



UNCOUNTED

INVISIBLE DEATHS OF OLDER PEOPLE AND CHILDREN
DURING CLIMATE DISASTERS IN PAKISTAN

AMNESTY
INTERNATIONAL



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First published in 2025 by Amnesty International Ltd
Peter Benenson House, 1 Easton Street, London WC1X 0DW, UK



Cover photo:

Children standing near a graveyard, some graves unmarked, in the wake of a flood. Illustration by Colin Foo © Amnesty International

Index: ASA 33/9007/2025
Original language: English

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KEY TERMS

ACRONYMS

| | |
|---------------|---|
| BISP | Benazir Income Support Programme |
| CEDAW | UN Convention on the Elimination of All Forms of Discrimination Against Women |
| COP | The Conference of the Parties of the UNFCCC, its governing body, more commonly known as COP |
| CRC | UN Convention on the Rights of the Child |
| DDMA | District Disaster Management Authority |
| DHQ | District Headquarter hospitals |
| ICCPR | International Covenant on Civil and Political Rights |
| ICESCR | International Covenant on Economic, Social and Cultural Rights |
| IHHN | Indus Health & Hospital Network |
| IPC | Integrated Food Security Phase Classification |
| IPCC | Intergovernmental Panel on Climate Change |
| NADRA | National Database and Registration Authority |
| NAP | National Adaptation Plan |
| NDC | Nationally Determined Contribution |
| NDMA | National Disaster Management Authority |
| NIC | National Identity Card |
| NOC | No Objection Certificates |
| PCAP | Pakistan Cooling Action Plan |
| PDMA | Provincial Disaster Management Authority |

| | |
|----------------|--|
| PKR | Pakistani Rupee |
| UHI | Universal health insurance |
| UN OCHA | UN Office for the Coordination of Humanitarian Affairs |
| UNFCCC | UN Framework Convention on Climate Change |
| UNICEF | UN Children’s Fund |
| WHO | World Health Organization |

GLOSSARY

Adaptation: adaptation measures seek to reduce the predicted future harms of climate change.

Flood-related deaths: flood-related deaths can be associated with various causes. As explained in the methodology of this report, causes of death most relevant to flooding include drowning, trauma, diarrhoea, infectious diseases (such as water- and mosquito-borne illnesses like cholera, malaria, and dengue), respiratory issues, maternal and neonatal deaths (see definition below)

Heat-related deaths: as explained in the methodology to this report, heat is rarely listed as a direct cause of a death; extreme heat puts strain on the cardiovascular system, particularly in those with preexisting conditions, making a heart attack, stroke, or other adverse health outcomes more likely. Therefore, causes of death that were deemed potentially heat-related in this report included respiratory, cardiovascular, liver-related, neonatal, and maternal conditions.

Heatwave: while there is no universally agreed-upon definition, the World Meteorological Organization defines a heatwave as a period of significantly high temperatures lasting at least two consecutive days.

Loss and damage: this is the unavoidable impacts of climate change that cannot be prevented by mitigation and adaptation measures. Those suffering loss and damage have a right to remedy, including financial compensation. Remedy for loss and damage should be seen as a form of reparation.

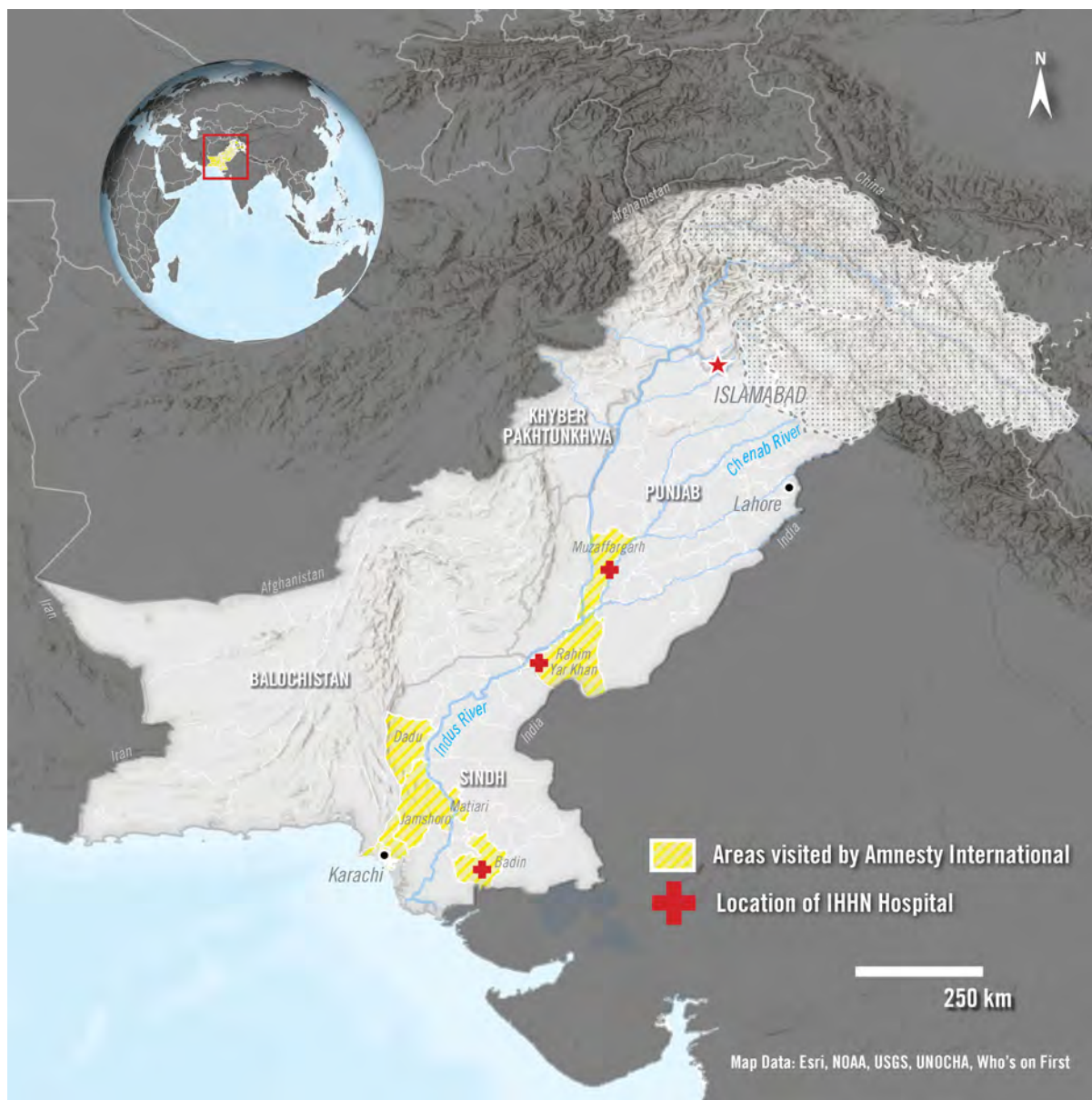
Mitigation: mitigation efforts are intended to reduce greenhouse gas emissions in order to limit global warming and associated climate change.

National Adaptation Plan: this plan provides an overview of the country’s climate risks and vulnerabilities as well as adaptation strategies and priorities.

Nationally Determined Contribution: commitments that countries make to reduce their greenhouse gases as part of climate change mitigation.

Neonatal deaths: a neonate is any child under 28 days old. Causes most commonly related to the death of a neonate include premature birth, birth complications, neonatal infections and congenital anomalies.

MAP



EXECUTIVE SUMMARY

A tragic fact of the climate crisis is that, in country after country, those who contributed least to global warming are witnessing its most harmful consequences. Pakistan, which contributes just over 1% of greenhouse gas emissions globally, is the fifth-most vulnerable country to climate disasters in the world. Rising temperatures in Pakistan drive more intense and unpredictable weather. In 2022, Pakistan experienced record heatwaves, with much of the country reaching 50°C. These above-average temperatures directly fuelled greater rainfall during the monsoon season. In August of the same year, some provinces of Pakistan received more than 700% of their average rainfall. The Indus River, which runs the length of the country, quickly burst its banks, flooding communities over a 75,000km² area. At least 33 million people were affected, and 8 million displaced. In 2024, the same pattern occurred, with abnormal heat driving heavy rains. Floods affected more than 1.5 million people, many of whom had been displaced only two years before.

Official reports put the number of those who died in the 2022 floods at 1,739, a shocking figure. But the real count is likely much higher. In Pakistan, fewer than 5% of deaths are recorded in any way. Official figures only account for sudden deaths such as drowning or electrocution, and leave out those who died from water- or mosquito-borne diseases, which flourished in the abysmal conditions of displacement. Data about mortality during heatwaves is even less reliable. In 2022, when temperatures reached 50°C in many parts of Punjab province, which is home to over 120 million people, there were zero officially recorded heat-related deaths.

Data has the power to reveal and to conceal, making some populations visible and others invisible. With the Pakistan government's current approach, older people and very young children, who are at highest risk from the types of diseases that thrive after a flood and the least capable of enduring extreme heat, are the most likely to go uncounted. Pakistan is one of the countries most affected by climate change in the world, but without a better understanding of who is at greatest risk and why, neither the Pakistan government nor the international community can begin to address the harm. The goal of this report is to shine a light on some of the casualties of the climate crisis that are unaccounted for in official governmental records.

In the absence of useful official data, Amnesty International partnered with Indus Health & Hospital Network (IHHN), a charity hospital network that provides free healthcare in Pakistan, to research how

climate change impacts health and mortality. IHHN conducted a quantitative observational study, analysing data on deaths in three of its hospitals in flood or heatwave-affected areas of Pakistan in 2022. IHHN then analysed how these deaths correlated with indicators related to climate change, such as above-average temperature and rainfall.

Amnesty International conducted qualitative interviews to further build on the IHHN data analysis and to better understand how climate disasters were impacting people in Pakistan. This included: 1) Interviews with relatives of people who had died in IHHN hospitals following a flood or a heatwave in 2022, and whose deaths could plausibly be linked to those events; 2) Interviews with relatives of people who died in similar circumstances at home and were identified by IHHN's community health workers, in order to capture the large number of people who died outside hospital settings; and 3) Interviews with people who were impacted by heatwaves or flooding in 2024, in some cases outside of the hospitals' catchment areas, so as to ensure that data from 2022 remained relevant to the current situation.

Amnesty International's research took place between April 2024 and January 2025. Amnesty International visited Sindh and Punjab provinces four times over that period. In total, the organization interviewed 210 people, including 90 relatives of people who died following a climate disaster. Amnesty International also interviewed 60 people whose health was directly impacted by flooding or heatwaves but who survived, including many older people, people with disabilities, children and pregnant women. Finally, the organization spoke with 21 healthcare workers, 22 volunteers or employees of non-governmental organizations (NGOs), and 17 local and provincial government officials.

This report shows how, even at the best of times, Pakistan's healthcare system fails to meet the needs of its population, particularly very young children and older adults. Climate disasters compound these existing structural issues, putting children and older people at even greater risk. This report documents many cases in which very young children and older adults prematurely lost their lives in ways that were often preventable. Gaps in data collection stymie efforts to address many of these failures.

Under international human rights law, states are obliged to respect the right to life and the right to health. While Pakistan has made some notable improvements in disaster responses since 2022, it still falls short of protecting these rights for many people, particularly the youngest and oldest, during heatwaves or flooding. This report contains many recommendations as to how Pakistan can bolster its health and disaster management systems to be more responsive to climate disasters.

But ultimately, Pakistan cannot do this alone. Other countries that have historically emitted far more greenhouse gases bear responsibility for the harm they have caused. These states must understand that failing to phase out the extraction, production and use of fossil fuels – the primary driver of global warming – threatens the rights to life and health not just of their own populations, but of children and older people all around the world.

WHY CHILDREN & OLDER PEOPLE

People at the extremes of age – young children and older people – are at the highest risk from flooding and extreme heat.

The body's ability to regulate temperature deteriorates as we age. The changes are detectable as young as 40, but become apparent in most people from their mid-50s. Studies from around the world have repeatedly shown that older people are the single most vulnerable group to extreme heat. In Europe in 2022, 60,000 people died of heat-related causes, but that loss was not evenly distributed: those aged 65-79 died at three times the rate of younger people, and for those over 80 years old, the rate was one hundred times greater. *The Lancet*, a leading medical journal, found that annual deaths among people over 65 are on track to increase by 433% by 2041 if states don't take dramatic steps to cut back emissions. Similarly, young children and particularly infants, who do not produce sweat or thermoregulate as efficiently as adults, are more susceptible to dehydration and heat-related illness. Studies show that extreme heat increases the risk of infant death and can result in low birthweight and pre-term births.

In general, global warming makes the climate more amenable to parasites, and more frequent and extreme flooding creates conditions where mosquito-borne, water-borne, and respiratory diseases spread more easily. Older people and children are the groups at highest risk from most of these diseases. Globally, studies show that very young children and older adults account for most malaria and dengue deaths. Of the 1.6 million people who died in 2016 from diarrhoea – which often increases after a flood due to lack of access to safe drinking water – 28% were children under five and 43% were adults over 70. Very young children and older adults are also more likely to have severe outcomes from respiratory infections.

Despite the disproportionate impact on their lives and health, young children and older people are often not adequately included in climate disaster responses. In Pakistan, that is true of children, who make up almost half the population, and it is particularly the case for adults over 60, whose population share is projected to increase from 6.7% today to 13% by 2050. While Pakistan has previously received support from international donors to conduct surveys on key child health indicators, such as infant mortality, data collection has largely excluded adults over 50 years old. There is virtually no information on the health or well-being of older people in the country, and unlike UNICEF in the case of children, no international agencies are specifically dedicated to lobbying for the visibility and inclusion of older people.

INVISIBLE FLOODING & HEATWAVE DEATHS

IHHN runs the largest hospital facility in Badin district, home to two million people. Badin, which is in southern Sindh near the mouth of the Indus River, contains a patchwork of canals and drains that are meant to draw away water during a flood. But the sheer amount of rainfall in 2022 overwhelmed that system, and the water was slow to retreat. Families were displaced for weeks and sometimes months. In displacement they often had no access to potable water and struggled to find enough food to eat. Even when they returned to their homes, standing floodwater nearby posed a significant health risk.

In September 2022, following heavy rains in July and August, deaths registered by IHHN's Badin hospital were 71% higher than the monthly average that year. Children were particularly vulnerable. While this was the case throughout the year – in 2022, observed deaths of children made up 80% of those at the facility (Figure 1) – it was even more notable in the post-flooding period. In September, deaths among children reached 209, which was 14% of all recorded deaths among children that year. Compared to the first two quarters of 2022, recorded deaths among children increased by 57% in the third quarter, the months that were dominated by flooding and its aftermath. Deaths increased most notably among very young children, or those under five years old, with the most frequent causes being neonatal conditions and infectious diseases.

Older people also appeared to be at unique risk in the wake of the floods. The number of people over 50 years old who died at the facility, while overall much lower than deaths registered among children, tripled from 13 in July to 38 (16%) in September. By comparison, observed deaths among adults 18-49 did not significantly increase during or after the floods.

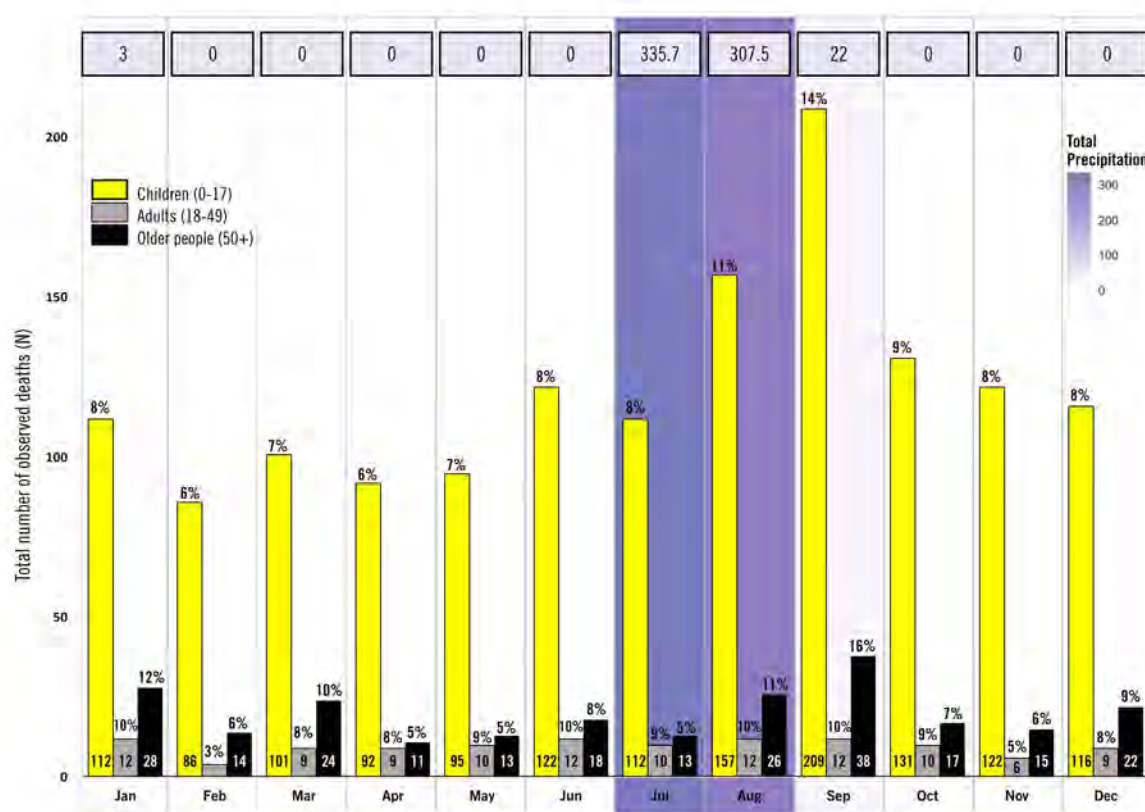


Figure 1. This bar graph shows the total number of deaths that IHHN observed at its Badin facility for each age group and month in 2022. The colour of the bar indicates the age group: children 0-17 (yellow), adults 18-49 (grey) and older people (black). The height of each bar indicates the observed number of deaths for this age group and month. This total number of observed deaths is also given at the bottom of each bar, while the percentage of observed deaths among each age group is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimeters) that occurred each month, highlighting the extreme amounts of rainfall that led to flooding in July and August.

Amnesty International interviewed dozens of families whose relatives died from disease after the floods, with causes ranging from respiratory illness to water- and mosquito-borne disease. In Pakistan generally, malaria, dengue, cholera and gastroenteritis surged almost everywhere in the post-flooding period, wiping out decades of progress from public health interventions.

Seeta, 32, told Amnesty International that she was displaced with her three children during the 2022 floods to an elevated road near her village in Badin district. The family tried to make a shelter by standing four *charpais* – woven beds with wooden frames – against one other and draping plastic tarp over the top. “We were completely wet and could not protect ourselves,” Seeta said.

Soon after, Seeta’s one-year-old daughter Kareena came down with a severe cough. She was coughing for weeks, but the family had no transportation to take her to a doctor due to the floods. Eventually, they were able to bring her to IHHN’s Badin facility, where she was admitted for five days. Despite receiving oxygen, intravenous drips, and other medications, she failed to recover. On 27 August 2022, she died from acute respiratory distress. Seeta said: “On the day she died I was beside her bed. She was losing consciousness and closing her eyes. I screamed for my husband and the nurse was pulling me out of the ICU... I was [in] immense pain.”

In addition, people with chronic conditions, many of them older people, could not access routine healthcare, sometimes leading to deadly consequences. For example, Yaqoob Khan, 62, was unable to get treatment for diabetic wounds in his foot, and died of sepsis from gangrene at IHHN’s Badin facility on 8 September 2022. His nephew told Amnesty International: “Most of the time when he had [diabetic] wounds he would go to the doctor. He would get medications. But we live in a remote area, the roads were all blocked [during the flood].”

Unfortunately, many of the health issues people faced in 2022 had not improved two years later, when flooding struck again. In September 2024, Amnesty International visited eight flood-affected communities in Sindh province. While not as widespread as the floods of 2022, the 2024 floods nonetheless displaced 140,000 people in Sindh alone.

As before, older people and very young children faced the most serious health risks amidst the unchecked spread of mosquito and water-borne diseases. Haji, a 61-year-old farmer, experienced diarrhoea for 20 days after being displaced by flooding in September 2024. This had considerably weakened his health, and he could no longer walk. His son, Khalid Hussain, said: “We were drinking flood water. The government provided us with a tent, and nothing else... Before the flood he was healthy and fit. Now he is unable to even eat unassisted.”

