW), General Recommendation 37: Gender-related Dimensions of Disaster Risk Reduction in the Context of Climate Change, 7 February 2018, UN Doc. CEDAW/C/GC/37.

²⁴⁹ IPCC, *Climate Change 2022 - Climate Impacts, Adaptation and Vulnerability, Working Group II contribution to the Sixth Assessment Report, Summary for Policymakers*, February 2022, ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf, para B.2.4.

10.4 COMMUNITIES ARE RESOURCEFUL BUT NEED MORE SUPPORT FROM AUTHORITIES TO ADAPT

The case studies reveal the resourcefulness of communities who are taking adaptive measures in the face of the climate emergency, often with very limited means and support from the authorities. For example, in Canada the Innu people of Pessamit are undertaking projects to protect species such as caribou and salmon. Residents of the Dalourmani Safe Home grow crops that require less water and they consume less meat to cope with food shortages and reduced income in times of drought or after cyclones. In Honduras, women are leading initiatives at the local level. For example:

"We make requests to the mayor to plant candelillas [for mangrove reforestation]. Our group is called Friends of the Gulf, we are only women. Our activities are to go to plant candelillas and then cut them [for replanting], there are institutions that pay us to plant them. We go to sow in almost all the Gulf."

Woman residing in Guapinol, Honduras.²⁵⁰

However, in most cases, these measures are not commensurate with the scale of the crisis and communities are left exposed to the worst impacts of the climate crisis, magnified by deep-rooted economic, social, gender and racial injustice. Many of the people interviewed in different countries demanded additional measures from the authorities to help them to better adapt and survive adverse climate impacts. They also demanded to be included in the planning and implementation of such measures.

Moreover, the case of the canal opened in Saint-Louis, Senegal, to limit the harm of sea-level rise demonstrates how poorly conceived adaptation projects can result in additional human rights harms to local communities.

Under the Paris Agreement and human rights law, states have an obligation to establish adequate and human rights-consistent adaptation measures to assist those within their jurisdiction to adapt to the foreseeable and unavoidable effects of climate change, thus minimizing the impact of climate change on their human rights.²⁵¹ States who need assistance to put in place adequate and human rights-consistent adaptation measures must request it, and those states in a position to do so must provide the necessary financial resources, capacity-building and technology transfer to support people to adapt to climate change.²⁵²

10.5 STATES MUST PROVIDE ADEQUATE AND DEDICATED SUPPORT FOR LOSS AND DAMAGE

The human rights impacts of climate change described in this report are examples of the enormous losses and damage that communities face around the world as the consequence of the climate crisis.

Some harm fits into the definition of "economic loss and damage"²⁵³ such as destruction of or damage to homes and infrastructure and losses of livelihoods. Others are examples of "non-economic loss and damage",²⁵⁴ such as loss of life and health, displacement, and loss of Indigenous culture and way of life, languages and knowledge. Recognizing and assessing the scope and extent of all kinds of loss and damage with full participation from affected communities and Indigenous peoples is essential for achieving climate resilience and providing effective remedies. When assessing the loss and damage caused by climate change-related events, and especially non-economic losses, states must consider the adverse effects of

250 Interview conducted by FIAN Honduras on behalf of Amnesty International, July 2021.

251 OHCHR, "Five UN human rights treaty bodies issue a joint statement on human rights and climate change", 16 September 2019, ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=24998&LangID=E; UN Human Rights Committee, Views Adopted by the Committee Under Article 5 of the Optional Protocol, concerning Communication Number 3624/2019, 22 September 2022, UN Doc. CCPR/C/135/D/3624/2019, para 8.3.