Issues related to water and mosquito-borne diseases were more prominent in Sindh, at the end of the Indus River, given that stagnant standing water was present for many months. Further upstream, at the

IHHN facility in Muzaffargarh in Punjab province, a different trend emerged. There, the floods came and went relatively quickly. Families were displaced for shorter periods, their homes and land less severely waterlogged. In Muzaffargarh, IHHN found that the number of deaths occurring at their facility was relatively stable during and after the floods.

In addition to flooding, 2022 and 2024 were marked by extreme temperatures in Pakistan. In 2022, temperatures reached 50°C across much of the country. In 2024, the same occurred. This proved particularly deadly in urban areas like Karachi: there, temperatures reached over 40°C, which when combined with over 70% humidity created conditions at the limits of human tolerance. While less visible than flooding, heatwaves had a major impact on the health and livelihoods of those affected.

While IHHN's observational data did not cover facilities in urban areas, Amnesty International conducted dozens of interviews in Karachi to understand how the heatwave had impacted people's health. While official figures said there were 56 deaths in Karachi during the heatwave of 2024, NGOs believed the toll was higher. Edhi Foundation, a charity ambulance and morgue service, told Amnesty International that while they usually moved 60 bodies into their Karachi morgues each day, in June and July 2024 that number almost always exceeded 100, reaching 141 on 28 June. They also transferred hundreds of patients with heat-related symptoms to hospitals.

Amnesty International interviewed eight relatives of people who died in Karachi in June and July 2024 from conditions credibly linked to extreme heat, but whose deaths had not been registered as heat-related. All of these people were over 50 years old, and many were forced to continue working despite dangerously hot conditions. Ibrahim Sanif Abdul, 55, a security guard who worked outdoors in 12-hour shifts, seven days a week, died on 26 June 2024. On the day of his death, his brother said:

“[His coworkers] called me as Ibrahim was not well, saying that he was going to faint. When I got there... He was unable to talk. He said, ‘I don’t know what is happening to me.’”

During the short ride to the hospital, Ibrahim became unresponsive. The doctor pronounced him dead on arrival, attributing his death to a heart attack. Studies show that extreme heat puts strain on the cardiovascular system, causing a heart attack or stroke.

IHHN collected data about deaths during heatwave periods in its facilities, which as noted were all in rural areas. However, it found no correlation between higher temperatures and observed deaths, even in its Muzaffargarh and Bhong facilities, which experienced unprecedented heat in 2022. People in rural areas may have had better access to shade and other cooling methods, making them less vulnerable than urban populations. At the same time, it appears that they were largely unaware of what symptoms to look for during periods of extreme heat, and therefore did not always take a relative affected by heat-related illness to a hospital when needed. Amnesty International interviewed the relatives of 16 people in the hospitals’

catchment areas whose deaths occurred during a period of excessive heat in 2022, and could credibly be linked to heat-related causes. In most of these cases, the person had died outside of the hospital, and their deaths were not recorded.

The information collected by IHHN and Amnesty International paints a different picture from that of the Pakistan government, which fails to accurately capture deaths during floods or heatwaves. According to its own estimates, the Pakistan government collects information about fewer than 5% of deaths in the country. In interviews with 17 provincial and local government officials, Amnesty International learned that there were many barriers to data collection. First, hospital records are not linked to mortality records. If somebody wants to report the death of a relative, they must separately approach their local government and obtain a death certificate, which they usually only do when there is inheritance of property or land at stake.

Second, even the government data that does exist is not disaggregated by age, gender, or even cause of death: every death certificate seen by Amnesty International stated that the cause of death was “natural” and the type of death was “normal”, even when the person had clearly died from drowning or other impacts of the extreme weather. Finally, people had to pay a fee to register a death, and in rural areas, most had to pay high transportation costs and, for those who were not literate, additional fees to someone who could help them fill out the paperwork. Understandably, for the vast majority of people, registering a death was simply not worth the cost. At present, therefore, official data is simply not capable of capturing the human toll of the climate crisis in Pakistan.

HEALTHCARE BREAKDOWN

Pakistan’s healthcare system is underfunded and overstretched even in non-emergency times. But when a flood or heatwave strikes, that system comes under even greater strain, and typically fails to deliver adequate care to those in need.

According to the World Health Organization, 2,000 health facilities in Pakistan – or 13% of the total – were damaged or destroyed in the 2022 floods. Roads in flood-affected areas were impassable for weeks and sometimes months. When people needed to reach a health facility, they described walking for several kilometres with children or older people sitting on their shoulders or laying in their arms. They also described paying exorbitant amounts for boats or other transport where it was available.

Inability to access healthcare was a problem for all groups, but older people, who often have chronic conditions that require regular medication or treatment, suffered unique harm. Aqel Nadh, who is in her late 60s and has diabetes, was unable to visit a doctor for about three months following the 2022 floods due to lack of transport and financial constraints in the family. She said:

“The doctor asked me to come each day to change the dressing but I couldn’t get there... My foot turned black and was swollen. Eventually I went to the hospital due to immense pain, and the doctors said they would need to amputate.”

Heatwaves do not destroy hospitals or create physical barriers to transport the way floods do. But they can easily bring hospitals to the brink, as was the case during the Karachi heatwave in the summer of 2024. Smaller primary and secondary care clinics seemed unprepared to deal with people experiencing heat exhaustion or heatstroke, funnelling patients towards the city’s larger hospitals, which were quickly overwhelmed.

One man in Karachi described how his 65-year-old father, amidst prolonged electricity outages, began showing signs of heat exhaustion: “When we touched his skin it was as if you put your hand on a cloth that was just ironed,” he said. Around 2pm on 25 June 2024, when the man’s condition significantly worsened, the family took him to a nearby primary care clinic, but he was turned away. His son said: “His body was hot, his eyes were open but he was breathing very heavily and he was not moving... The clinic told us to move him to a major hospital, because his condition was too serious.”

There were no government ambulances available to take the man to a larger hospital, and even charitable organizations were unable to send one right away. The family finally found a private ambulance, but the man died before reaching the hospital, at around 5pm.

Dr. Shahid Rasul, the Executive Director of Jinnah Postgraduate Medical Centre, one of the biggest government hospitals in Karachi, said that while the hospital had set up a specialized ward to cope with heatstroke patients, the sheer number of people seeking care was a challenge:

“We need medical education or training of general practitioners on how to deal with heatwaves, and for the government to subsidize them with medication [for heat-related illnesses]. At the end of the day, they are the first line of defence.”

Flooding and heatwaves merely exacerbated the existing gaps in Pakistan’s healthcare system. According to most benchmarks, countries should spend 5-6% of their Gross Domestic Product (GDP) or 15% of their budget on healthcare to ensure universal health coverage. Pakistan in 2021 spent just 1.11% of its GDP and about 6% of its budget on health. This has led to insufficient staffing and beds, and also means there are not enough healthcare facilities, forcing people to travel long distances to access care. Many people in Pakistan also incur significant out-of-pocket healthcare costs. Families who were hit by climate disasters often described paying significant amounts to treat their loved ones, and several people described taking out loans in order to afford care.

This was particularly true for older people, whose healthcare was more likely to be deprioritized as they were not seen as ‘productive’ by societal standards. Dr. Khalid Mahmood, Director of Health Services of Punjab province, said:

“After 70 years no one cares about you. Because [doctors] cannot take money from [an older person], he is now a waste particle.”

DISASTER RESPONSE

During the floods in 2022, many people said they had received no warning of the coming scale of the disaster. One man described the floods as “a sudden attack.” The lack of early warnings cost lives, including those of many children, who were sometimes left behind or lost during hurried evacuations. Khatoon Chandio, 66, was fleeing her home in Dadu district with her family, including her six-year-old granddaughter Khausar, who drowned during the evacuation:

“All of a sudden water was surrounding our home. We started shouting and crying for help. Local fishermen came and helped us... Everyone was in the boat and was panicking... [Khausar] fell out.”

Since 2022, the government appeared to have made notable improvements in delivering early warnings to the population about extreme weather events, including via text message, automated phone calls, as well as in-person visits or mosque announcements in affected areas. In some cases, for example in parts of Khyber Pakhtunkhwa that were affected by flooding in April 2024, residents told Amnesty International that these warnings had helped save lives in their communities.

However, humanitarian responses, both in 2022 and 2024, have fallen well short of people’s needs. In 2022, just 2.5 million out of 7.1 million displaced people reached formal displacement camps in Sindh. The rest were stranded on roadsides, surrounded by floodwater. One IHHN staffer from Khorwah, in Sindh province, said that government aid took more than 15 days to arrive in flood-affected areas, during which time people survived on whatever food they salvaged from their flooded homes. NGOs said they similarly faced difficulties delivering aid to people in remote areas because they did not have boats and hiring them was extremely expensive.

When flood-affected people were able to reach formal displacement camps, aid distribution was chaotic and the conditions unsanitary. One man who fled his home in Dadu district to a displacement camp said: “NGO guys were bringing rations on trucks to the entry gates of the camps. People living near the gates were looting them, so we [living further from the gates] were unable to receive them.”

Responses to heatwaves were significantly less robust than flood responses. Heatwave management plans are not in place across all provinces, as Amnesty International has reported for years. While most heat-related deaths are preventable, almost all interviewees said they did not know of any places where they could go to cool down during a period of extreme heat. During the Karachi 2024 heatwave, for

example, the Sindh Provincial Disaster Management Authority, together with humanitarian organizations, established more than 1,800 “heat stabilization camps” (cooling centres) across the province, including 352 in Karachi. But most people in Karachi that Amnesty International interviewed had not heard of these camps. Tanveer Ahmed, the Executive Director of HANDS, an NGO which ran more than 50 heat stabilization camps during the summer of 2024, said that capacity had to increase to accommodate the needs of Karachi’s nearly 20 million residents: “Karachi is a huge city, 50 [cooling] camps is nothing for a day of heatwaves. Similarly in other cities, the proportion of camps are very low, and these camps require resources.”

Structural problems hinder the improvement of disaster responses in Pakistan. Funding often does not filter down to the district level, leaving local governments closest to ground realities unable to respond quickly and flexibly to a disaster. And the government has also placed significant security restrictions on the operation of NGOs, requiring them to overcome bureaucratic hurdles to obtain permissions to operate, even in the wake of a flood or other disaster. While some of these requirements were waived in 2022 due to the scale of the emergency during the floods, they continued to prove a major barrier to many NGOs attempting to operate in the wake of smaller-scale floods in 2024.

ECONOMIC COLLAPSE

In 2022, 4.4 million acres of crops were destroyed by flooding in Pakistan, most of it in Sindh and Balochistan. In many areas, the fact that floodwaters did not retreat for months meant that autumn or winter crops, such as wheat, could not be planted either, wiping out a whole year’s earnings. Around one million farm animals died. Many people told Amnesty International that they had been forced into debt, often to their landlords, to pay for the losses, or that they sometimes left their families and homes to seek daily wage labour in the cities. While the floods were of a smaller scale in 2024, 500,000 acres of crops were destroyed in Sindh alone. Families, many of whom had rebuilt their lives after the 2022 floods, were pushed into economic crisis yet again.

Ali Hassan Sumejo, a 22-year-old father of two, said he owed PKR 150,000 (US\$540) to his landlord for seeds, fertilizer and other equipment. He had no idea how he would pay that back after the 2024 floods destroyed his home, his belongings and his crops:

“We are denied any financial help. Even the landlord says: ‘I’m just like you now, I’ve lost my land and my investments. So go find labour work’... It’s a very difficult time, sometimes we get just one meal per day and sometimes we have no food at all.”

Pakistan provides little in the way of social protection in the event that somebody loses their livelihood. People were forced to sell livestock or other assets to pay for food and shelter, often for deflated prices, which they attributed to a market glut during the floods. Shafi Mohammed Nohani, 52, said:

“Everything I had was invested into the crop. We need to clear [that debt] as no one will lend to us for another crop [season]... I have sold four or five sheep, my extended family have sold almost 20 sheep... The kids go to school by foot, it is about 7-8 kilometers so takes around an hour. Before the floods we used a motorbike but... we sold it.”

According to international organizations, acute hunger and child malnutrition rose in the months following the floods of 2022.

Flooding also brought with it widespread destruction to housing in Pakistan. The damage was particularly extensive in Sindh, which accounted for 83% of all damaged or destroyed houses in the country. With backing from international donors like the World Bank and the Asian Development Bank, the Sindh government has pledged to rebuild 2.1 million houses destroyed in the 2022 disaster. According to Syed Murad Ali Shah, Chief Minister of Sindh, 100,000 houses had already been built and 525,000 were under construction as of June 2024.

However, experts from the South Asians for Human Rights, a regional network of human rights defenders, said that their on-the-ground visits to Sindh in January 2025 “contradict the provincial government’s claim of launching one of the world’s largest housing projects in history for flood affectees.” Similarly, many families told Amnesty International that they had been passed over by the reconstruction programme, or they had struggled to navigate the application process. Some were still living in tents almost two years after the floods had destroyed their homes.

Most children were unable to attend school for weeks and sometimes months during the 2022 floods, and again in the 2024 floods. Aisha Channa, 11, was unable to attend her school for two months in 2024 because the usual route she took to school was under water: “Now there is no path, only water... All the children have gotten their books for the fourth grade, but I haven’t. I don’t know when I’ll be able to go back.”

During heatwaves, much of the public health advice on avoiding exposure depends on whether people can afford to stay indoors, negotiate different working hours, or take time off work. For most people in Pakistan, where more than 70% of people work in the informal sector, this is simply not the reality. There is no support for people who are unable to work normal hours or fall ill because of extreme heat. Nor are there universal pensions for people with disabilities or for older people, and only about 20% of the retirement-age population in Pakistan receives a pension of any kind.

ACTION REQUIRED

There is much that Pakistan can do to safeguard the right to life and health of those most affected by climate disasters. It should increase spending on the health sector and ensure that health workers at all levels are trained and equipped to deal with flood- and heat-related illness. It should invest more in

preventive measures such as cooling centres, and ensure that District Disaster Management Authorities are properly operationalized with funding and human resources to ensure a quicker on-the-ground response during emergencies. It can also remove requirements such as Non-Objection Certificates for humanitarian organizations, given that these and other bureaucratic hurdles often prevent them from delivering timely aid to those in need. Pakistan can also broaden social protection measures to ensure that they are responsive to climate shocks, including extreme heat. The government should introduce a universal social pension for older people in particular, to prevent them from being forced to work in dangerous conditions.

Finally, and crucially for the above reforms to succeed, Pakistan must know who is the most affected when a flood, heatwave, or other environmental disaster strikes. It can ensure more effective health responses by improving data collection and making it inclusive of all groups. The government can replicate successes it has had in increasing birth registration by applying similar measures to death registration, including abolishing fees and improving data-sharing between health facilities and other government agencies. It can end the near-total exclusion of older people from health data collection, ensuring their inclusion and visibility.

However, there is also much that Pakistan cannot do alone. The most direct way that countries around the world can uphold the right to life and to health, thereby protecting millions of children and older people, is to stop extracting and burning fossil fuels. This is not a problem for the future: the people whose deaths are documented in this report might have lived for many more years had it not been for climate change-induced disasters.

High income, high-emitting countries, which bear the greatest responsibility for climate change, can also provide more support to Pakistan to help its 241 million residents adapt to the climate crisis. Worldwide, public adaptation assistance – the kind that would help Pakistan improve canals or drainage systems or finance more cooling centres – falls well behind real need. Under international human rights law, communities and individuals suffering loss and damage from climate change have the right to remedy. The response to the 2022 floods is indicative of the international community's failures on this front, as most of the US\$10.5 billion pledged towards Pakistan's post-flood recovery was in the form of repurposed loans rather than aid.

As stated by UN Secretary-General Antonio Guterres, marking the one-year anniversary of the 2022 floods: "Pakistan needs and deserves massive support from the international community... [It] is the litmus test for climate justice."

METHODOLOGY

This report is the result of a collaboration between Indus Health & Hospital Network (IHHN), a charity hospital network that provides free healthcare in Pakistan, and Amnesty International.

Amnesty International initiated this research with the goal of understanding the impact of flooding and heatwaves on at-risk groups. However, as will be described in greater detail in this report, the Pakistan government says that it officially records fewer than 5% of deaths in the country.¹ Those deaths that are recorded are not disaggregated by age, sex, cause of death, or any other relevant metrics. As a result, Amnesty International could not rely on official statistics to determine the impact of flooding or heatwaves on deaths.

For this reason, Amnesty International chose to partner with IHHN to more comprehensively describe the scope of climate impacts on people in Pakistan. This research adopts a mixed-methods approach, combining a quantitative study of deaths observed in local IHHN facilities in three locations with qualitative research by Amnesty International in the same areas and beyond.

QUANTITATIVE DATA COLLECTION

Indus Hospital was established in 2007 as a 150-bed, cashless and paperless hospital in Karachi, Pakistan. Now, IHHN has transformed into a country-wide network of over 2,300 beds, 15 hospitals, 4 physical rehabilitation centres and 4 regional blood centres. It has 36 primary care centres and various community-based public health programmes across all provinces and administrative units of Pakistan. IHHN provides free-of-cost healthcare to over 500,000 patients every month.

Amnesty International selected IHHN as a partner for data collection for several reasons. First, IHHN provides medical care for free, meaning that patients there would likely reflect a more representative demographic than a private hospital, for example. Second, IHHN is independent as it largely subsists on private donations. And third, IHHN has a wide network of facilities across the country, including in areas

¹ Pakistan, Ministry of Planning Development and Special Initiatives, “National Framework on CRVS Reforms”, https://www.pc.gov.pk/uploads/crvs_reports/National_Framework_on_CRVS_reform.pdf

that were heavily impacted by the floods in 2022. IHHN provided over 1.4 million people with some form of healthcare in the wake of the 2022 floods.

In order to understand the impact of flooding and heatwaves on health in its facilities, IHHN conducted a quantitative study analysing deaths across three of its facilities in 2022, a year of intense flooding and heatwaves in Pakistan. Originally, the three sites included were Badin (in Sindh province, an area heavily impacted by flooding); Muzaffargarh (in Punjab, where the Chenab and Indus River meet and which was therefore flood-affected, as well as the site of intense heatwaves); and Lahore (the largest city in Punjab, and the site of heatwaves and extremely poor air quality). Lahore was ultimately excluded from the study because its emergency room was not operational in 2022, meaning that data was not going to be comparable across sites. An IHHN facility in Bhong (in Punjab, the site of flooding and extreme heat) was added instead. However, ultimately the sample size in Bhong, which is a much smaller facility, was significantly smaller than that of the other two sites. Therefore, the results in this report primarily focus on Badin and Muzaffargarh.

These IHHN facilities recorded deaths of people who either died on-site while under medical care, or when the body of an already-deceased person was brought into the hospital premises, upon which that person was declared dead. The statistical analysis examined these deaths with regard to an individual's sex, age and the observed cause of death.² The total monthly and daily number of deaths at each hospital throughout 2022 was investigated in terms of its temporal association with key local climate indicators of the maximum temperature (in degree Celsius) and total rainfall (precipitation in millimetres).

There was a significant disparity between male and female deaths observed across all facilities at IHHN: 43.4% of observed deaths were of females, whereas 56.6% of observed deaths were of males. The disparity existed across all age groups, though it was less prominent among adults 18-49 years old (females made up 46.7% of observed deaths in this age group, males 53.3%). The disparity was most notable among infants (females made up 41.6% of observed deaths, males 58.4%), and adults over 50 (females made up 40.6% of observed deaths, and males 59.4%). Some of these disparities may be explained by biological differences between sexes, such as the fact that women in Pakistan, as in most parts of the world, live longer than men. Elsewhere, however, particularly among young children, this may suggest that families are less likely to seek medical treatment for females than males. It is possible that this reflects a prioritization of male over female lives, particularly amongst families who already face significant difficulties affording healthcare. It also may reflect discriminatory attitudes (explored more in the textbox on p. 57) that lead to the delaying of medical treatment for women and girls.

2 IHHN categorized types of death based on the organ or system affected, disease type and etiology, clinical relevance, and keyword-based patterns. Two doctors external to the project but from IHHN performed this categorization to ensure no researcher bias in the process. This was required because some, but not all, of the deaths were categorized according to the International Classification of Diseases (ICD-10). In total, IHHN identified 22 causes of death in the report. In the presentation of their findings here, Amnesty International consolidated those categories further, for example into "Other", where numbers of cases from a cause of death were extremely low.