252 For an analysis of states' obligations to adopt human rights-consistent adaptation measures, see Amnesty International, *Stop Burning Our Rights! What Governments and Corporations Must Do To Protect Humanity From the Climate Crisis* (Index: POL 30/3476/2021), 7 June 2021, pp. 89-92, amnesty.org/en/documents/pol30/3476/2021/en/

253 Economic losses can be understood as the loss of resources, goods and services that are commonly traded in markets.

254 Non-economic losses can be understood as the remainder of items that are not commonly traded in markets.

climate change on the enjoyment of human rights, such as the rights to life, health, food, adequate housing, education, work, culture and self-determination.²⁵⁵

Some of the stories featured in this report illustrate the failure of governments to provide adequate support in the face of loss and damage resulting from extreme weather events and other climate change-related impacts. As a consequence, people facing loss and damage are often left to fend for themselves. For example, in the South Bedkashi union in Bangladesh, many people lived in makeshift houses or in the ruins of their flooded homes for three years after Cyclone Aila in May 2009. Poorer households in Honduras rarely have access to national disaster insurance schemes or to post-disaster reconstruction funding. In Fiji, a key coping mechanism – early access to pension funds as a means of self-insurance against climate-induced natural disasters – is not available to people working in the informal sector. Several people interviewed in Bangladesh, Honduras and Senegal reported having to resort to migration or to borrowing money from private individuals, often at extortionate interest rates, as the only way to mitigate loss of livelihoods following disasters. However, this further pushes them into poverty, forces family members to migrate and exposes them to exploitative schemes, including forced labour.

As these examples illustrate, a key measure needed to adequately address loss and damage in all countries is setting up or expanding adequate social protection mechanisms. For example, measures such as income support and employment guarantees can significantly increase the resilience of people dealing with loss and damage, protect their human rights and prevent communities from falling into a spiral of poverty.²⁵⁶ Similarly, social protection measures ensuring access to adequate healthcare and food are crucial to protect the rights of communities at risk of climate shocks and facing loss and damage.

The fact that people around the world lack access to support measures and effective remedies for loss and damage, including compensation, is a major injustice. Due to inequalities among countries and the long-lasting consequences of colonialism, people in lower-income countries are particularly exposed to loss and damage, while having contributed the least to the climate crisis.

All states must provide adequate support to people under their jurisdiction facing loss and damage. However, less wealthy countries must seek international cooperation and assistance when they are unable to put in place adequate measures to protect human rights. Equally, based on the duty of international cooperation, all states in a position to provide resources have the obligation to do so in order to respect, protect and fulfil human rights. Based on their human rights obligation to provide an effective remedy, all states are collectively responsible for loss and damage. Wealthy countries that have contributed the most to climate change and those with the most available resources have a heightened obligation to provide resources and redress for loss and damage.²⁵⁷

“Our politicians [in wealthy countries] always forget that we are responsible for what is happening in poorer countries. They are dying. In Africa, for example, often there are droughts or otherwise floods that take houses away. In many countries it is no longer possible for people to see a future, they have to flee to other countries. We [in wealthy countries] are the ones who have caused their troubles.”

Rosmarie Wydler-Wälti, Switzerland.²⁵⁸

255 Amnesty International and the Center for International Environmental Law, “Submission in response to the call for input by the Special Rapporteur on the promotion and protection of human rights in the context of climate change”, June 2022, amnesty.org/en/documents/ior40/5773/2022/en/

256 Rosa Luxembourg Stiftung and Action Aid, Avoiding the Climate Poverty Spiral: Social Protection to Address Climate-Induced Loss and Damage, January 2021, actionaid.org/sites/default/files/publications/Avoiding%20the%20climate%20poverty%20spiral_0.pdf; International Trade Union Confederation, *The Role of Social Protection in a Just Transition*, 2018, ituc-csi.org/IMG/pdf/role_of_social_protection_in_a_just_transformation_en.pdf.

257 For an analysis of states’ obligations to adopt human rights-consistent adaptation measures, see Amnesty International, *Stop Burning Our Rights! What Governments and Corporations Must Do To Protect Humanity From the Climate Crisis* (POL/30/3476/2021), 7 June 2021, pp. 107-110, amnesty.org/en/documents/pol30/3476/2021/en/; ESCR-Net, Human Rights and Climate Change Working Group and Loss and Damage Collaboration, What does a human rights-based approach to addressing loss and damage look like? Key demands for the outcomes of COP 27 at the intersection of loss and damage and human rights, 1 November 2022, <https://www.lossanddamagecollaboration.org/stories/what-does-a-human-rights-based-approach-to-addressing-loss-and-damage-look-like>

258 Interview conducted by Amnesty International, March 2022.

11. CONCLUSIONS AND RECOMMENDATIONS

“I believe that if a state recognizes human rights, it should respect them and avoid violating them, therefore it should not take steps that exacerbate climate change or that do not combat climate change.”