In the absence of official data on mortality in Pakistan, IHHN's observational data provides an insight into the local demand on each hospital during 2022. This data is limited in that it only indicates the number of deaths a given facility was *able* to observe. There are many unknown factors surrounding a person's willingness and ability to seek medical help from a hospital for themselves or their relatives, many of which are explored in Chapters 2 and 3. For example, while people are likely to seek medical care to address health issues arising from flooding, they might be unable to access medical facilities and care because of a flood. The latter could make it more difficult to observe flood-related deaths that are occurring. Furthermore, IHHN was unable to collect medical information on all patients presenting at their facilities in 2022. Despite these limitations, the IHHN data allows us to observe if certain types of deaths increase among certain types of people at risk in the aftermath of extreme weather events in the communities that IHHN serves. This, in turn, would be in line with the argument that the climate crisis is leading to harmful consequences especially for vulnerable populations. Official mortality statistics will be needed to further verify these claims.

The main findings from this statistical analysis of IHHN's hospital records are documented in Chapter 2 "Invisible Deaths", with additional data provided in the Appendix to the report.

QUALITATIVE DATA COLLECTION

To better understand the dynamics behind trends identified in the IHHN data, Amnesty International travelled to Pakistan four times between April 2024 and January 2025 and conducted a total of 210 qualitative interviews. All of this research took place in flood-affected and heatwave-affected parts of Sindh and Punjab provinces. Due to security issues related to ongoing fighting, Amnesty International was unable to visit Khyber Pakhtunkhwa or Balochistan provinces, but 18 interviews were conducted remotely with people from those regions. The remaining 192 were conducted in person.

Amnesty International spoke to relatives of those people who had died in IHHN hospitals in 2022 in periods following a flood or a heatwave. Amnesty International considered a period of up to three months to be the "post-flooding" period, given scientific evidence that mortality remains above the norm for between two to three months after a flooding event.³ With regards to extreme heat, deaths tend to occur rapidly, meaning that Amnesty international only considered deaths that occurred the same day or several days after a period of extreme heat as being heat-related.⁴

To further narrow the scope of interviewees, IHHN filtered cases by cause of death. In total, 22 causes of death were observed in 2022 in these three hospitals. Of these, those most relevant to flooding were: drowning; trauma; diarrhoea; infectious diseases (which included water- and mosquito-borne diseases

3 Zhengyu Yang and others, "Mortality risks associated with floods in 761 communities worldwide: time series study", October 2023, BMJ, Volume 383, <https://pubmed.ncbi.nlm.nih.gov/37793693/>; Victoria D. Lynch and others, "Large floods drive changes in cause-specific mortality in the United States", 3 January 2025, Nature Medicine, Volume 31, <https://www.nature.com/articles/s41591-024-03358-z>

4 World Health Organization (WHO), Heat and health (updated 28 May 2024), <https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health> (accessed 1 April 2025).

such as cholera, malaria and dengue); respiratory; maternal; and neonatal deaths (the primary causes of which were premature birth, birth complications, neonatal infections and congenital anomalies⁵). Causes deemed relevant to heatwaves included: respiratory, cardiovascular, liver-related, neonatal, and maternal.⁶

After identifying cases where a person died within the relevant period after a flood or a heatwave, and of a cause that could be related to the flood or heatwave, Amnesty International then interviewed relatives of the person who died, to better understand the circumstances leading up to the death. For example, Amnesty International asked flood-affected individuals whether they had been displaced, and if so whether they had had access to clean drinking water or adequate sanitation. If a person was impacted by extreme heat, Amnesty International ascertained whether the person was working or spending a lot of time outdoors, and whether they demonstrated symptoms of heat exhaustion (nausea, dizziness, rapid breathing, and fatigue) or heat stroke (fainting, hallucinations, seizures, slurred speech).⁷

Therefore, deaths that Amnesty International calls “flood-related” or “heat-related” in this report demonstrated 1) a temporal link between heatwaves or flooding and a person’s death; 2) a cause of death that could credibly be explained by or made more likely by said events; and 3) testimony from interviewees that further supported this claim with information about symptoms or conditions leading up to their death.

Amnesty International realized that victims identified in IHHN’s data collection were only one part of the story. Many people in the hospital’s catchment areas, which are very rural and poor, were unable to reach hospital facilities at all, particularly during the floods. Therefore, Amnesty International also conducted dozens of interviews with people whose loved ones had died in the community, without reaching hospitals. In about half of these cases, IHHN community health workers at primary care facilities in the hospitals’ catchment areas helped identify relatives of victims who had died following a heatwave or a flood, and whose cause of death could be credibly linked to that disaster. Amnesty International interviews were then conducted to verify this information.

Finally, Amnesty International went beyond the catchment area of the hospital, which was essential particularly given the lack of inclusion of urban areas in IHHN’s data collection. In these cases, Amnesty International spoke with people in which a relative’s death followed a heatwave or a flood, and could be credibly linked with those events, including with the help of medical or other documentation. Amnesty International also spoke with people who had survived heatwaves or flooding, to better understand their ability to access healthcare, humanitarian support, and social protection amidst these climate change-related disasters.

5 WHO, Newborn Mortality (updated 14 March 2024), <https://www.who.int/news-room/fact-sheets/detail/newborn-mortality> (accessed 1 April 2025).

6 According to the WHO: “The body’s inability to regulate internal temperature and eliminate heat gain in such conditions increases the risk of heat exhaustion and heatstroke. The strain put on the body as it tries to cool itself also stresses the heart and kidneys. As a result, heat extremes can worsen health risks from chronic conditions (cardiovascular, mental, respiratory and diabetes related conditions) and cause acute kidney injury.” For more information see: WHO, Heat and health (previously cited).

7 Cleveland Clinic, “Heat Exhaustion and Heat Stroke Are Too Hot To Handle on Your Own”, 21 June 2023, <https://health.clevelandclinic.org/heat-exhaustion-vs-heat-stroke>

To complement its interviews, Amnesty International conducted desk research related to climate change, disasters, and human health. This included a literature review of 51 scientific studies related to mortality from flooding and heatwaves, ten of which were systematic reviews of existing literature. An overview of those studies is in Chapter 1.4 “At-Risk Groups and Climate Disasters”. Amnesty International also collaborated with its Digital Verification Corps to collect publicly available data, including weather alerts and announcements, from the Provincial Disaster Management Authorities (PDMA) of Khyber Pakhtunkhwa, Punjab, and Sindh in 2022 and 2024. Then, Amnesty International cross-referenced the PDMA alerts with rainfall data from other public sources, to determine whether warnings were provided in a timely manner ahead of forecasted heavy rainfall. This information is included in Chapter 4 “Emergency Responses”.

PROFILE OF INTERVIEWEES

Amnesty International interviewed 90 family members whose relatives, almost all of them children or adults over 50 years old, died in conditions that appeared to be linked to flooding or heatwaves in 2022 or 2024, according to the criteria outlined above.

Amnesty International also interviewed 60 people who had experienced heatwaves or flooding and had negative health outcomes as a result, but who had survived. This included 34 older men and women: 11 people in their 50s, 14 people in their 60s, and nine people in their 70s. The oldest interviewee was 74 years old. In defining older age, Amnesty International prefers a context-specific approach consistent with the work of the UN Office of the High Commissioner for Human Rights. This approach takes into account the ways in which people are identified and self-identify in a given context according to their age. People referred to as “older” in this report people over 50 years old, given the unique risks to the health of this population during floods and particularly during heatwaves in Pakistan. Whenever records, such as a government-issued National Identity Card (NIC), were available, Amnesty International used that to determine the person’s age. In some cases where the person did not have an NIC card, the person’s age is given as an estimate.

Amnesty International also interviewed five children who, in line with Amnesty International’s guidelines on interviewing children, were all over 10 years old at the time of the interview. In cases where the child was under 10, Amnesty International interviewed their parents. Most parents knew the exact age of their child. Where they didn’t, Amnesty International used additional information such as birth certificate documents. However, in some cases when parents were uncertain of their child’s age and did not have any additional supporting documentation, the parent’s approximation of their age is given in this report. In this report, “child” and “children” are used to refer to anyone under the age of 18, consistent with international law; “young children” refers to children under the age of 10, and “very young child” or “very young children” refers to children under the age of 5.

Of the people Amnesty International interviewed, 18 had a disability. This included people with limited mobility, limited hearing or eyesight, and people with psychosocial disabilities. Amnesty International also interviewed four women who were pregnant or had been pregnant at the time of a heatwave or flood.

Amnesty International interviewed 21 healthcare workers, including from IHHN, who had responded to extreme flooding or heatwaves in 2022 or 2024. Amnesty International also interviewed 22 people involved in humanitarian responses to the climate crisis in Pakistan, including both volunteers and professionals working for UN agencies or international or national non-governmental organizations (NGOs).

Before each interview, Amnesty International informed interviewees about the nature and purpose of the research and how the information would be used. Interviewees who gave their full consent signed or fingerprinted a written form that was designed by IHHN and Amnesty International. In cases where the interviewee could not read the form, an interpreter working with Amnesty International read the form aloud to the participant to ensure their full understanding. People who were interviewed remotely were unable to sign a consent form, and so Amnesty International conducted a rigorous verbal consent process in these cases. People were told they could end the interview at any time and could choose not to answer specific questions. Most interviews were conducted in Urdu, Sindhi, or Saraiki, with interpretation into English. Several interviews were conducted in English.

For most of its work in Punjab and Sindh, Amnesty International did not encounter interference by state actors. However, during one trip to Punjab in January 2025, a police convoy was sent to accompany Amnesty International researchers and was positioned at the designated interview location, forcing one researcher to terminate interviews due to concerns that such a police presence might compromise the safety of participants or impact the information they provided.

The delegates made efforts to ensure privacy during interviews, though in some circumstances this was challenging, particularly in rural villages made up of semi-open structures without doors. Where a child was interviewed, Amnesty International requested permission from the parent first and in almost all cases interviewed the child in the presence of the parent, to ensure full transparency and consent. In several interviews with older people or people with disabilities, communication was challenging and a relative had to be present to support them to communicate. For example, one man who was deaf and had never learned formal sign language was helped to express his thoughts through his wife, with whom he had an informal means of communication.

Everyone interviewed was given the opportunity to express themselves anonymously, if they had security or privacy concerns. In cases where interviewees preferred not to provide their name, Amnesty International has not included it in this report. Amnesty International and IHHN did not provide financial incentives to interviewees, although in some cases where people had travelled from remote areas to be interviewed, Amnesty International provided compensation for that person's travel and food costs for the day.

Amnesty International engaged with 17 government officials in Pakistan for this report, and their commentary and feedback to our findings is integrated throughout. At the provincial level, Amnesty International conducted interviews with officials from the Sindh and Punjab Ministries of Health, the Sindh

and Punjab Provincial Disaster Management Authorities, and the Sindh and Punjab Bureaus of Statistics. In addition, Amnesty International met with 10 officials at the district or local levels of government.

Finally, Amnesty International sent letters to key government ministries of Pakistan detailing the main findings of this report and requesting relevant information. In a letter sent 10 October 2024, Amnesty International requested statistical information regarding heatwave and flood-related mortality from the National Database and Registration Authority (NADRA). While NADRA confirmed receipt of the request on 1 November 2024, no further information was provided. In addition, on 10 March 2025, Amnesty International sent letters to the Ministry of Climate Change and Environmental Coordination; the National Disaster Management Authority (NDMA); the Ministry of National Health Services, Regulations and Coordination (Ministry of Health); the Ministry of Interior; and the Ministry of Federal Education and Professional Training (Ministry of Education). As of the time of writing, no replies had been received.

1 BACKGROUND

1.1 GEOGRAPHY

Pakistan borders India, Afghanistan, Iran and China. It has access to the Gulf of Oman and the Arabian Sea in the south. Pakistan consists of four provinces: Balochistan, Khyber Pakhtunkhwa, Punjab and Sindh, as well as three administrative territories: Islamabad Capital Territory, Pakistan-administered Jammu and Kashmir, and Gilgit-Baltistan. Provinces are divided into districts, which are further subdivided into *tehsils*. The smallest unit of government at the local level is the union council, which is often equated to a village or neighbourhood council.⁸

Pakistan is divided into four geographic areas. The north-west is mountainous, with the Himalayas, Karakoram and Hindu Kush mountains. The centre and east are dominated by the flat Indus River Plain (other major rivers include Jhelum, Chenab, Ravi, and Sutlej). The Balochistan Plateau in western Pakistan is surrounded by mountains and covers almost one-half of the country's territory. Finally, the flat, arid Thar Desert region lies in the south-east. This report primarily focuses on the parts of Punjab and Sindh provinces that are heavily affected by heatwaves and flooding, located in the Indus River Plain. As noted in the methodology, however, Amnesty International also conducted remote interviews with people in Khyber Pakhtunkhwa and Balochistan.

Pakistan's climate reflects its geography. It is generally cooler in the north and progressively warmer in the south. The country is dry and hot much of the year, though winters can be harsh and cold, especially in mountainous areas where snowfall is common. Monsoon rains generally occur from June to September. These rains bring frequent yet varying flooding to different parts of the country. Khyber Pakhtunkhwa is routinely affected by flash flooding and urban flooding due to heavy rainfall in the summer months,⁹ whilst also experiencing glacial lake flooding, which is now more common due to higher temperatures and

8 Nadeem Malik and Ahsan Rana, "The History of Local Governance in Pakistan: What Lessons to Learn?", *Journal of International Politics*, Volume 1, 2019, <https://rest.neptune-prod.its.unimelb.edu.au/server/api/core/bitstreams/d9ab2721-7624-5ad0-93c5-acfa9412f615/content>, pp. 26-35.

9 Syed Muzzamil Hussain Shah and others, "A review of the flood hazard and risk management in the South Asian Region, particularly Pakistan", *Scientific African*, Volume 10, 2020, <https://doi.org/10.1016/j.sciaf.2020.e00651>, p.10.

melting glaciers in the Himalayas.¹⁰ In Punjab and Sindh, where the topography is largely flat, the Indus River sometimes breaches its banks during the monsoon season, and the flood water does not always drain back into the river or to the Arabian Sea efficiently.¹¹

While this report focuses on heatwaves and flooding, Pakistan regularly experiences other environmental disasters that are made worse by climate change, such as drought.¹² Pakistan has the fifth-highest water consumption in cubic metres in the world, 94% of which is used for agriculture.¹³ Pakistan is highly dependent economically on agriculture, which means that drought has a significant impact on the country's economy. Drought creates both short-term and long-term issues, including crop losses, crop damage, income loss, and increased food insecurity, leading to additional health problems.¹⁴

1.2 CLIMATE CHANGE IMPACTS IN PAKISTAN

In 2022, Pakistan was responsible for only 1.02% of global greenhouse gas emissions.¹⁵ Yet according to the climate change monitoring organization Germanwatch, the country was the fifth-most vulnerable to climate-induced disasters in the world between 2000 to 2019.¹⁶ This follows a broader pattern, whereby the countries that contribute the least to climate change are often the ones most disproportionately affected by it.¹⁷

Rising temperatures are driving a growing number of extreme weather events around the world, a fact that is supported by a wealth of scientific evidence. The Intergovernmental Panel on Climate Change (IPCC), a UN body that issues scientific findings about climate change, concluded in its most recent report that “human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020”.¹⁸ The IPCC has found that rising temperatures create the conditions for more frequent and intense disasters generally,

10 Pakistan, National Disaster Management Authority (NDMA), “National Disaster Mitigation Plan – Pakistan Remodeled NDMP-II 2023”, <https://www.ndma.gov.pk/storage/plans/July2024/VdJWG822N7jzkEXKUsyh.pdf>, p. 16.

11 Pakistan, Sindh Province, Provincial Disaster Management Authority (PDMA), “MHRVA Informed Disaster Management Plan Sindh 2023-2032”, https://pdma.gos.pk/Documents/District_Management_Plans/Provincial%20Disaster%20Management%20Plan.pdf, p.22.

12 WHO, Drought, https://www.who.int/health-topics/drought#tab=tab_1 (accessed on 25 October 2024).

13 World Population Review, Water Consumption by Country 2024, <https://worldpopulationreview.com/country-rankings/water-consumption-by-country> (accessed on 25 October 2024).

14 Epidemic Control Toolkit: IFRC, Food insecurity/drought, <https://epidemics.ifrc.org/manager/disaster/food-insecuritydrought> (accessed on 25 October 2024).

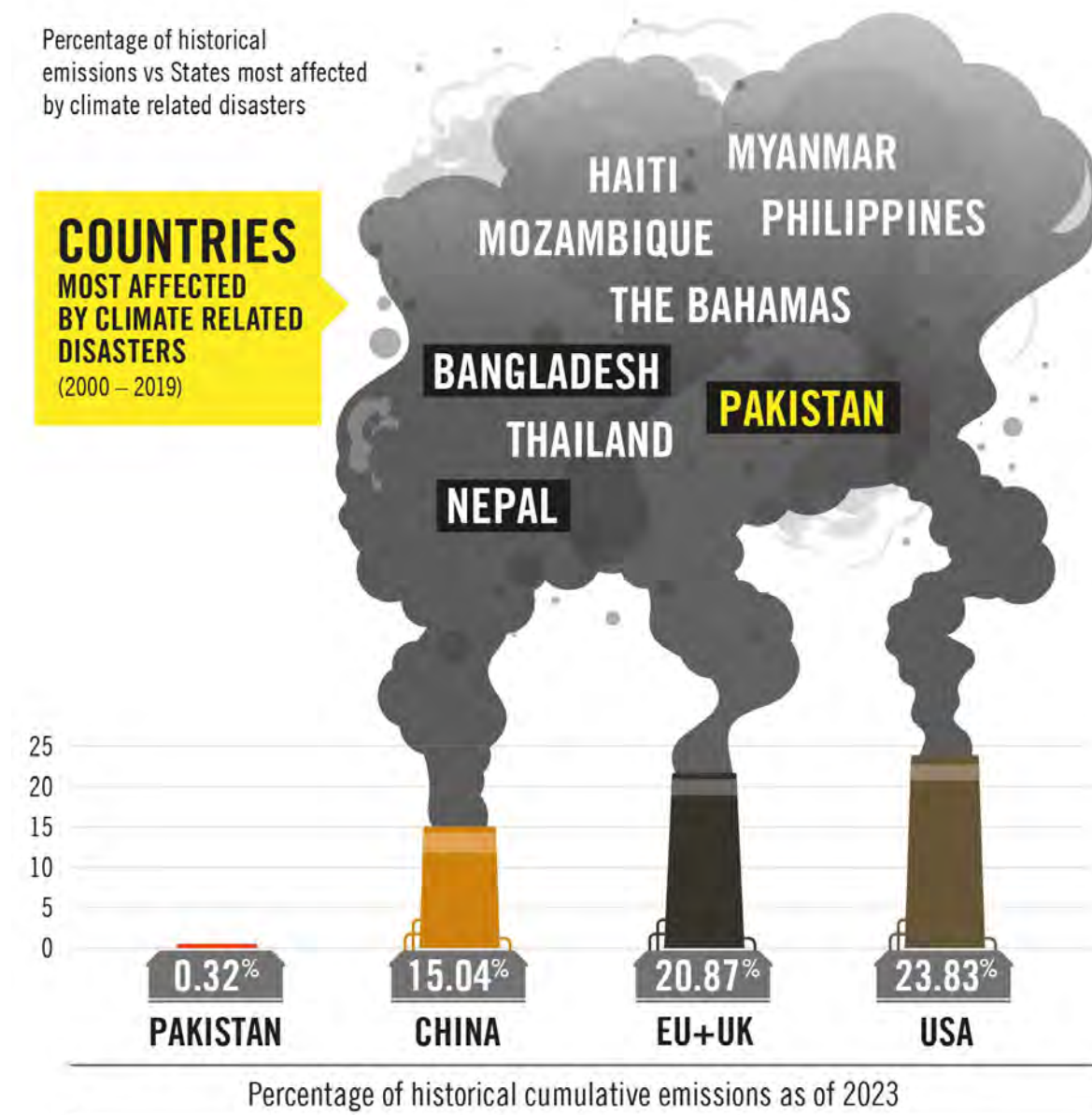
15 European Commission, EDGAR - Emissions Database for Global Atmospheric Research: GHG emissions of all world countries 2023 Report, https://edgar.jrc.ec.europa.eu/report_2023#emissions_table (accessed on 25 October 2024).

16 Germanwatch, Global Climate Risk Index 2021, <https://www.germanwatch.org/en/19777>, p.13.

17 International Institute for Environmental Development, “Poorest countries at greatest risk of losses and damage from climate change”, 25 August 2022, <https://www.iied.org/poorest-countries-greatest-risk-losses-damage-climate-change>.

18 Intergovernmental Panel on Climate Change (IPCC), “Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change”, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf, p. 42.

including droughts, fires, flooding and heatwaves.¹⁹ In this report, a heatwave is defined as multiple consecutive days of unusually hot temperatures.²⁰



¹⁹ IPCC, “Climate Change 2023: Synthesis Report” (previously cited), p. 51.

²⁰ While there is no universally agreed-upon definition of a heatwave, the World Meteorological Organization (WMO) defines a heat wave as a period of marked and unusually hot weather persisting for at least two consecutive days. For more information see: WMO, Guidelines on the definition and characterization of extreme weather and climate events”, 2023, <https://digitallibrary.un.org/record/4012890?v=pdf>, p.5. The Pakistan Meteorological Department defines a heatwave as when the maximum temperature reaches 40°C in flat areas and 300°C in mountainous areas with an increase of normal temperature by 4.50C to 6.40C. See: Pakistan, Khyber Pakhtunkhwa Province, PDMA, “Annual Report 2022”, <https://pdma.gov.pk/sub/uploads/Annual%20Report%202022.pdf>, p.25.

Average temperatures in Pakistan are also rising, and they pose a greater risk given the already hot temperatures the country experiences much of the year.²¹ One study found that the heatwave that affected much of Pakistan and India in March and April 2022 was made 30 times more likely by climate change, and such heatwaves will become even more frequent in the future.²² In addition to rising temperatures, Pakistan is also experiencing higher humidity levels, with one study finding that humidity increased 6.2% across Pakistan between 1961 and 2007.²³ Humidity exacerbates extreme heat and can make typical cooling methods (such as the use of fans) less effective.²⁴ Major cities in Pakistan, including Karachi,²⁵ Lahore,²⁶ Multan²⁷ and Jacobabad²⁸ have all experienced intense heatwaves in recent years, leading to high mortality as well as lost livelihoods. Whilst urbanization and loss of urban tree coverage contribute to extreme heat in densely populated areas,²⁹ predominantly rural areas such as Balochistan have also experienced prolonged bouts of extreme heat.³⁰

Extreme heat is driving an increase in monsoon rainfall in Pakistan, leading to the kind of massive flooding that Pakistan experienced in 2022. One study found that the 2022 floods, as well as the massive floods of 2010, were both driven in part by abnormally hot spring and summer seasons, which amplified low pressure areas over the Arabian Sea, facilitating much more intense rainfall than usual.³¹ In August 2022 alone, Sindh and Balochistan saw 726% and 590% of their average monthly rainfall, respectively.³² Pakistan as a whole received 243% more rainfall than usual during this period, making it the wettest August since records began in 1961.³³ The same study concluded that the maximum five-day rainfall over

21 World Bank, *Climate Risk Country Profile: Pakistan*, 2021, <https://openknowledge.worldbank.org/entities/publication/1fee7f49-7fe1-5642-befb-6b283539fd0c>

22 Mariam Zachariah and others, "Climate Change made devastating early heat in India and Pakistan 30 times more likely", World Weather Attribution, 23 May 2022, <https://www.worldweatherattribution.org/climate-change-made-devastating-early-heat-in-india-and-pakistan-30-times-more-likely>

23 Maida Zahid and Ghulam Rasul, "Rise in Summer Heat Index over Pakistan", 2010, Pakistan Journal of Meteorology, Volume 6, Issue 12, https://www.pmd.gov.pk/rnd/rnd_files/vol6_issue12/8_Rise%20in%20Summer%20Heat%20Index%20over%20Pakistan.pdf, p. 95.

24 Zahid and Rasul, "Rise in Summer Heat Index over Pakistan" (previously cited).

25 For more information on heatwaves in Karachi, see Usman Ghuman and Jennifer Horney, "Characterizing the Impact of Extreme Heat on Mortality, Karachi, Pakistan, June 2015", June 2016, Prehospital and Disaster Medicine, Volume 31, Issue 3, <https://doi.org/10.1017/S1049023X16000273>; Pakistan Ministry of Climate Change, Technical Report on Karachi Heat wave June 2015, July 2015, <https://mocc.gov.pk/SiteImage/Misc/files/Final%20Heat%20Wave%20Report%203%20August%202015.pdf>

26 For more information on heatwaves in Lahore, see: Pakistan, Lahore Government, The Urban Unit, "Heatwave Management Plan of Lahore (2022-2025)", 2022, https://urbanunit.gov.pk/Download/publications/Files/8/2023/HWMP_Lahore_Final%20-final.pdf

27 For more information on heatwaves in Multan, see: Anwar Hussain and others, "Weather shocks, coping strategies and farmers' income: A case of rural areas of district Multan, Punjab", 2020, Weather and Climate Extremes, Volume 30, <https://doi.org/10.1016/j.wace.2020.100288>

28 Amnesty International, *A Burning Emergency: Extreme Heat and the Right to Health in Pakistan* (Index: ASA 33/6823/2023), 4 June 2023, <https://www.amnesty.org/en/documents/asa33/6823/2023/en>

29 NASA Earth Observatory, "Beating the Heat in Pakistan", 17 July 2024, <https://earthobservatory.nasa.gov/images/153065/beating-the-heat-in-pakistan>

30 The Express Tribune, "Balochistan experiences extreme heat, temperatures hit 47°C in several areas", 13 September 2024, <https://tribune.com.pk/story/2495895/balochistan-experiences-extreme-heat-temperatures-hit-470c-in-several-areas>

31 Friederike Otto and others, "Climate change increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan", 17 March 2023, Environmental Research: Climate, Volume 2, Number 2, <https://iopscience.iop.org/article/10.1088/2752-5295/acbfd5/meta#fnref-erclacbfd5bib75>

32 Otto and others, "Climate change increased extreme monsoon rainfall, flooding" (cited previously).

33 Otto and others, "Climate change increased extreme monsoon rainfall, flooding" (cited previously).

Sindh and Balochistan was 75% more intense than it would have been if the climate had not warmed by 1.2°C, and that climate change significantly contributed to the intensity of the floods.³⁴

In 2024, Pakistan continued to experience extreme weather. Karachi faced a prolonged heatwave, with temperatures in June and July reaching over 40°C; when combined with the city's humidity, the temperature felt closer to 50°C.³⁵ Above-average temperatures continued into the fall: October and November 2024 were the warmest on record in Pakistan.³⁶ The country also experienced more than double its average rainfall nationally in April 2024, with some regions experiencing significantly more, such as Balochistan, which received 437% of its usual rainfall in that month.³⁷ In July and August 2024, Pakistan received 51% above average rainfall nationally.³⁸

1.3 DEMOGRAPHY

Pakistan is the world's fifth-most populous nation, with an estimated 241 million people.³⁹ It is ethnically and linguistically diverse. The largest ethnic group are Punjabis, who make up an estimated 45% of the population, followed by Pashtuns, Sindhis, Saraikis, Baloch, Muhajirs and others.⁴⁰ According to the 2023 census, the vast majority of the population is Muslim, though there are approximately 3.3 million Christians and 3.9 million Hindus living in the country; almost all of the latter live in Sindh, in the south-west.⁴¹ The literacy rate for people over 15 years old is less than 60%.⁴² For women it is only 40-45%.⁴³ Pakistan experiences relatively high rates of poverty: in 2023, the poverty rate rose to 39.4%, a five-percent increase that the World Bank attributed to rising global food and fuel prices and the catastrophic impact of

34 Otto and others, "Climate change increased extreme monsoon rainfall, flooding" (cited previously).

35 BBC, "Deaths mount as Pakistan swelters in heatwave", 26 June 2024, <https://www.bbc.com/news/articles/cn05rz3w4x1o>

36 Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: October 2024", 4 November 2024, https://www.ncei.noaa.gov/monitoring-content/sotc/global/2024/oct/Pakistan_Monthly_Climate_Summary_Oct_2024.pdf; Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: November 2024", 3 December 2024, https://www.ncei.noaa.gov/monitoring-content/sotc/global/2024/nov/Pakistan_Monthly_Climate_Summary_Nov_2024.pdf

37 Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: April 2024", 3 May 2024, https://cdpc.pmd.gov.pk/Pakistan_Monthly_Climate_Summary_Apr_2024.pdf

38 The Express Tribune, "PMD confirms record rainfall in monsoon", 21 October 2024, <https://tribune.com.pk/story/2504179/pmd-confirms-record-rainfall-in-monsoon>

39 World Bank, *Population total – Pakistan*, https://data.worldbank.org/indicator/SP.POP.TOTL?locations=UG.-PK&most_recent_value_desc=true (accessed 29 November 2024); see also: Pakistan Bureau of Statistics, *Area, Population by Sex, Sex Ratio, Population Density, etc. – 2023 Census*, undated, https://www.pbs.gov.pk/sites/default/files/population/2023/tables/table_1_national.pdf

40 The World Factbook, *Pakistan*, <https://www.cia.gov/the-world-factbook/countries/pakistan> (accessed 29 November 2024).

41 Pakistan Bureau of Statistics, *Population by Sex, Religion and rural/urban – 2023 census*, undated, https://www.pbs.gov.pk/sites/default/files/population/2023/tables/table_9_national.pdf (accessed 1 April 2025).

42 World Bank, *Literacy rate, adult total (% of people ages 15 and above) – Pakistan*, <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=PK> (accessed 29 November 2024).

43 World Bank, *Literacy rate, adult female (% of females ages 15 and above) – Pakistan*, <https://data.worldbank.org/indicator/SE.ADT.LITR.FE.ZS?locations=PK> (accessed 29 November 2024).

the 2022 floods.⁴⁴ Textiles and agriculture are the country's two largest industries.⁴⁵ Approximately 60% of the population lives in rural areas.⁴⁶

Pakistan is a young country, and about 45% of its population are children.⁴⁷ But like many developing countries, Pakistan is ageing rapidly: according to the UN, adults over 60 made up 6.7% of the population in 2023, and will make up 12.9% of the population by 2050.⁴⁸ The life expectancy for older women is 66.8 years, and for older men 65 years. However, if a person reaches 60, women are likely to live another 18 years, and men another 17.5 years, on average.⁴⁹

Citizens of Pakistan are typically registered with the National Database and Registration Authority (NADRA). NADRA issues a birth certificate, formally known as a Child Registration Certificate or a B-form, to any child, and a National Identity Card (NIC) with a 13-digit code, name, photo, date of birth and other information to any citizen over 18. An NIC can be used to access financial or other services and to vote, among other things.⁵⁰ NADRA says that it has issued NICs to 96% of adults in Pakistan, though some human rights organizations have found significant gaps in registration, particularly among migrants, women and other marginalized groups.⁵¹ In rural communities, where children were not typically born in hospitals, Amnesty International noted several instances in which the birth of a child was not registered.⁵² The vast majority of adults interviewed by Amnesty International possessed and were able to show their NIC card, though several people did not have cards.⁵³ Often, particularly for older people, date of birth on registration cards was approximate, listing only the year of birth.⁵⁴

People with disabilities in Pakistan can register with the government to receive a so-called “disability certificate”. They can apply through their provincial government’s Ministry of Social Affairs; in Sindh people can apply via the Department of Empowerment of Persons with Disabilities, and in Punjab via a district

44 World Bank, *Pakistan Development Update October 2023: Restoring Fiscal Sustainability*, October 2023, <https://thedocs.worldbank.org/en/doc/cfd9113f24c548efdc86dba482a5e2cf-0310062023/pakistan-development-update-october-2023-restoring-fiscal-sustainability>

45 Pakistan Readymade Garments Manufacturers and Exporters Association (PRGMEA), *About Pakistan*, undated, <https://www.prgmea.org/pakistan-industry> (accessed on 29 November 2024).

46 Pakistan Bureau of Statistics, *Area, Population by Sex, Sex Ratio, Population Density, etc. – 2023 Census* (previously cited).

47 UNICEF, *Country Office Annual Report 2020*, <https://www.unicef.org/media/102551/file/Pakistan-2020-COAR.pdf>, p. 1.

48 UN Department of Economic and Social Affairs (UN DESA), *World Population Ageing: Highlights*, 2017, https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/May/un_2017_worldpopulationageing_highlights_0.pdf. The Pakistan government, as of a 2023 national census, puts the number of people over 60 at slightly lower, at 5.6% of the population, see: Pakistan Bureau of Statistics, *Population by Selected Age Group, Sex and Rural/Urban – 2023 census*, undated, https://www.pbs.gov.pk/sites/default/files/population/2023/tables/table_5_national.pdf (accessed 1 April 2025).

49 UN DESA, *World Population Ageing: Highlights* (previously cited), p. 30.

50 NADRA, *Computerized National Identity Card (CNIC)*, <https://www.nadra.gov.pk/computerized-national-identity-card-cnrc/> (accessed 29 November 2024).

51 Al Jazeera, “Millions in Pakistan without digital ID card: Rights activists”, 26 July 2022, <https://www.aljazeera.com/news/2022/7/26/millions-in-pakistan-without-digital-id-card-rights-activists>; see also: Reuters, “Pakistan’s digital ID card locks out millions”, 26 July 2022, <https://www.reuters.com/article/idUSL8N2YM1J5>

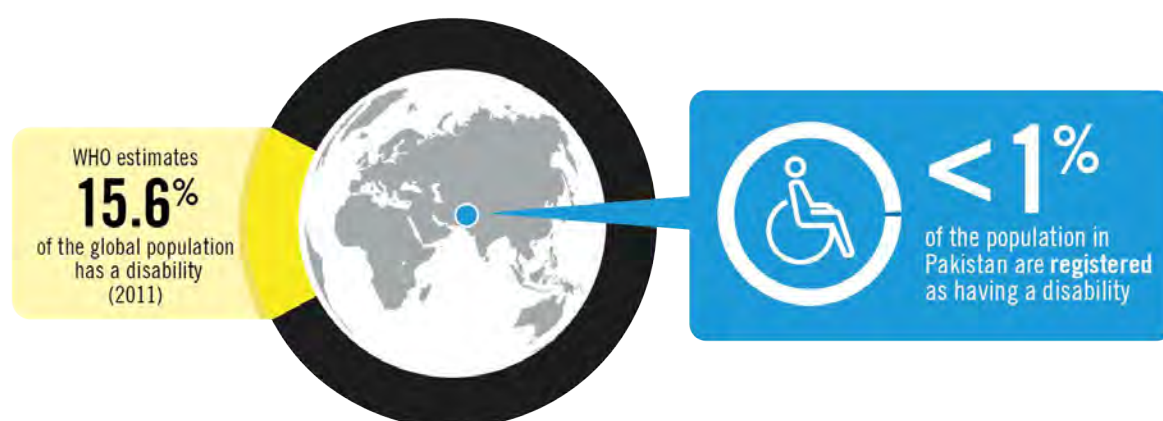
52 Interviews, April 2024.

53 Interviews, April 2024.

54 Interviews, April 2024.

government-appointed assessment board.⁵⁵ The NIC of a person registered with a disability displays a small wheelchair sign.⁵⁶ However, very few people with disabilities interviewed by Amnesty International were formally registered with the government. While the WHO estimates that 16% of the global population has a disability,⁵⁷ only 370,000 adults and children, or significantly less than 1% of the population, are registered as such in Pakistan.⁵⁸ Organizations of people with disabilities said these statistics were an extreme undercount, and reflect bureaucratic and logistical hurdles that people with disabilities face when registering for a disability certificate, such as visits to specific health centres or government offices that may be physically or geographically difficult to access.⁵⁹ Disability rights advocates also said that lack of awareness, particularly among family members of people with disabilities, resulted in many people not knowing about the disability certificate or the benefits of applying.⁶⁰

Percentage of Pakistani people registered as having a disability vs. Global estimated percentage



1.4 AT-RISK GROUPS AND CLIMATE DISASTERS

Amnesty International conducted a literature review of scientific studies about the impacts of flooding and heatwaves on at-risk groups. This included 51 scientific studies that contained findings about mortality and

55 Pakistan, Sindh Province, Department of Empowerment of Persons with Disabilities, "About Us", <https://depd.sindh.gov.pk/> (accessed 25 February 2025). See also: Pakistan, Punjab Province, Social Welfare & Bait-UI-Maal Department, "Assessment & Rehabilitation of Persons with Disabilities", https://swd.punjab.gov.pk/disabled-assessment_and_rehabilitation (accessed 25 February 2025).

56 Interviews, April 2024.

57 WHO, *Disability*, 7 March 2023, <https://www.who.int/news-room/fact-sheets/detail/disability-and-health#:~:text=Key%20facts,1%20in%206%20of%20us> (accessed 29 November 2024).

58 Pakistan Bureau of Statistics, "Disability Details", 28 February 2021, https://www.pbs.gov.pk/sites/default/files/disability/disability_data_28252021.pdf

59 Dawn, "Need to address gap between actual population and registered number of persons with disabilities stressed", 2 September 2023, <https://www.dawn.com/news/1773635/need-to-address-gap-between-actual-population-and-registered-number-of-persons-with-disabilities-stressed>; see also: Humanity & Inclusion, *Pakistan Country Card – Update*, December 2022, https://www.hi-us.org/sn_uploads/country/Country-Card-Pakistan-Internal-2022.pdf

60 Interview with Muhammad Akram, Director of Danishkadah, 14 April 2024; remote interview with Yusra Gilani, 21 May 2024.

morbidity, ten of which were systematic reviews of existing literature. These studies are described below. Most studies found by Amnesty International focused on older people and children. There was significantly less literature available on the impact of climate-related events on pregnant women and particularly on people with disabilities. This may be, in part, due to the absence of comprehensive or disaggregated data available about people with disabilities, a problem Amnesty International has encountered in many emergency contexts in which it has conducted research.⁶¹

FLOODING

Many studies, particularly those from developed countries, show that risk-taking behaviour is a significant contributor to deaths during a flood. A 2021 study analysing over 6,000 flood fatalities in the United States found that 86% of those who died were either driving or walking through floodwaters at the time, indicating that these victims most likely underestimated the risks of doing so.⁶² The World Health Organization (WHO) found that in Europe approximately 40% of flood-related fatalities were due to risk-taking activities.⁶³ Another analysis of small-scale flooding in Europe and the United States found that 70% of deaths were of men, which the authors attributed to men more likely being involved both in emergency responses and in risk-taking behaviour.⁶⁴

This dynamic changes significantly, according to researchers, in “high-fatality events with more severe flood impact”.⁶⁵ During such events, at-risk groups such as children, older people and people with disabilities may not be able to evacuate to safety quickly. Studies found that in extreme floods, children and older people—particularly older women—are more likely to drown than other age groups.⁶⁶ One study conducted after the 1991 Bangladesh cyclone found that flood-related mortality was highest amongst children under 10 years old (26%) and women over 40 (31%).⁶⁷ During Hurricane Katrina, one of the deadliest floods in United States history, nearly half of the victims were over 75 years old.⁶⁸ A systematic review of mortality data from 761 flood-affected communities worldwide found that mortality increased amongst communities with the highest proportions of people over age 65, as well as in communities with “low socioeconomic status”.⁶⁹

61 Amnesty International, *Persons with Disabilities in Situations of Risk and Humanitarian Emergencies: Submission to the Committee on the Rights of Persons with Disabilities on Article 11* (Index: IOR 40/6454/2023), 13 March 2023, <https://www.amnesty.org/en/documents/ior40/6454/2023/en>, pp. 5-6.