Mex M, Austria²⁵⁹

CONCLUSIONS

The climate change impacts demonstrated in the stories featured in this report do not only affect remote communities or marginalized groups. Each case study is a microcosm of the rights, obligations and future of the whole of humanity.

The breadth of countries and contexts illustrated in this report show how truly pervasive, global and urgent the climate crisis is. These stories of affected communities help to illustrate the daily lived reality behind the climate data produced by scientific studies.

They are also testament to the collective failure of states to take decisive action to protect people's human rights from the climate crisis. Had states taken all the steps to the full extent of their abilities to reduce greenhouse gas emissions and to support people to adapt, ever since the causes and harms of climate change became known, much hardship and suffering would have been averted. This is why the loss and damage suffered by individuals and communities as the result of the climate crisis, such as those described in this report, are human rights violations that must be remedied.

Most importantly, the stories that people shared with us for this report are a call to action. They speak to the urgency of meeting the obligations outlined in international human rights treaties and climate agreements. They urge all people in positions of power – particularly state actors, international governmental organizations and the private sector – to put communities, human rights and humanity above their particular interests.

We also need decisive political action to decarbonize our economies and societies as quickly and as fairly as possible. This will require confining fossil fuels to the history books and designing an energy transition that redresses inequalities. Wealthy states must reduce emissions faster than other countries and provide sufficient funding to developing states to enhance their decarbonization and to support people to adapt to the impacts of the climate crisis. Loss and damage resulting from the climate emergency must be promptly

²⁵⁹ Interview conducted by Amnesty International Austria, April 2022

assessed through human rights law, principles and standards and remedied, including through the provision of finance by countries and companies most responsible for those harms. There is no other way out of the climate crisis for humanity.

RECOMMENDATIONS

RECOMMENDATIONS TO ALL STATES

- Protect people by urgently reducing greenhouse gas emissions. In particular, all states must review their 2030 emission reduction targets and ensure they are fully aligned with the imperative of keeping the rise of global average temperatures below 1.5°C. They should phase out the production and use of all fossil fuels – coal, oil and gas – as quickly as possible based on their capacities and responsibility for emissions and in a way that delivers a just and human rights-consistent transition to all, with the full participation of the most affected workers, groups and communities.
- Adopt and implement human rights-consistent adaptation measures that adequately protect people from the foreseeable and unavoidable impacts of the climate crisis. In particular, they must take into account the needs and requirements of different groups in the design and implementation of climate change adaptation and disaster-risk reduction strategies and give priority to the most marginalized groups, communities and individuals; address gender and racial power imbalances; and engage respectfully with Indigenous peoples and other local communities in order to request their help in sharing their traditional knowledge and science of climate change mitigation and adaptation.
- Ensure that measures intended to protect people from the effects of climate change do not result in the violation of other human rights and that the transition to decarbonized and more resilient economies and societies is just, fair and inclusive for all, contributing to correcting existing imbalances in terms of enjoyment of and access to rights.
- Guarantee the rights to information and participation in decision-making to all and particularly to peoples, groups and communities most affected by the climate crisis, climate response measures and other economic and development activities that can impact on their human rights.
- Fully implement the rights of Indigenous peoples, including their rights to self-determination, land and free, prior and informed consent, and recognize Indigenous knowledge and science.
- Conduct inclusive and participatory loss and damage needs assessments considering the adverse effect of climate change on the enjoyment of human rights and ensuring that individuals and groups most affected are fully able to participate.
- Provide adequate resources to address loss and damage, ensuring all responses to loss and damage are inclusive, intersectional, gender-responsive and promote equality for peoples and individuals who are already marginalized.
- Scale up and systematize universal social protection schemes that are accessible to everyone, adequate, gender-responsive, inclusive of the most marginalized, and adjusted to both slow-onset and sudden climate-related challenges at the national level and within the UNFCCC.
- Establish an international finance facility for loss and damage to provide timely means, support and remedy, including compensation, to people and communities, including Indigenous peoples, whose human rights have been negatively affected as the result of loss and damage caused by the climate crisis.
- Ensure any new financing facilities provide for the meaningful participation of the most affected groups, including women, Indigenous peoples, children and other marginalized groups, particularly those facing multiple and intersecting forms of discrimination, in both policy design and implementation.
- In addition to what is enumerated above, safeguard the human rights of people displaced or at risk of displacement, including by:
 - Ensuring that, if permanent planned relocations become necessary as a measure of last resort to protect people from the unavoidable impacts of climate change (for example, when areas have