62 Zhongyu Han and Hatim O. Sharif, “Analysis of Flood Fatalities in the United States, 1959–2019”, July 2021, *Water*, Volume 13, Issue 13, <https://www.mdpi.com/2073-4441/13/13/1871>

63 WHO Regional Office for Europe, *Floods: Climate Change and Adaptation Strategies for Human Health*, 2002, <https://iris.who.int/bitstream/handle/10665/347625/WHO-EURO-2002-3878-43637-61324-eng.pdf>

64 S.N. Jonkman and J.K. Vrijling, “Loss of Life Due to Floods”, May 2008, *Journal of Flood Risk Management*, Volume 1, Issue 1, <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1753-318X.2008.00006.x>

65 S.N. Jonkman and J.K. Vrijling, “Loss of Life Due to Floods” (previously cited).

66 S.N. Jonkman and J.K. Vrijling, “Loss of Life Due to Floods” (previously cited).

67 C. Bern and others, “Risk factors for mortality in the Bangladesh cyclone of 1991”, 1993, *Bulletin of the World Health Organization*, Volume 71, Issue 1, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2393441>

68 Joan Brunkard and others, “Hurricane Katrina Deaths, Louisiana, 2005”, December 2008, *Disaster Medicine and Public Health Preparedness*, Volume 2, Issue 4, <https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/hurricane-katrina-deaths-louisiana-2005/8A4BA6D478C4EB4C3308D7DD48DEB9AB>

69 Zhengyu Yang and others, “Mortality risks associated with floods in 761 communities worldwide: time series study”, *BMJ*, October 2023, Volume 383, <https://pubmed.ncbi.nlm.nih.gov/37793693>

Amnesty International and other human rights organizations have documented how in emergency situations people with disabilities often face elevated risks: transport for evacuations and shelter are often not physically accessible, information about evacuation routes is not always communicated to them or is communicated in ways that are inaccessible to them, and people with intellectual or psychosocial disabilities face the additional threat of targeted violence.⁷⁰ Unfortunately, most scientific studies on flooding risk do not include information about disability. This is despite prominent examples that demonstrate the risks that people with disabilities face during floods. For example, in floods that killed 143 people in Germany in 2021, 12 people with disabilities living in an understaffed care home were unable to escape and drowned.⁷¹ One study, which analysed nearly 1,000 deaths during Hurricane Katrina in the United States in 2005, found that 103 victims were nursing home residents and 168 were in-patient hospital residents. While not explicitly stated in research findings, there is a very high likelihood that these were individuals with disabilities and/or serious health conditions.⁷²

AFTER FLOODS: WATER-BORNE DISEASE

Flooding brings with it not just the immediate risk of death by drowning, but also risks from water-borne diseases. Flooding exposes people to contaminated water, which is clearly linked to the spread of diseases such as cholera, diarrhoea and typhoid.⁷³ This is particularly notable in Pakistan, where under normal circumstances only 36% of the water supply system is considered safe for consumption.⁷⁴

During the 2022 floods, many people were forced to drink from the floodwaters or from contaminated groundwater sources.⁷⁵ This quickly led to the spread of disease. During the 2022 floods, 1.4 million people presented symptoms of Acute Watery Diarrhoea, in many cases related to cholera.⁷⁶ The UN's Office for the Coordination of Humanitarian Affairs (UN OCHA) said that the rate of diarrhoea as of October 2022 was at least five times higher than normal, particularly in Sindh and Balochistan provinces.⁷⁷

70 For more information see: Amnesty International, *Persons with disabilities in situations of risk and humanitarian emergencies: Submission to the Committee on the Rights of Persons with Disabilities on Article 11* (Index: IOR 40/6454/2023), 13 March 2023, <https://www.amnesty.org/en/documents/ior40/6454/2023/en>

71 New York Times, "‘A Special Sadness’: Floods Bring Death to a German Care Home", 17 July 2021, <https://www.nytimes.com/2021/07/17/world/europe/germany-floods.html>

72 Joan Brunkard and others, "Hurricane Katrina Deaths, Louisiana, 2005" (previously cited).

73 The most common water-borne diseases include typhoid, cholera, giardia, E. Coli, dysentery, and Hepatitis A. For more information see: LifeWater, "7 Most Common Waterborne Diseases (and How to Prevent Them)", 23 May 2019, <https://lifewater.org/blog/7-most-common-waterborne-diseases-and-how-to-prevent-them>

74 UNICEF, "More than 10 million people, including children, living in Pakistan's flood-affected areas still lack access to safe drinking water", 21 March 2023, <https://www.unicef.org/press-releases/more-10-million-people-including-children-living-pakistans-flood-affected-areas>

75 Interviews, April 2024.

76 WHO Pakistan, *Flood Situation Report, Issue #7*, 18 November 2022, <https://www.emro.who.int/images/stories/pakistan/pakistan-floods-situation-report-7.pdf?ua=1>

77 UN OCHA, *Pakistan: 2022 Monsoon Floods - Situation Report No. 10*, 29 October 2022, <https://www.unocha.org/publications/report/pakistan/pakistan-2022-monsoon-floods-situation-report-no-10-28-october-2022>

Diarrhoea, which can lead to dehydration, is particularly deadly in young children and older adults.⁷⁸ In 2016, diarrhoea accounted for an estimated 1.6 million deaths worldwide, including approximately 446,000 children under five years old and 694,010 adults over 70.⁷⁹ Over half of all diarrhoea-related deaths worldwide occurred in South Asia, totalling more than 870,000, including an estimated 101,927 children under five and 508,455 people over 70.⁸⁰ South Asia thus had the highest number of diarrhoea-related deaths among older adults in the world, and the second-highest among children under five, after sub-Saharan Africa

According to the UN, diarrhoea was responsible for 14.71% of deaths in children under five in Pakistan in 2021, making it the third-leading cause of death for that age group.⁸¹ Overall, thanks to public health initiatives, the number of global deaths among children under five from diarrhoea has decreased by 56% since 2000.⁸² In comparison, there has been a slight increase in the number of deaths among older people from diarrhoea, partly due to demographic ageing. Authors of a major 2016 study on global diarrhoea deaths, while celebrating the progress made on child mortality, suggested that “the neglect of the burden [of diarrhoea] in adults will have increasingly negative consequences” amidst global ageing.⁸³

Finally, exposure to floods increases the spread of respiratory infections.⁸⁴ One study of 761 flood-affected communities globally found a notable increase in respiratory-related mortality within 60 days of flooding, which particularly affected communities with large populations of older adults.⁸⁵

AFTER FLOODS: MOSQUITO-BORNE DISEASE

Standing floodwaters are potent breeding grounds for mosquitoes. In 2022, this led to a massive surge in mosquito-borne disease in Pakistan. According to the WHO, floods in 2022 led to 2.1 million more cases of malaria than in 2021.⁸⁶ This marked a five-fold increase in the incidence of malaria, from 2.2 cases to 11.5 cases per 1,000 people.⁸⁷ The surge was particularly notable in hard-hit areas, such as Sindh and

78 Mayo Clinic, Diseases & Conditions: Dehydration, 14 October 2021, <https://www.mayoclinic.org/diseases-conditions/dehydration/symptoms-causes/syc-20354086>

79 GBD 2016 Diarrhoeal Disease Collaborators, “Estimates of the global, regional, and national morbidity, mortality, and aetiologies of diarrhoea in 195 countries: a systematic analysis for the Global Burden of Disease Study 2016”, *Lancet Infectious Diseases*, Volume 18, Issue 11, <https://pmc.ncbi.nlm.nih.gov/articles/PMC6202444>

80 GBD 2016 Diarrhoeal Disease Collaborators, “Estimates of the global, regional, and national morbidity, mortality, and aetiologies of diarrhoea” (previously cited).

81 Note: This figure excludes deaths among children under one month old. UN Inter-agency Group for Child Mortality Estimation (UN IGME), Most recent stillbirth, child and adolescent mortality estimates, childmortality.org (accessed 29 November 2024).

82 GBD 2016 Diarrhoeal Disease Collaborators, “Estimates of the global, regional, and national morbidity, mortality, and aetiologies of diarrhoea in 195 countries: a systematic analysis for the Global Burden of Disease Study 2016”, November 2018, Volume 18, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6202444>

83 GBD 2016 Diarrhoeal Disease Collaborators (previously cited).

84 The Lancet Respiratory Medicine, “Flooding and excessive rainfall risk respiratory health”, February 2024, Volume 12, Issue 2, [https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(24\)00004-3/fulltext#:~:text=Flooding%20increases%20the%20risk%20of,%2C%20and%20water%2Dborne%20pathogens](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(24)00004-3/fulltext#:~:text=Flooding%20increases%20the%20risk%20of,%2C%20and%20water%2Dborne%20pathogens)

85 Zhengyu Yang and others, “Mortality risks associated with floods in 761 communities worldwide: time series study” (previously cited).

86 WHO, *World malaria report 2023*, 30 November 2023, <https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2023>, p. 19.

87 WHO, *World Malaria report 2023* (previously cited), p. 78.

Balochistan.⁸⁸ The WHO also reported a surge in reported dengue cases in September 2022.⁸⁹ The Lancet has found that between 1951-1960 and 2014-23, the amount of land globally suitable for the two most dangerous malaria-causing parasites increased more than 17% and 21%.⁹⁰

In its most severe forms, malaria can lead to cerebral malaria, a neurological manifestation of the disease that can result in abnormal behaviour, unconsciousness, seizures, coma, and death. In those who survive cerebral malaria, children in particular, may be left with limited mobility, difficulty speaking, deafness, or blindness.⁹¹ Other severe outcomes from malaria include anaemia, renal failure, severe jaundice, and pulmonary oedema.⁹²

Children under five are particularly susceptible to malaria because their immune systems are not fully developed, in comparison to older children and adults who may have had previous exposure to the disease.⁹³ According to UNICEF, 76% of global malaria deaths are of children under five years old.⁹⁴ A study in The Lancet found that malaria deaths among children under five in sub-Saharan Africa made up more than half of the 1.24 million global malaria deaths in 2010.⁹⁵ However, that same study noted changing trends outside of Africa. In South and Southeast Asia, where malaria is steadily decreasing, and thus adults have less immunity from prior exposure, mortality rates among people over the age of five has increased; deaths from that region now make up the bulk of global malaria deaths among people over age five.⁹⁶

Another study of deaths from malaria in several South and Southeast Asian countries found that the mortality rate among children under 10 years old was 6.1%, compared with 36.5% among those patients over 50 years old (the highest of any group).⁹⁷ Studies from Europe, with a large older population, have shown that the fatality rate for patients over 60 admitted to hospitals for malaria was six times higher than for younger patients, and they were three times more likely to develop cerebral complications from malaria.⁹⁸

88 WHO, "Malaria: Pakistan", 17 October 2022, <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON413>

89 WHO, "Dengue: Pakistan", 13 October 2022, <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON414>

90 Marina Romanello and others, "The 2024 report of the Lancet Countdown on health and climate change: facing record-breaking threats from delayed action"; 9 November 2024, The Lancet, Volume 404, Issue 10465 [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01822-1/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01822-1/abstract), p. 1860.

91 Centers for Disease Control (CDC), Clinical Features of Malaria, 20 March 2024, <https://www.cdc.gov/malaria/about/disease.html> (accessed 29 November 2024).

92 CDC, Clinical Features of Malaria (previously cited).

93 Ritesh Ranjha and others, "Age-specific malaria vulnerability and transmission reservoir among children", 17 November 2023, Global Pediatrics, Volume 6, <https://pubmed.ncbi.nlm.nih.gov/38440360>

94 UNICEF, Malaria data, <https://data.unicef.org/topic/child-health/malaria/> (accessed 29 November 2024).

95 Christopher Murray and others, "Global malaria mortality between 1980 and 2010: a systematic analysis", 4 February 2012, The Lancet, Volume 379, Issue 9814, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(12\)60034-8/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)60034-8/abstract), p. 425.

96 Murray, "Global malaria mortality between 1980 and 2010" (previously cited), p. 421.

97 Arjen M. Dondorp and others, "The Relationship between Age and the Manifestations of and Mortality Associated with Severe Malaria", 5 June 2008, Clinical Infectious Disease, Volume 47, <https://pubmed.ncbi.nlm.nih.gov/18533842>, p. 153.

98 N. Muhlberger and others, "Age as a Risk Factor for Severe Manifestations and Fatal Outcome of Falciparum Malaria in European Patients: Observations from TropNetEurop and SIMPID Surveillance Data", 2 April 2003, Clinical Infectious Diseases, Volume 36, <https://pubmed.ncbi.nlm.nih.gov/12684911>

Dengue fever, a mosquito-borne illness common in tropical and subtropical climates, has shown a similar dynamic: according to one global study, while deaths are highest amongst both those under five and over 70 years old, fatality rates have gradually decreased amongst children while increasing for those over 70.⁹⁹ According to The Lancet, global burden of dengue has increased sharply over the last two decades, driven in part by more suitable climatic conditions: average annual transmission risks have increased by 46.3% and 10.7% for the two mosquitoes that most commonly spread dengue.¹⁰⁰ In 2024, a year of above-average temperature and flooding, Pakistan saw a significant rise in the number of dengue cases.¹⁰¹

Given the growing transmission rates of malaria and dengue due to climate change in Pakistan, more people in the country are likely to contract those diseases in the coming years. For older people and very young children, given their disproportionate vulnerability to severe outcomes from those diseases, this poses the biggest risk.

EXTREME HEAT

When exposed to high temperatures, people can experience various heat-related illnesses. The most common are heat exhaustion and heat stroke. Heat exhaustion is less severe, though it can involve vomiting, nausea, dizziness, rapid breathing and fatigue.¹⁰² Heat stroke is severe, and can quickly lead to death when untreated. People may experience fainting, hallucinations, seizures, slurred speech, and their bodies often fail to thermoregulate, meaning they will not be able to sweat and may even shiver instead.¹⁰³

Older people and very young children are disproportionately impacted by high temperatures. As we age, our bodies' cardiovascular functioning and thermoregulation deteriorate, undermining our ability to dissipate heat; studies show that these changes are detectable as young as 40 years old, but the most substantial differences become apparent in people after their mid-50s.¹⁰⁴ Other reasons that older adults are more at risk include chronic dehydration, preexisting conditions (such as cardiopulmonary diseases or diabetes), and use of certain medications.¹⁰⁵ In general, older people with underlying cardiovascular, respiratory or kidney conditions are at much higher risk: according to The Lancet, meta-analyses show that cardiovascular illness is the primary cause of death during heatwaves.¹⁰⁶ Extreme heat puts strain on the

99 Xiarong Yang and others, "Global burden for dengue and the evolving pattern in the past 30 years", December 2021, Journal of Travel Medicine, Volume 28, Issue 8, <https://academic.oup.com/jtm/article/28/8/taab146/6368502>

100 Romanello and others, "The 2024 report of the Lancet Countdown on health and climate change" (previously cited).

101 Shiza Aftab and others, "Dengue epidemic: Pakistan on high alert", 9 November 2024, The Lancet, Volume 404, [https://doi.org/10.1016/S0140-6736\(24\)02284-0](https://doi.org/10.1016/S0140-6736(24)02284-0)

102 Cleveland Clinic, "Heat Exhaustion and Heat Stroke" (previously cited).

103 Cleveland Clinic, "Heat Exhaustion and Heat Stroke" (previously cited).

104 WHO Europe, *Heat and health in the WHO European Region: updated evidence for effective prevention*, 2021, <https://iris.who.int/bitstream/handle/10665/339462/9789289055406-eng.pdf>, p. 77.

105 WHO Europe, *Heat and health in the WHO European Region* (previously cited), p. 101.

106 Kristie L. Ebi and others, "Hot weather and heat extremes: health risks", 21 August 2021, The Lancet, Volume 398, [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(21\)01208-3.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(21)01208-3.pdf), p. 699.

cardiovascular system, meaning that while the heat itself does not kill a person, it makes a heart attack or stroke more likely.¹⁰⁷ Dementia and Parkinson's disease, both linked with older age, are also risk factors.¹⁰⁸

A review of the scientific literature showed a clearly disproportionate impact of high temperatures on older people. For example, one analysis of over 60,000 heat-related deaths in 35 European countries in 2022 found that mortality steeply increased with age: 16 people per million died who were under 65 years old, compared to 160 per million in those aged 65-79, and 1,684 per million in those over 80 years old.¹⁰⁹ Studies from the United States,¹¹⁰ China,¹¹¹ and other parts of the world universally show that extreme heat leads to increased mortality among older people.¹¹² The Lancet found that heat-related deaths from 2013-2022 among people over 65 increased by 85% compared to 1991-2000.¹¹³ Heat-related deaths are expected to increase another 433% by 2041 if states fail to phase out fossil fuel extraction, production and use.¹¹⁴

Young children, and particularly infants, are also more vulnerable to heat. Their bodies contain more internal heat naturally, and they also have a greater body surface area ratio, meaning they absorb more heat from their environments than adults do. Children also have lower levels of sweat production than adults,¹¹⁵ and, without supervision and guidance, are also less likely to rehydrate when they lose fluid.¹¹⁶ Studies have shown that infant mortality increases during hotter periods: for example, an extensive study from Canada found that daily temperatures over 29°C were associated with 2.78 times greater chance of sudden infant death syndrome than days where temperatures were around 20°C.¹¹⁷ Heat is also a risk factor for pregnant women, and studies have shown that the risks of low birth-weight and pre-term birth increase during extreme heat.¹¹⁸ However, the WHO has said that the “thermal comfort needs” of many at-risk groups, including children and pregnant women, remain “understudied and poorly understood.”¹¹⁹

107 Kristie L. Ebi and others, “Hot weather and heat extremes: health risks” (previously cited).

108 WHO Europe, *Heat and health in the WHO European Region* (previously cited), p. 101.

109 Joan Ballester and others, “Heat-related mortality in Europe during the summer of 2022”, 10 July 2023, *Nature Medicine*, Volume 29, <https://www.nature.com/articles/s41591-023-02419-z>

110 Sameed Khatana and others, “Association of Extreme Heat With All-Cause Mortality in the Contiguous US, 2008- 2017”, 19 May 2022, *Jama Network Open*, Volume 5, <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2792389>

111 Tiantian Li and others, “Aging Will Amplify the Heat-related Mortality Risk under a Changing Climate: Projection for the Elderly in Beijing, China”, 20 June 2016, *Scientific Reports*, Volume 6, <https://www.nature.com/articles/srep28161>

112 Tarik Benmarhnia and others, “Vulnerability to Heat-related Mortality: A Systematic Review, Meta-analysis, and Meta-regression Analysis, 2015”, November 2015, *Epidemiology*, Volume 26, https://journals.lww.com/epidem/abstract/2015/11000/review_article__vulnerability_to_heat_related.2.aspx

113 Marina Romanello and others, “The 2023 report of the *Lancet* Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms”, 16 November 2023, *The Lancet*, Volume 402, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(23\)01859-7/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)01859-7/abstract)

114 Marina Romanello and others, “The 2023 report of the *Lancet* Countdown on health and climate change” (previously cited).

115 UNICEF, *Protecting Children from Heat Stress: A Technical Note*, May 2023, <https://www.unicef.org/media/139926/file/Protecting-children-from-heat-stress-A-technical-note-2023.pdf>

116 UNICEF, *Protecting Children from Heat Stress* (previously cited).

117 Nathalie Auger and others, “Ambient Heat and Sudden Infant Death: A Case-Crossover Study Spanning 30 Years in Montreal, Canada”, July 2015, *Environmental Health Perspectives*, Volume 123, <https://pubmed.ncbi.nlm.nih.gov/25748025>

118 WHO Europe, *Heat and health in the WHO European Region* (previously cited), p. 113.

119 WHO Europe, *Heat and health in the WHO European Region* (previously cited), p. 44.

Unlike research into flooding, there have been very few studies that focus on the impact of heatwaves in Pakistan. In a systematic review of 27 studies that examined the impacts of heat and cold in South Asia, researchers found that more than half of the studies focused on India, eight on Bangladesh, and just one on Pakistan and Nepal respectively.¹²⁰ Similarly, Amnesty International was able to identify only two studies that had focused specifically on heatwaves in Pakistan. The first looked at emergency room admissions to the Indus Hospital in Karachi during the 2015 heatwave in the city. The study found that the median age of patients admitted during the heatwave was 51.5, and the median age of patients who died was 57.5, showing the clear impact of heat on older adults in Pakistan as well.¹²¹ By contrast, the second study, similarly looking at heatwaves in Karachi in 2015, found no correlation between age or gender and heatwave deaths, though it did find a correlation between low income and low educational attainment and death.¹²²

People with disabilities across all ages are at higher risk for negative health outcomes as a result of heat, though the data is not as comprehensive as it is for some other groups. In South Korea, where disability statistics are relatively comprehensive (94% of persons with disabilities being formally registered with the government), a study of hospital admissions during heatwaves found that people with disabilities were more likely than people without disabilities in their respective age group to be admitted to the emergency department during a heatwave.¹²³ People who have brain lesion disorders (which can result from conditions such as dementia, strokes, or traumatic brain injury), women with disabilities, and people over 65 were at highest risk.¹²⁴ People with mental health conditions, such as schizophrenia, have been found to be at significantly higher risk for heat-related deaths, in part because their brains thermoregulate differently and also because antipsychotic medications raise body temperature.¹²⁵

120 Asya Dmitrova and others, “Association between ambient temperature and heat waves with mortality in South Asia: Systematic review and meta-analysis”, January 2021, *Environment International*, Volume 146, <https://pubmed.ncbi.nlm.nih.gov/33395923>

121 Syed Ghazanfar Saleem and others, “Risk Factors for Heat-Related Deaths During the June 2015 Heat Wave in Karachi, Pakistan”, 2017, *J Ayub Med Coll Abbottabad*, Volume 29, <https://pubmed.ncbi.nlm.nih.gov/28718257>

122 Ghumann and Horney, “Characterizing the Impact of Extreme Heat on Mortality, Karachi, Pakistan, June 2015” (previously cited).