become too dangerous for human habitation), the human rights of both the displaced people and the host communities are respected, protected and fulfilled throughout the relocation process;

- Fulfilling obligations under international law in relation to the rights of internally displaced persons and ensuring that these are reflected in domestic laws and policies;
- Enhancing safe and regular migration pathways that respect, promote and realize human rights, including labour rights, in line with international law, and providing a wide range of mobility opportunities, such as work visas and visas for educational purposes or family ties; and,
- Ensuring, including by amending domestic legislation, that relevant authorities take into account the risk of human rights violations caused by the impacts of climate change when deciding admission and when reviewing claims for international protection. Governments should not remove people to any place where they would face a real risk of human rights violations as a result of the adverse effects of climate change.

RECOMMENDATIONS TO WEALTHY INDUSTRIALIZED COUNTRIES

- Reduce emissions faster to avoid imposing unreasonable expectations on developing countries. In particular, adopt and implement the most ambitious emission reduction targets possible that would enable them to reduce emissions by half well before 2030 and reach zero carbon emissions by 2030 or as soon as is feasible after that while ensuring a just transition that enhances human rights.
- Phase out fossil fuels and shift to renewable energy produced consistently with human rights obligations by 2030 or as soon as possible after that; end fossil fuel subsidies immediately; prohibit, in law and practice, further investments to expand fossil fuel exploration, extraction and production in their territory; and end the financing of fossil fuel projects in other countries.
- Commit new and additional climate finance to less wealthy countries for human rights-consistent mitigation and adaptation measures in order to reach the USD 100 billion annual goal for 2022 and provide USD 500 billion between 2022-2025 to make up for earlier gaps.
- Ensure that climate funding is additional to existing commitments for overseas development assistance, that climate finance to low-income countries is in the form of grants, not loans, and that a better balance is achieved between mitigation and adaptation funding.
- Provide additional and dedicated financial means, technical support and access to remedy, including compensation, to people in developing countries whose rights have been negatively affected as the result of loss and damage caused by the climate crisis.

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CONTACT US

 info@amnesty.org

 +44 (0)20 7413 5500

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ANY TIDAL WAVE COULD DROWN US

STORIES FROM THE CLIMATE CRISIS

The climate crisis is upon us. Despite repeated scientific warnings, state climate action is lagging far behind what is needed to protect human rights.

This report showcases communities' experiences in seven brief case studies to provide a snapshot of how climate change negatively affects the enjoyment of human rights in different contexts, particularly of those who are marginalized, neglected or oppressed. It features stories, lived experience and demands of affected groups in Austria and Switzerland, Bangladesh, Canada, Fiji, Honduras, the Russian Federation and Senegal.

The stories of suffering and hardship featured in this report are a call to action. They show the urgency of putting communities, human rights and humanity above short-term financial and political interests.

All states must step up their climate change mitigation and adaptation efforts to protect human rights. They must also provide adequate financing; technical support; and access to remedy, including compensation to people whose rights have been harmed by the climate crisis. Having contributed the most to climate change and possessing the greatest resources, wealthy industrialized states have a heightened obligation to reduce emissions at a faster pace and to provide funding to support lower-income countries to reduce their carbon emissions, adapt to climate change, and remedy the loss and damage stemming from climate change.