123 Jinah Park and others, “Association between heat and hospital admissions in people with disabilities in South Korea: a nationwide, case-crossover study”, April 2024, *The Lancet: Planetary Health*, [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(24\)00027-5/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(24)00027-5/fulltext)

124 Jinah Park, “Association between heat and hospital admissions in people with disabilities in South Korea” (cited previously).

125 Science, “Schizophrenia pinpointed as a key factor in heat deaths”, 15 March 2023, <https://www.science.org/content/article/schizophrenia-pinpointed-key-factor-heat-deaths>

2 INVISIBLE DEATHS

Rising temperatures fuelled unprecedented rainfall in Pakistan in 2022 and 2024. In 2022, at least 8 million people were displaced after large swathes of the country received more than 500% of the usual average July and August rainfall.¹²⁶ In Sindh, located in the flat plain at the mouth of the Indus River, the water had nowhere to retreat. Families were displaced not just for a few days, but for weeks and sometimes months. They often had no access to potable water or mosquito nets. Many made shelters out of whatever they could find or salvage from their destroyed homes, leaving them exposed to rain and heat. Even when they returned to their homes, standing water nearby posed a severe health risk. The result was a public health disaster: malaria, dengue, cholera, typhoid and gastroenteritis surged, wiping out decades of public health advancements in some areas.¹²⁷ In 2024, above-average rains struck again, leaving communities that had yet to fully recover from the 2022 floods struggling to protect themselves from death and disease yet again.¹²⁸

In addition to flooding, 2022 and 2024 were years of unprecedented heat in Pakistan. March and April 2022 were the hottest on record, with average monthly temperatures more than 4°C and 5°C above the average recorded since 1961.¹²⁹ In May, temperatures remained above average, reaching 50°C in some parts of the country.¹³⁰ In 2024, Pakistan faced heatwaves yet again, particularly in Karachi in Sindh province, where temperatures in June and July reached 42°C, which when combined with the city's humidity made temperatures feel closer to 50°C.¹³¹ October and November 2024 were the warmest on

126 Otto and others, "Climate change increased extreme monsoon rainfall, flooding" (cited previously).

127 WHO, *World Malaria report 2023* (previously cited). See also: WHO, "Dengue: Pakistan" (previously cited); UN OCHA, *Pakistan: 2022 Monsoon Floods - Situation Report No. 10*, 29 October 2022, <https://www.unocha.org/publications/report/pakistan/pakistan-2022-monsoon-floods-situation-report-no-10-28-october-2022>

128 Pakistan, Meteorological Department, "Monsoon 2024 (1 July – 30 September) Report", 18 October 2024, [https://cdpc.pmd.gov.pk/Monsoon_2024_update/Pakistan_Monsoon_2024_Rainfall_Update.htm#:~:text=Monsoon%20rainfall%20during%202024%20was,total%20rainfall%20of%2012.1mm.&text=Monsoon%20rainfall%20was%20above%20average,over%20AJK%20\(%2D21%25\)](https://cdpc.pmd.gov.pk/Monsoon_2024_update/Pakistan_Monsoon_2024_Rainfall_Update.htm#:~:text=Monsoon%20rainfall%20during%202024%20was,total%20rainfall%20of%2012.1mm.&text=Monsoon%20rainfall%20was%20above%20average,over%20AJK%20(%2D21%25))

129 Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: March 2022", 8 April 2022, https://cdpc.pmd.gov.pk/Pakistan_Monthly_Climate_Summary_March_2022.pdf; Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: April 2022", 4 May 2022, https://cdpc.pmd.gov.pk/Pakistan_Monthly_Climate_Summary_April_2022.pdf

130 Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: May 2022", 6 June 2022, https://cdpc.pmd.gov.pk/Pakistan_Monthly_Climate_Summary_May_2022.pdf

131 Pakistan, Meteorological Department, "Pakistan Monthly Climate Summary: June 2024", 2 July 2024, https://cdpc.pmd.gov.pk/Pakistan_Monthly_Climate_Summary_Jun_2024.pdf. See also: BBC, "Deaths mount as Pakistan swelters in heatwave" (previously cited).

record in Pakistan.¹³² While less visible than flooding, heatwaves had an immense impact on the health of those affected. Because of the near total absence of any social safety net, most people were forced to continue working in dangerously hot conditions. When compounded by electricity outages, inaccessible healthcare, and a dense urban environment, these heatwaves led to many deaths.¹³³

Based on the research of IHHN and Amnesty International, there is strong indication to believe that the majority of deaths from climate change-induced causes are not recorded in official statistics in Pakistan. According to the Pakistan government's own estimates, fewer than 5% of deaths are captured in official records, creating a general void of data on mortality.¹³⁴ Official accounts by disaster management authorities put the number of those who died in the 2022 floods at 1,739 – already a shocking figure.¹³⁵ But the real number is likely much higher, as these official figures only count some types of deaths, such as immediate drowning or electrocution, leaving out those who died from infectious diseases and other secondary effects of the floodwater.¹³⁶ Data about mortality during heatwaves is even less reliable: in 2022, when temperatures reached 50°C in parts of Punjab province, home to 120 million people, there were zero officially recorded heat-related deaths.¹³⁷

Percentage of deaths and births registered by the Pakistani government



Data has the power to reveal and conceal. It can make some populations visible and others invisible. This report will show how older people and very young children, who are at highest risk from the spread of water- or mosquito-borne diseases and the least capable of enduring extreme heat, are the most likely to

¹³² Pakistan, Meteorological Department, “Pakistan Monthly Climate Summary: October 2024” (previously cited); “Pakistan Monthly Climate Summary: November 2024” (previously cited).

¹³³ Interview with Faisal Edhi, trustee of the Edhi Foundation, 26 September 2024, Karachi, Sindh, Pakistan.

¹³⁴ Pakistan, Ministry of Planning Development and Special Initiatives, “National Framework on CRVS Reforms” (previously cited).

¹³⁵ Pakistan, NDMA, “NDMA Floods SITREP – 2022”, 18 November 2022, <https://www.ndma.gov.pk/storage/sitreps/November2022/N2n1eEarMt6q6Rb8ZYwn.pdf>

¹³⁶ Interview with Zaheer Liaquat Baig, Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Punjab, Pakistan.

¹³⁷ Pakistan, PDMA Punjab, “Consolidated Heat wave report”, 7 June 2022, <https://pdma.punjab.gov.pk/system/files/Consolidated%20Heat%20wave%20report%2007-06-2022.pdf>.

go uncoun­ted. Pakistan is one of the coun­tries most affected by climate change in the world, but without a better understanding of those groups that are at highest risk, nei­ther the Pakistan government nor the international community can begin to address the harm wrought by climate change. The goal of this report is to shine a light on some of the uncoun­ted casualties of the climate crisis, and make visible those who are most at risk.

2.1 NO DATA

During heavy rains in July 2022, Abdul Latif was at home in Badin district when the roof caved in. Within a few hours, the whole village was flooded, forcing him and his six children to move to a nearby road that was elevated above the water. Like millions in Sindh province, Abdul Latif’s family lived on the road for a month, without access to food, clean water, or shelter.

Family members soon started getting sick. But the problems were particularly acute for Ashiq Ali, Latif’s three-year-old son, who had vomiting, diarrhoea and a swollen abdomen. To reach a health facility, Latif carried Ashiq Ali through knee-high water to the main road, where he got a ride to the nearest city. He was denied admission at a government hospital, where doctors said they lacked the medication and equipment to treat him. Latif turned to a private clinic, where he paid for his son to have an intravenous drip and other treatment. A few days later, after being brought home to the village, Ashiq Ali’s condition deteriorated. Eventually, he was rushed to IHHN’s Badin facility, where, according to hospital documentation, he died on 5 October 2022 of acute gastroenteritis.¹³⁸

“We asked the government to please provide us at least a tent so we can save our families,” Latif said. “I had only one son, and he died.”¹³⁹

The family did not apply for a death certificate for Ashiq Ali. This makes him one of the estimated 95% of deaths in Pakistan that go unrecorded, as deaths are only formally counted by the government if a person’s family applies for a death certificate.¹⁴⁰ Death certificates are not automatically issued when somebody dies, even if for example they die in a hospital, as this data is not shared between government sectors. The government data that does exist has virtually no disaggregation by age, gender, or even cause of death.¹⁴¹ For example, every death certificate shared by interviewees with Amnesty International stated the cause of death was “natural” and the type of death was “normal,” even when the person had died from drowning or other impacts of the extreme weather. Without better data, climate change-related deaths like Ashiq Ali’s remain largely invisible, both to policymakers in Pakistan and to the rest of the world.

¹³⁸ Hospital notes from IHHN, seen by Amnesty International.

¹³⁹ Interview with Abdul Latif, 14 January 2025, Badin, Sindh, Pakistan.

¹⁴⁰ Pakistan, Ministry of Planning Development and Special Initiatives, “National Framework on CRVS Reforms” (previously cited).

¹⁴¹ Pakistan, Ministry of Planning Development and Special Initiatives, “National Framework on CRVS Reforms” (previously cited), p. 4.

In interviews with 17 provincial and local government officials, Amnesty International learned that there were many barriers to collecting better mortality data during climate change-related disasters. First, hospital records are not linked to general mortality records.¹⁴² If somebody wants to report the death of a relative, they must separately approach their local government and obtain a death certificate. Hospital records serve as supporting documentation, but no more. One official in Badin district said: “The [local government] has no connection with hospitals. There is no data sharing. People have to report [deaths] to the local government, otherwise deaths are not recorded in statistics.”¹⁴³

The vast majority of people interviewed by Amnesty International, however, did not know the procedure for registering deaths or the necessity of doing so, as was the case with Ashiq Ali’s family. People almost invariably only registered a death when it was required for legal reasons, such as transferring land or other property.¹⁴⁴ This led to significant delays in reporting: in one extreme case, a person in Badin district who died in 2013 was not registered until 2024.¹⁴⁵ It also meant that the deaths of children and women, who were less likely to own property than men, were much less likely to be recorded. For example, Fehmida Kausar explained that when her grandmother, 75-year-old Rehmat Bibi, died following heat-related symptoms in 2022, she did not register the death: “She did not own any property or land, so we did not need a death certificate.”¹⁴⁶

Another major reason people did not register the deaths of their loved ones was because death certificates cost money. While this fee is small – typically PKR 200 or 300 (around US\$1) – it is often more if there are any delays in reporting the death.¹⁴⁷ People also usually had to pay for transportation and, in many rural areas, faced a literacy barrier.¹⁴⁸ For example, Ghulam Shabeer, whose one-year-old daughter died during the floods in Badin district in 2022, said he had registered neither her birth nor her death: “The fees [for registration] are about 200 or 300 rupees, but we had to give money to other people to fill out the form and for transport, so the total amount was more than PKR 2,500 [US\$9].”¹⁴⁹ For those in rural areas whose daily wages were often less than PKR 1,000 (less than US\$13), this was simply not worth the cost.

The Provincial Disaster Management Authorities (PDMAs) keep a separate tally of deaths during a disaster, based on information reported from district administrations.¹⁵⁰ In 2022, the disaster management authorities reported that more than 1,700 people had died as a result of the floods.¹⁵¹ However, Amnesty International found that the data from the PDMAs failed to comprehensively capture the full scope of

142 Interviews with local officials in Sindh and Punjab, August 2024.

143 Interview with Mohammad Afzal, 8 August 2024, Khoski, Sindh, Pakistan.

144 Interviews with local officials in Sindh and Punjab provinces, August 2024.

145 Interview with Mohammad Afzal, 8 August 2024, Khoski, Sindh, Pakistan.

146 Interview with Fehmida Kausar, 8 January 2025, Gurmani, Punjab, Pakistan.

147 Interviews with local officials in Sindh and Punjab, August 2024.

148 Interviews with local officials in Sindh and Punjab, August 2024.

149 Interview with Ghulam Shabeer, 14 January 2025, Badin, Sindh, Pakistan.

150 Interview with Zaheer Liaqat Baig, Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Punjab, Pakistan.

151 Pakistan, NDMA, “NDMA Floods SITREP – 2022”, 18 November 2022 (previously cited).

climate disasters. In the case of floods, PDMA data focused largely on sudden deaths, such as death by drowning, electrocution, or the collapse of a roof or a wall. Deaths by disease were not included, meaning that Ashiq Ali's death, had it been registered, would never have been deemed flood-related at all.¹⁵² Zaheer Liaqat Baig, Administrative Director of the Punjab PDMA, explained:

“Natural calamity deaths are usually only listed in cases of a sudden death situation like electrocution... Long-term issues with water[-borne] diseases that lead to death would not be included as it was not sudden.”¹⁵³

Monitoring of deaths during heatwaves is even more tenuous. In 2022, the Punjab PDMA said that there were zero deaths from heatstroke or heat exhaustion, despite prolonged heatwaves across the south of the province that caused 13,000 people to seek treatment for heat-related conditions.¹⁵⁴ In two visits to the region, Amnesty International identified at least 16 cases of people whose death in 2022 could credibly be linked to extreme heat, in that the person had been working or spending time outside during particularly hot weather and displayed recognized symptoms of heat-related illness, including dizziness, sweating, raised body temperature, and fainting.¹⁵⁵

Zaheer Liaqat Baig, Administrative Director of the Punjab PDMA, said that the reason PDMA data did not show heatwave deaths was because heat was rarely listed as a contributing factor to a death.¹⁵⁶ The Sindh PDMA similarly said that it did not record deaths if the cause was not explicitly listed as heatstroke on a death certificate, which it rarely was.¹⁵⁷ In June 2024, when record heat swept across Sindh, the Sindh PDMA said that there were 66 deaths (56 in Karachi) amidst more than 15,000 hospitalizations for heatstroke.¹⁵⁸

Heat deaths are challenging to capture in any country, as often those who die of heat-related causes have pre-existing medical conditions that significantly increase their susceptibility.¹⁵⁹ Even in high-income countries, such as the United States, this means that deaths are often listed as being the result of other factors, such as cardiac arrest, leading to an overall under-reporting of heat-related deaths.¹⁶⁰ As a result, many scientists argue in favour of using “excess deaths” – or those above the typical average

152 Interview with Zaheer Liaqat Baig, Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Punjab, Pakistan. Syed Salman Shah, the Director General of the Sindh PDMA, said that the 2022 flooding death count had included some cases of people who died from diseases in official displacement camps, although this number was very small.

153 Interview with Zaheer Liaqat Baig, Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Punjab, Pakistan.

154 Pakistan, PDMA Punjab, “Consolidated Heat wave report” (previously cited).

155 Mayo Clinic, Heat Exhaustion, <https://www.mayoclinic.org/diseases-conditions/heat-exhaustion/symptoms-causes/syc-20373250> (accessed 3 March 2025).

156 Interview with Zaheer Liaqat Baig, Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Punjab, Pakistan.

157 Interview by video call with Syed Salman Shah, Director General of the Sindh PDMA, 27 June 2024.

158 Pakistan, PDMA Sindh, “Situation Report for heatwave 2024”, 30 July 2024, <https://pdma.gos.pk/Documents/Heatwave/Heatwave%20Situation%20Reports%202024/Heatwave%20Daily%20Situation%20Report%2030-07-2024.pdf>

159 United States, Environmental Protection Agency (EPA), Climate Change Indicators: Heat-Related Deaths, <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths>, June 2024 (accessed 27 February 2025).

160 The New York Times, “Heat Kills Thousands in the U.S. Every Year. Why Are the Deaths So Hard to Track?”, 23 August 2024, <https://www.nytimes.com/2024/08/23/us/extreme-heat-deaths.html>

rate – to determine the relationship between extreme heat and mortality.¹⁶¹ In Pakistan, however, the baseline statistics on mortality are so limited that such a study will not be feasible without an overhaul of the way deaths are currently registered. These gaps in mortality data exacerbate the exclusion of people over 50 years old from any health metrics collected in Pakistan (explored in greater detail in Chapter 3 “Healthcare Breakdown”).

Improving data collection in Pakistan is not as difficult as it might seem. An example could be taken from Pakistan’s recent efforts to boost birth registrations. As of 2018, only 42% of children under five in Pakistan had been registered.¹⁶² According to the UN Convention on the Rights of the Child (CRC), it is essential that all children should be registered immediately after their birth.¹⁶³ UNICEF began a campaign to improve birth registration in Pakistan, encouraging digitization of the birth registration process and mobilizing so-called “Lady Health Workers” – a community health force established in 1994 which has workers across the country¹⁶⁴ – to improve registration rates.¹⁶⁵ In addition, several major social protection schemes in Pakistan require the birth of a child to be registered in order for the mother or the child to receive financial or other support.¹⁶⁶ Finally, in many parts of the country, including Sindh province, authorities have abolished any fees for registering a child’s birth, further incentivizing registration.¹⁶⁷

Knowing who died and why during a climate disaster is essential not only for the authorities in Pakistan, so that they can develop disaster and health responses that address the needs of those most at risk, but also for the international community if it is to remedy the harm caused by climate change. The reporting in this chapter is an effort to reconstruct what happened to many young children and older adults during the climate disasters of 2022 and 2024.

161 Science, “Hot days or heat waves? Researchers debate how to count deaths from heat: Focusing on temperature extremes can galvanize policy changes but risks undercounting”, 23 August 2024, <https://www.science.org/content/article/hot-days-or-heat-waves-researchers-debate-how-count-deaths-heat>

162 Pakistan, Ministry of Planning Development and Special Initiatives, “National Framework on CRVS Reforms” (previously cited).

163 CRC, Article 7.

164 Integrated Health Project, LHWs Program, <https://ihp.gkp.pk/lhw> (accessed 02 April 2025).

165 UNICEF, “Boosting birth registration in Pakistan with mobile phones: In rural communities in Pakistan, an innovative pilot project is using mobile phones to empower Lady Health Workers to register newborn children.”, 01 April 2016, <https://www.unicef.org/stories/boosting-birth-registration-pakistan-mobile-phones#:~:text=In%20rural%20communities%20in%20Pakistan,Workers%20to%20register%20newborn%20children>

166 World Bank, *The Evolution of Benazir Income Support Programme’s Delivery Systems: Leveraging Digital Technology for Adaptive Social Protection in Pakistan*, 2024, <https://documents1.worldbank.org/curated/en/099022924085074880/pdf/P17986812db6c301f1afee12f2ecbee7a73.pdf>, p.47.

167 Business Recorder, Sindh govt makes birth registration free of cost, 15 September 2024, <https://www.brecorder.com/news/40322467/sindh-govt-makes-birth-registration-free-of-cost>

2.2 FLOODING DEATHS

As noted above, 33 million people were affected and at least eight million people displaced during the 2022 floods, the vast majority of them in Sindh province.¹⁶⁸ Amnesty International interviewed 61 people impacted by the 2022 flooding in Sindh, documenting the harrowing conditions they faced after fleeing their homes. Very young children and older adults were at particular risk, as their health was more likely to suffer from rapidly spreading infectious diseases, unsanitary drinking water, or the lack of access to health facilities.

DOWNSTREAM

Badin district is in southern Sindh, close to where the Indus River meets the Arabian Sea. The district, which is home to about two million people, has a patchwork of canals and drains that are meant to syphon away water when the Indus overflows its banks, as it often does during monsoon season. However, faulty drainage systems, combined with the sheer excess amount of rainfall in 2022, meant that Badin was flooded for months, as the floodwater was slow to retreat.¹⁶⁹ Most families were unable to reach displacement camps or were unaware that they even existed. Most moved to the nearest road or embankment elevated from the floodwater, and typically had no access to safe drinking water, mosquito nets, or adequate shelter to protect themselves from the rain.

Medical workers said they faced major difficulties in getting supplies and equipment to those who were impacted by the floods. Dr. Irshad Memon, Director General of Health Services in Sindh, said: “Access was a huge issue... We had no contingency plan. The moment the rains were on our head, we had nothing in hand.”¹⁷⁰ Zulfikar Ali, the director of an IHHN primary care facility in Khorwah, Sindh province, said:

“Only 10 to 20% of the population was drinking potable water during the flooding. It was simply not possible to reach everyone. It was a capacity issue: NGOs are based in the cities but there was no way of reaching far-flung areas... Villagers were drinking groundwater as well as standing water.”¹⁷¹

Infectious diseases thrived in these conditions. Known malaria cases spiked by 2.1 million in 2022 immediately following the floods, particularly in Sindh and Balochistan.¹⁷² Pakistan, and Sindh in particular, also saw an outbreak of dengue, with 74% of observed cases occurring in September 2022, immediately after the floods.¹⁷³ The known incidence of diarrhoea was at least five times higher than usual following the

168 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment*, October 2022, <https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf>, p.4.

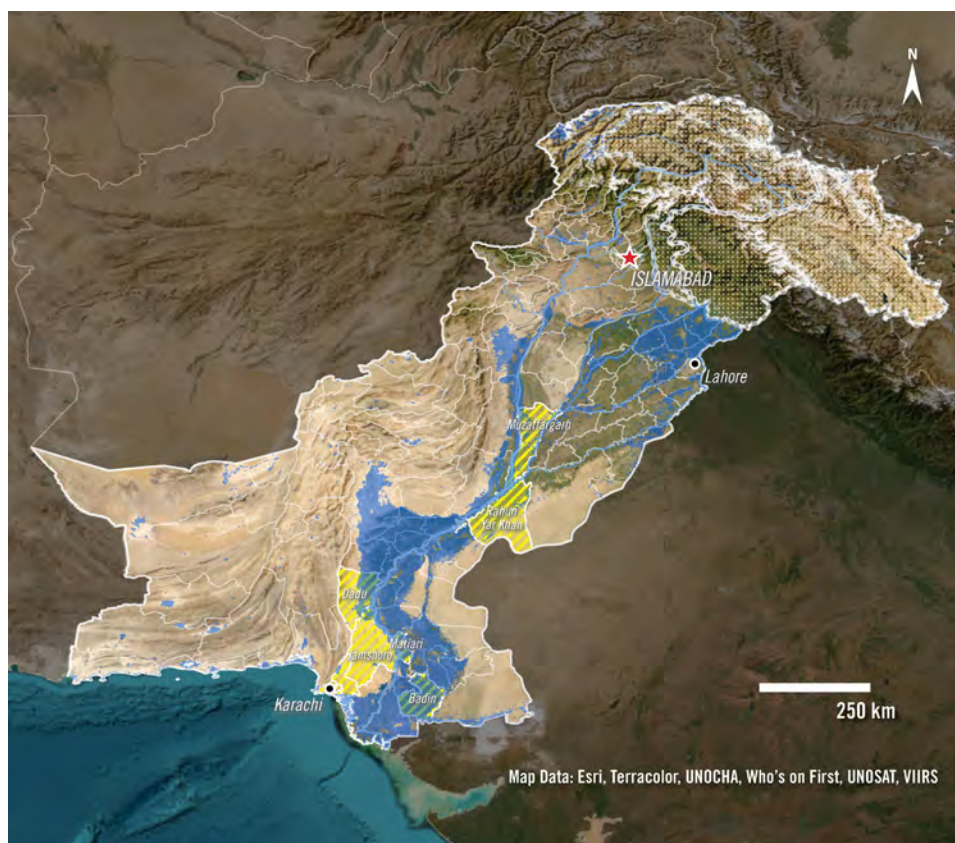
169 Dawn, “LBOD: A development disaster that haunts Badin, two decades after its inception: If there is anything to take away from the lessons it has taught, it is that the people must finally be heard.”, 25 February 2023, <https://www.dawn.com/news/1737278>

170 Remote interview with Dr. Irshad Memon, Director General of Health Services Sindh, 24 May 2024.

171 Interview with Zulfikar Ali, director of Indus Health & Hospital Facility, 16 April 2024, Khorwah, Sindh, Pakistan.

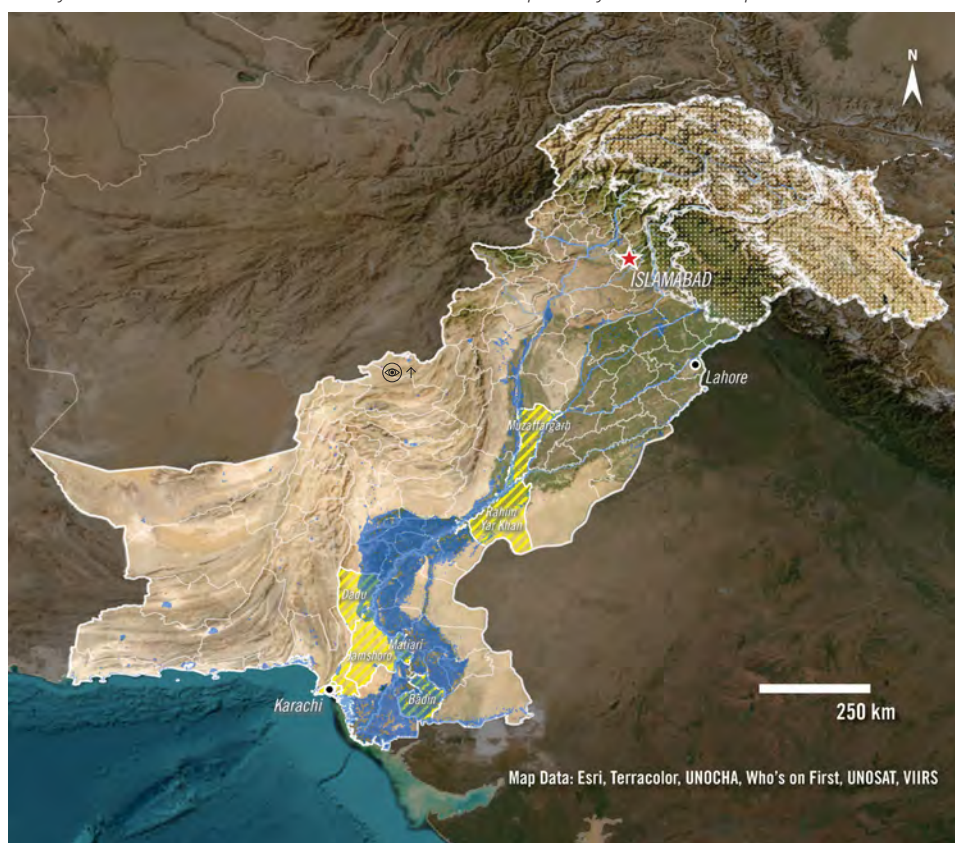
172 WHO, *World Malaria report 2023* (previously cited).

173 WHO, “Disease Outbreak News: Dengue - Pakistan”, 13 October 2022, <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON414>



☞↑ The map shows flooded areas, shaded in blue, across Pakistan between 1 July and 31 August 2022, as detected by the United Nations Satellite Centre (UNOSAT).

☞↓ The map shows flooded areas, shaded in blue, across Pakistan between 15 and 22 September 2022, as detected by UNOSAT. UNOSAT data indicates that Badin remained impacted by floodwaters in September 2022.



floods.¹⁷⁴ Despite an awareness of these trends, there is still relatively little information about how mortality was affected by this spike in disease, and, just as importantly, who was most affected

In September 2022, following heavy rains in July and August, deaths registered by IHHN's Badin hospital were 71% higher than the monthly average for 2022. During the post-flooding period in September, deaths among children reached 209, which was 14% of all recorded deaths among children that year (see Figure 1 in the Executive Summary). Compared to the first two quarters of 2022, the recorded deaths among children increased by 57% in the third quarter, the months that were dominated by flooding and its aftermath.

Deaths among very young children, or those under the age of five, were high at IHHN's Badin facility in 2022 generally, making up 76% of all deaths observed in the facility that year. In the months following the floods, deaths increased most notably among neonates (children 0 to 28 days old), which rose from 68 in July to 118 in September, and infants (29 days to under one years old), which went from 19 in July to 39 in September, as can be seen in Figure 2 below.

Older people also appeared to be at unique risk in the wake of the floods. The number of people over 50 years old who died at the facility, while overall much lower than deaths registered among children, tripled from 13 in July to 38 (16%) in September. By comparison, observed deaths among adults 18-49 did not significantly increase during or after the floods.

Many of the post-flooding deaths among very young children aged 0-5 years were related to neonatal health (41%), which included medical issues related to premature birth, birth complications (including birth asphyxia and trauma), neonatal infectious and congenital anomalies (Figure 3).¹⁷⁵ The second leading cause of death for very young children was infectious disease (21%), which included water- and mosquito-borne illnesses; these deaths also peaked in September, in the wake of the floods. Among older people, deaths from respiratory infections (identified as the cause of death in 29% of cases), infectious diseases (11% of cases) as well as other causes of death (25% of cases) increased notably in the post-flooding months (see Figure 4).

174 UN OCHA, *Pakistan: 2022 Monsoon Floods - Situation Report No. 10*, 29 October 2022, <https://www.unocha.org/publications/report/pakistan/pakistan-2022-monsoon-floods-situation-report-no-10-28-october-2022>

175 WHO, Newborn Mortality (previously cited).

© Figure 2. These bar graphs show the total number of observed deaths at the IHHN facility in Badin each month for different age groups that were partially informed by the Munich Age Classification System (MACS). The height of each bar indicates the observed number of deaths for each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimetres) that occurred each month, highlighting the extreme amounts of rainfall that led to flooding in July and August.

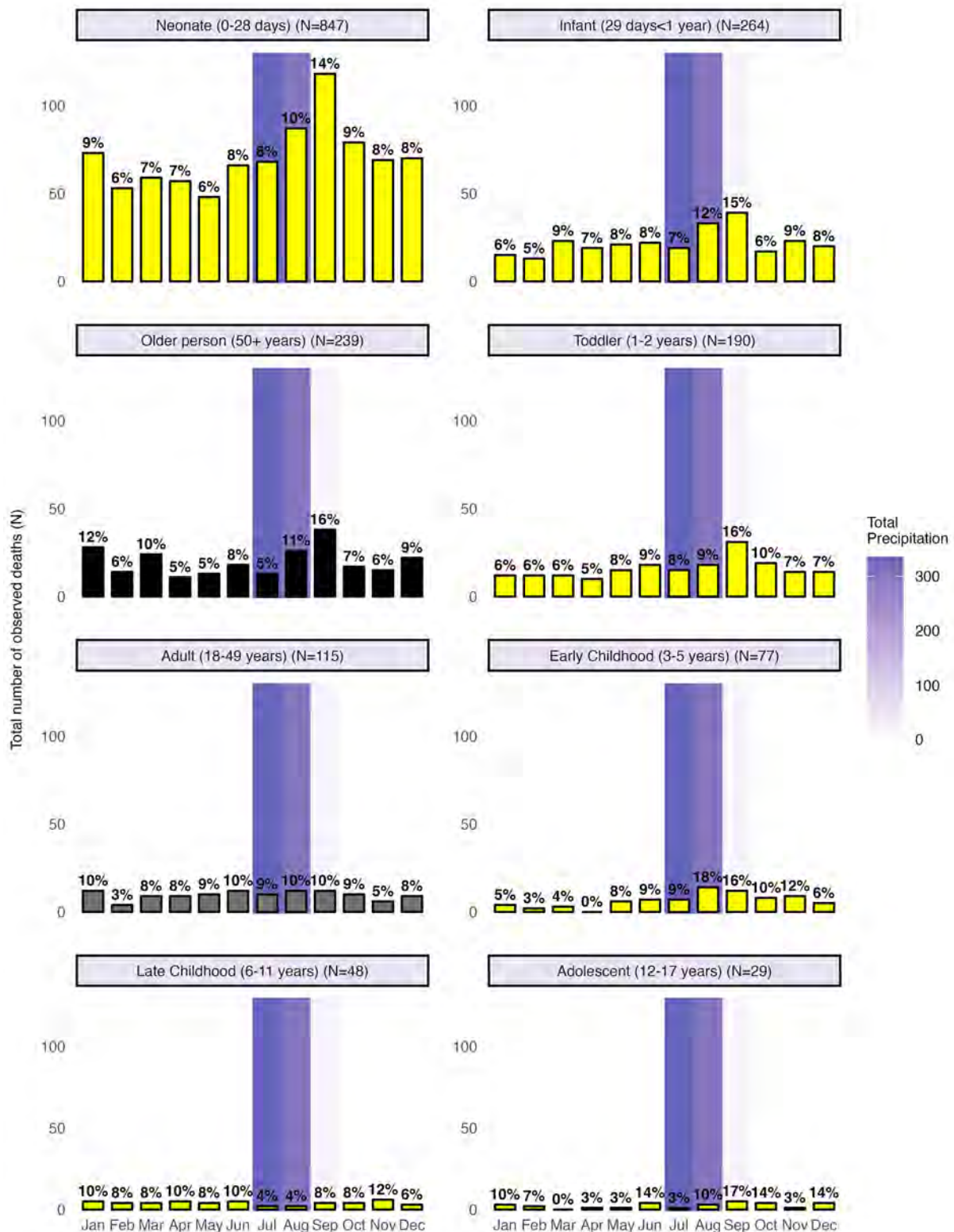


Figure 3. This graph shows the total number of different causes of death that were identified among very young children aged 0-5 years at the IHHN Badin facility during each month in 2022. The boxes for each cause of death express the relative frequency of different causes of death over time (yellow shading). The background of each month at the top of the graph indicates the total amount of precipitation (in millimetres) that occurred that month.

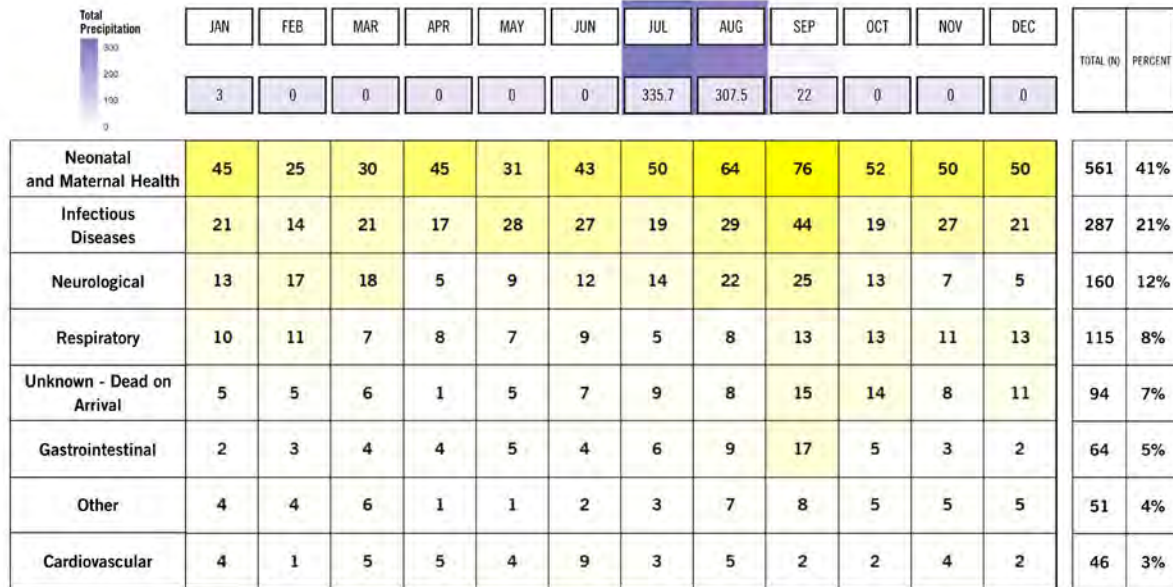
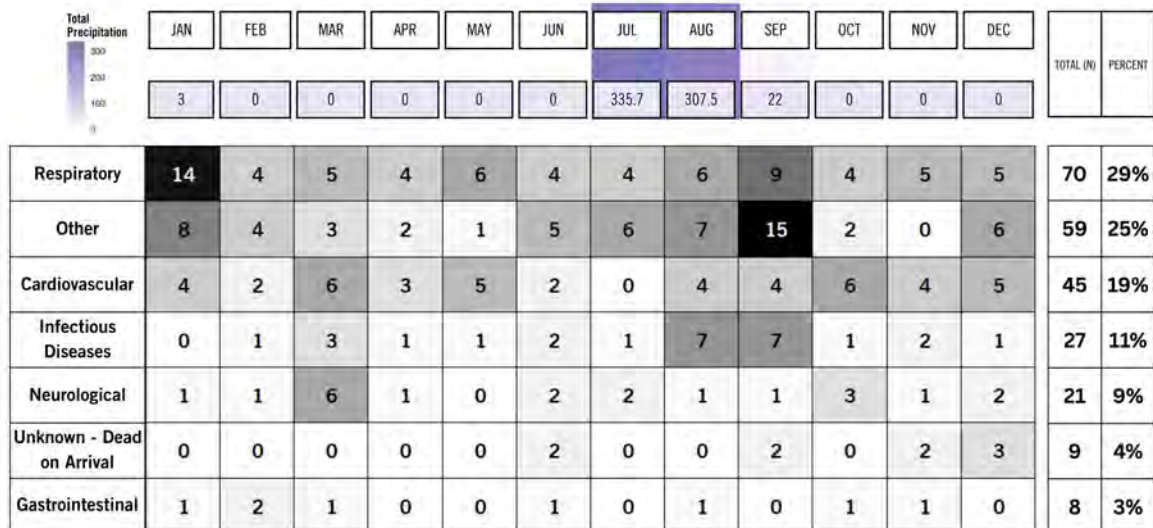


Figure 4. This graph shows the total number of different causes of death that were identified among people aged 50 years or older at the IHHN Badin facility during each month in 2022. The boxes for each cause of death express the relative frequency of different causes of death over time (dark shading). The background of each month at the top of the graph indicates the total amount of precipitation (in millimetres) that occurred that month.



Amnesty International conducted more than a dozen interviews with the relatives of patients who had died in IHHN facilities and whose deaths were clearly linked to the floods. In many cases, unsanitary and

unsheltered conditions in displacement were a leading contributor to the illness of a child or an older person, as families described being unable to protect them from the rains and from disease in the absence of evacuation or shelter.

For example, Seeta, 32, whose home was destroyed by floods in July 2022, moved her family of three to a nearby embankment. Seeta's family built a makeshift shelter by standing four *charpais* – woven beds with wooden frames – up against each other. Then they draped a plastic tarp over the top, and pinned it down with bricks. "We were completely wet and could not protect ourselves," Seeta said.¹⁷⁶

Soon after, Seeta's one-year-old daughter Kareena came down with a severe cough. She was coughing for weeks, but the family had no money or transportation to take her to a doctor amidst the floods. Eventually, they brought her to IHHN's Badin facility, where she was admitted for five days. Despite receiving oxygen, intravenous drips, and other medications, Kareena did not recover, and on 27 August 2022 she died of acute respiratory distress.¹⁷⁷ Seeta said:

"On the day she died I was beside her bed. She was losing consciousness and closing her eyes. I screamed for my husband and the nurse was pulling me out of the ICU... I was in immense pain."¹⁷⁸

In flooding conditions, water- and mosquito-borne diseases spread particularly quickly. While many members of a family often got sick, the very young children and older adults were the most likely to die or require hospitalization. Panhul Mallah's one-year-old nephew, Rasheed, died of malaria in the IHHN Badin hospital in the wake of the floods. The family, together with about 80 other families from Mallah's village, were displaced to the nearest elevated road about one kilometre away in July 2022. Panhul said: "We were eating only once a day... We were drinking water from the canal beside the road... There were flies and mosquitoes, so many mosquitoes at night."¹⁷⁹

Rasheed came down with a fever while the family was displaced on the road. His uncle brought him to a hospital, where he received medication. Two days later, however, Rasheed started having heavy diarrhoea. After attempting to treat him at different hospitals, the family took him to IHHN, where he died from sepsis – which can result from severe malaria – on 20 August 2022.¹⁸⁰

Older people struggled in particular because, in addition to being particularly vulnerable to disease, they often could not access treatment or medication for chronic conditions during the floods. Yaqoob Khan, who was about 62 years old and lived in the Umerkot district of Sindh, had had diabetes for many years. During the 2022 floods, his family was not displaced, but Khan's mud house was filled with knee-high

176 Interview with Seeta, 13 January 2025, Badin, Sindh, Pakistan.

177 Hospital records shared by IHHN; on file with Amnesty International.

178 Interview with Seeta, 13 January 2025, Badin, Sindh, Pakistan.

179 Interview with Panhul Mallah, 14 January 2025, Badin, Sindh, Pakistan.

180 Hospital records shared by IHHN; on file with Amnesty International.

water. He soon developed a diabetic wound on his left foot. It was so large the bone was visible, his nephew, Mohammad Rafiq, said:

“He was in lots of pain, he couldn’t walk. Most of the time when he had [diabetic] wounds he would go to the doctor. He would get some medications, injections, and wound dressing. But because it was raining and there were floods, and we live in a poor remote area, the roads were all blocked because it had been raining for seven to eight days.”¹⁸¹

When the roads finally cleared, the family pooled together the PKR 8,000 (US\$29) needed for a taxi to IHHN’s Badin facility. There, on 8 September 2022, Khan died. Gangrene was described in hospital documents as a leading cause of his death.¹⁸²

In 2024, just two years after the devastating 2022 floods, many families faced flooding yet again, as monsoon rains were 51% above average from July to September, and also well above the norm in parts of the country as early as April.¹⁸³ The 2024 floods, while not as widespread as those in 2022, nonetheless resulted in the displacement of more than 140,000 people in Sindh alone.¹⁸⁴ In September 2024, Amnesty International conducted on-the-ground visits to eight flood-affected communities in Sindh. Researchers found poor sanitary conditions which appeared to have fuelled high rates of illness and even death, particularly among older people and very young children.

Haji, a 61-year-old farmer, was displaced with his family by flooding in Badin district in late August 2024. He and his family were forced to live for 25 days on a nearby roadside in a tent provided by the local government while waiting for the water to recede from their home. Haji came down with prolonged diarrhoea. His health rapidly declined, and he was no longer able to walk despite being fully mobile before the floods. His son, Khalid Hussain, spoke to Amnesty International because Haji had profound deafness and was not able to communicate independently:

“The tent [did not provide enough] cover. It continuously rained for a week... We were drinking flood water. The government provided us with a tent, and nothing else... [Haji] has kidney issues now because he had diarrhoea for 20 days. Before the flood he was healthy and fit. Now he is unable to even eat unassisted.”¹⁸⁵

Shazia Chandio, 22, was almost eight months pregnant in August 2024, when flooding began in her village in Dadu district. Her home was spared, but her toilet was flooded, and so she and her family walked

181 Remote interview with Mohammad Rafiq, 16 January 2025.

182 Hospital records shared by IHHN; on file with Amnesty International.

183 Pakistan, Meteorological Department, “Monsoon 2024 (1 July – 30 September) Report” (previously cited).

184 UN OCHA, *Pakistan: Monsoon 2024 Flash Update #8 - Latest Monsoon Developments and Response Efforts*, 9 September 2024, <https://www.unocha.org/publications/repKARACHI/HEATort/pakistan/pakistan-monsoon-2024-flash-update-8-latest-monsoon-developments-and-response-efforts-09-september-2024>

185 Interview with Khalid Hussain, 28 September 2024, Babar Ali Goth. Sindh, Pakistan.

through knee-deep water to a neighbour's house to use theirs. Shazia, her eight-year-old daughter and her 18-month-old son all began experiencing vomiting and diarrhoea and were hospitalized.

"I put diapers on [my son] but his motions were so continuous that they leaked out," she said. In the hospital, he received an intravenous drip, but the family brought him home after one night because they could not afford further treatment. "For one day and one night he was suffering diarrhoea, and then the next day he died."¹⁸⁶



©↑ Haji, 61, has been unable to walk since his health was affected by flooding in September 2024. © Shakil Adil / Amnesty International

Sanitation conditions amidst the floods were particularly difficult for many women, who were often forced to seek sheltered places far away from encampments to relieve themselves. Aalma, 43, said that while living in a tent by the roadside, younger girls could relieve themselves outside during the day if they were covered up with a card or a cloth, but that women "would wait all day and then go at night" out of fear of impropriety and potential retaliation:

"My [16-year-old] daughter was having diarrhoea and was also vomiting... We could not allow her to go outside, so she was vomiting and having diarrhoea inside the tent."¹⁸⁷

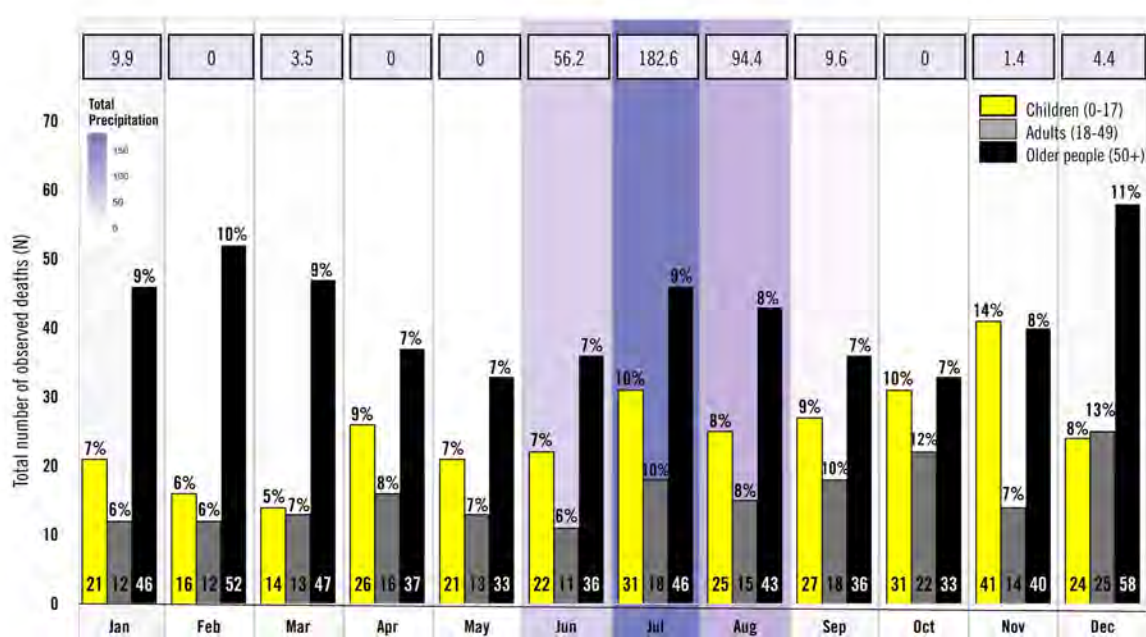
186 Interview with Shazia Chandio, 30 September 2024, Syed Pur, Sindh, Pakistan.

187 Interview with Aalma, 28 September 2024, Babar Ali Goth, Sindh, Pakistan.

UPSTREAM

IHHN also collected data on deaths recorded in its hospital in Muzaffargarh in 2022. Muzaffargarh is in southern Punjab province, at the point where the Chenab and the Indus Rivers meet. While flooding is common and severely affected some areas in 2022, it was less intense than in Badin and the water receded relatively quickly, leading to less long-term displacement than in Sindh. IHHN found that despite peak precipitation in July and August 2022, the observed number of deaths at the Muzaffargarh hospital did not show an immediate and direct increase (Figure 5). While observed deaths never exceeded 80 between January and June, there was a spike to above 90 in July, followed by a gradual increase towards the end of the year. Thus increased precipitation did not appear linked to an observed increase in deaths in the three months following the greatest precipitation. As in Badin, recorded deaths amongst children and adults over 50 made up the largest share of deaths observed at IHHN's Muzaffargarh facility throughout 2022, but did not change drastically during and after the floods.

Figure 5. This bar graph shows the total number of deaths that IHHN observed at its Muzaffargarh facility for each age group and month in 2022. The colour of the bar indicates the age group: children 0-17 (yellow), adults 18-49 (grey) and older people (black). The height of each bar indicates the observed number of deaths for this age group and month. This total number of observed deaths is also given at the bottom of each bar, while the percentage of observed deaths among each age group is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimetres) that occurred each month, highlighting the extreme amounts of rainfall that led to flooding in July and August.



It is possible that some people who required medical care were unable to reach the hospital during heavy precipitation. Amnesty International interviewed several relatives of people who had died at the IHHN facility in Muzaffargarh who described the challenges of reaching the facility during the floods: Muzamil Jameel, 28, who according to IHHN records died on 16 August 2022, had returned to his family home

after being briefly displaced by the floods in July 2022.¹⁸⁸ He went to turn on a tap, which was attached to an electric motor standing in floodwater, and was electrocuted. Jameel's father, Mohammad, called an ambulance, which he said usually took 10 to 15 minutes to arrive. Due to the floods, Mohammad said, the ambulance did not arrive for an hour.

"When the ambulance arrived my son was slightly conscious," Mohammad said. "His heart was still beating. We took him to [IHHN] Hospital. The staff tried treatment but due to the late arrival nothing could be done."¹⁸⁹

DEATHS IN THE COMMUNITY

In addition to speaking to the families of those who received medical treatment at IHHN, Amnesty International also visited flood-affected communities throughout Sindh and Punjab to fully understand the health impacts of the disaster in 2022. Amnesty International interviewed 35 people who said their relatives had died during the 2022 floods, but who had not taken their loved one to a hospital at the time or formally registered the death in any way. Many older people in particular, even if they had visited a hospital, ultimately died at home, whether because they preferred to do so or because the cost of medical care made any further treatment prohibitively expensive.

Kareema Bheel, who was in her 60s, developed flu-like symptoms during the heavy rains in her village near Shadi Large, Badin district. Her relatives said that while they tried to make their shelter watertight, rain kept leaking through the grass roof, covering everything with water.¹⁹⁰ After several days of unabated symptoms, the family decided to take Kareema to the hospital. Kareema's son wrapped her in plastic tarp to protect her from the rain and carried her over his shoulder through the floodwaters. When they reached the nearest major road, they flagged down a rickshaw and went to the hospital.

At the hospital, staff conducted an electrocardiogram and told the family to return a week later. Kareema died a few days later. Thanu, Kareema's daughter-in-law, said: "At the hospital they were not in a rush to help us, we are poor and nobody cares about us... We didn't tell anyone [that she died], we just buried her. Who should we tell? Nobody cares."¹⁹¹

Ali Akbar Mallah similarly described the death of his aunt, Fateh, 72, from cholera. The family, who live in Dadu district of Sindh, had fled the floods to a displacement camp in Sehwan. There, they hoped conditions would be better than on an embankment near their homes, but instead they found overcrowding and poor sanitation. Mallah said:

188 Hospital records shared by IHHN; on file with Amnesty International.

189 Interview with Mohammad Jamil Khan, 6 January 2024, Muzaffargarh, Punjab, Pakistan.

190 Interview with Achar and Thanu Bheel, 17 April 2024, Ahmed Ali Sumejo, Sindh, Pakistan.

191 Interview with Achar and Thanu Bheel, 17 April 2024, Ahmed Ali Sumejo, Sindh, Pakistan.

“She was okay for about 20 days, and then she got sick and was immediately rushed to the hospital. She had vomiting and diarrhoea... She was in a serious condition, and the doctor told us that she will not survive, it was best to take her home because that is tradition. So we moved her back to the tent to die.”¹⁹²

Mallah said the family buried his aunt near the displacement camp. They did not inform the camp authorities or register her death.

Dr. Abdul Wahab, an emergency doctor at IHHN’s facility in Badin, said his hospital lacked the staff or equipment to treat many seriously ill patients. The facility, which is a secondary care hospital, did not have a trauma care unit, lacked enough ICU beds, and did not have enough specialized care resources to treat many serious patients. It was therefore common for patients to die at home. This was often less a matter of personal choice and more due to the inability to afford transportation to tertiary care facilities, the closest of which were in Hyderabad or Karachi (110 kilometres and 213 kilometres away, respectively). The result was that many deaths occurred outside the hospital system and went largely undocumented. Dr. Wahab said:

“Definitely people are affected by the floods, but there is the difficulty of transporting patients from flood-affected areas... Mostly we receive patients in critical condition. Whenever those patients come we counsel them to go to tertiary hospitals but due to transport issues, they prefer to go home.”¹⁹³

The deaths of most people who died in the community and not in a hospital were not registered by their families, and therefore are uncounted by the government in any way.

2.3 HEATWAVES

Temperatures are rising everywhere in the world, but as a country that already experiences high temperatures much of the year, Pakistan is more intensely affected as heatwaves become more likely due to climate change.¹⁹⁴ In both 2022 and 2024, parts of Pakistan experienced prolonged heatwaves. Throughout the summer of 2024, temperatures regularly reached above 40°C in Karachi, which when combined with high humidity levels resulted in temperatures that felt as hot as 49°C.¹⁹⁵ In 2022, large swathes of the country experienced extreme heat, particularly in southern Punjab and upper Sindh. In March 2022 in Rahim Yar Khan, for example, temperatures were over 40°C for 11 days, relative to the historic monthly average maximum of 31.6°C. In April 2022, temperatures were over 45°C for eight

192 Interview with Ali Akbar Mallah, 20 April 2024, Haji Khair Din Mallah, Sindh, Pakistan.

193 Interview with Dr. Abdul Wahab, 14 January 2025, Badin, Sindh, Pakistan.

194 World Weather Attribution, “Climate Change made devastating early heat in India and Pakistan 30 times more likely”, 23 May 2022, <https://www.worldweatherattribution.org/climate-change-made-devastating-early-heat-in-india-and-pakistan-30-times-more-likely>

195 BBC, “Deaths mount as Pakistan swelters in heatwave”, 26 June 2024, <https://www.bbc.com/news/articles/cn05rz3w4x1o>

days in Rahim Yar Khan, compared to a monthly average maximum of 39°C.¹⁹⁶ These stretches of high temperatures in both months meet the meteorological definition of a heatwave, and constitute dangerous conditions that can harm human health.¹⁹⁷

Despite the growing frequency of extreme heat, transparency around deaths during heatwaves is virtually non-existent. According to the Sindh PDMA, there were only 56 deaths recorded during the Karachi heatwave in 2024,¹⁹⁸ but charitable organizations that ran free ambulance and morgue services asserted that the numbers were much higher.¹⁹⁹ And in 2022, amidst record heat, the Punjab PDMA said there were zero heat-related deaths in the province – home to 126 million people – despite the fact that 13,000 sought medical treatment for heat-related conditions during the hottest part of the year.²⁰⁰

URBAN CENTRES

As noted in the methodology, IHHN did not include any urban centres in their quantitative analysis from hospitals. However, Amnesty International interviewed dozens of people who were impacted by the 2024 heatwave in Karachi. Karachi, a port on the Arabian Sea, is Pakistan's largest and most densely populated city, with nearly 20 million people.²⁰¹ While temperatures do not always reach the same highs as in other parts of the country, humidity in Karachi during the summers can exceed 70%, as it regularly did in the summer of 2024.²⁰² When combined with temperatures over 40°C, this can prove extremely dangerous: with high humidity levels, humans cannot regulate their internal body temperature because sweat does not evaporate as it should, a phenomenon called the “wet bulb effect”.²⁰³ High heat and humidity, combined with Karachi's dense urban development, minimal shade, near-constant electricity outages during the summer, and the fact that many people were compelled to work because they lacked alternative income, created a deadly cocktail in the summer of 2024.

Much of the public health advice on avoiding exposure to heat depends on whether people can afford to stay indoors and negotiate different working hours. In Pakistan, more than 70% of people are informally employed, meaning they have no legal protections in employment and, in almost all cases, work as daily

196 Temperature data from the Pakistan Meteorological Department, shared with IHHN. On file with Amnesty International.

197 “Heatwave” has been previously defined in the glossary to this report and in Footnote 20.

198 Pakistan, PDMA Sindh, “Situation Report for heatwave 2024”, 30 July 2024, <https://pdma.gos.pk/Documents/Heatwave/Heatwave%20Situation%20Reports%202024/Heatwave%20Daily%20Situation%20Report%2030-07-2024.pdf>

199 Interview with Faisal Edhi, trustee of the Edhi Foundation, 26 September 2024, Karachi, Sindh, Pakistan.

200 Pakistan, PDMA Punjab, “Heatwave Data: 17/05/2022 to 07/06/2022”, 07 June 2022, <https://pdma.punjab.gov.pk/system/files/Consolidated%20Heat%20wave%20report%2007-06-2022.pdf>

201 Pakistan Bureau of Statistics, “7th Population and Housing Census: First Digital Census of Pakistan”, 2023, https://www.pbs.gov.pk/sites/default/files/population/2023/material/sindh_insight.pdf

202 Express Tribune, “Karachi records hottest day of the year, mercury to rise further on Thursday: PMD says port city's temperature could remain between 41°C and 43°C tomorrow”, 29 May 2024, <https://tribune.com.pk/story/2468896/karachi-records-hottest-day-of-the-year-mercury-to-rise-further-on-thursday>

203 Guardian, “Why you need to worry about the ‘wet-bulb temperature’: Scientists think we need to pay attention to a measure of heat and humidity – and it's edging closer to the limits of human survivability”, 31 July 2022, <https://www.theguardian.com/science/2022/jul/31/why-you-need-to-worry-about-the-wet-bulb-temperature>

wage earners and are therefore not paid for any days they do not work.²⁰⁴ The reality is that most people in Pakistan cannot afford to miss work, and there is no income support for people who are unable to work normal hours or who suffer sickness due to extreme heat.²⁰⁵



☞ ECOSTRESS data from 27 May 2024 measured land surface temperatures at 10.30pm in Karachi. The highest temperature recorded at that time was 30°C. A choropleth map visualizes the data, with cooler temperatures shown in blue, gradually shifting to red for the hottest areas – clearly illustrating the urban heat island effect. Regions outside the urban centre of Karachi are cooler, while vegetated areas within the city, such as parks and the golf course, also appear cooler than their surrounding built-up environments. Much of the urban landscape displays elevated land surface temperatures, represented by a darker orange colour. The highest temperatures were observed at the airport and an oil refinery. Cloud cover on the western edge of the city obscured part of the satellite reading, resulting in gaps in the dataset. Although no cloud-free nighttime ECOSTRESS imagery was captured during the June 2024 heatwave, similar nighttime patterns of elevated urban temperatures are expected.

Despite their unique vulnerability to extreme heat, older people were often forced to work even in dangerously hot conditions. Ibrahim Sanif Abdul, 55, worked outdoors as a security guard at a petrol station during the 2024 heatwave in Karachi. Ibrahim's younger brother, Hanif Abdul Rehman, told Amnesty International that Ibrahim had been working 12-hour shifts, seven days a week. Two days before his death, Ibrahim had visited a doctor because he felt unwell. The doctor told Ibrahim there were no major issues, and Ibrahim continued working until the afternoon of 26 June 2024. That day, Abdul Rehman received a call from Ibrahim's coworkers:

“They called me [from the petrol station] as Ibrahim was not well, saying that he was going to faint. When I got there, he was feeling restless and unwell, so I took him home... When he was home, he was [still] restless... He was unable to talk. He said, ‘I don’t know what is happening to me.’”²⁰⁶

204 International Labour Organization, *A social protection profile of Pakistan*, 2021, <https://www.ilo.org/media/384631/download>, p. 39.

205 Amnesty International, *A burning emergency: Extreme heat and the right to health in Pakistan* (previously cited); Chapter 4 “Emergency Responses”.

206 Interview with Hanif Abdul Rehman, 25 September 2024, Karachi, Sindh, Pakistan.

The family took Ibrahim to Civil Hospital in Karachi, but he became unresponsive during the short journey there. The doctor pronounced Ibrahim dead on arrival, attributing the cause of death to a heart attack. The family does not have any documentation from the hospital and had not formally registered his death.

There are no universal support schemes for people who cannot work due to older age or disability in Pakistan. A 60-year-old woman in Karachi said she had worked for one family as a cook for nearly 30 years. The woman, a widow, worked by herself in the hot kitchen from 6am to 4pm, six days a week. In June or July 2024, she fainted on the bus on her way home from work:

“There is no fan or AC in the kitchen... Everyone tells me to quit this job but I can’t. I can’t leave because I’m the only one [in my family] who earns... My blood pressure always gets high when I’m in front of the stove. The doctor has told me many times that my work is affecting my health negatively, that it causes me to feel weak. I say ‘Yes, I’ll do less of it.’ What else should I say?”²⁰⁷

As will be explored in greater detail in Chapter 5, about 80% of people of retirement age in Pakistan do not have access to any kind of pension, meaning they often have no choice but to work during periods of extreme heat.²⁰⁸

Most interviewees did not have access to air conditioning, and fans were the primary way they cooled their homes. But many parts of Karachi experience what is known as “load-shedding,” or rolling blackouts that electricity providers claim are necessary to compensate for losses from communities illegally siphoning off the power supply.²⁰⁹ Amnesty International interviewed many people who said they went without electricity for 10 to 12 hours per day, sometimes more. Load-shedding was more frequent in the summers. Many parts of Karachi, and particularly poorer neighbourhoods, are densely populated with apartment blocks that provide little natural ventilation, turning them into furnaces when the electricity was turned off.

Taj Mohammad, a 54-year-old driver living in a working-class neighbourhood of Karachi, came home and had dinner with his family on 28 June 2024. At around midnight, the electricity went out, and the family went to bed. According to his son, Adnan, his mother woke up at around 3am and noticed something was wrong. The family tried to wake Taj Mohammad but he was unresponsive. He died of a heart attack before reaching the hospital. As noted previously, extreme heat exacerbates cardiovascular conditions, making heart attacks and strokes more likely.²¹⁰ Adnan said:

“The fans were not working because of the power outage, there was no air in the room... Sometimes we only have electricity for six hours a day... When I wake up in the morning, there is no electricity. When I go to work, there is

207 Interview with a 60-year-old woman, 10 January 2025, Karachi, Sindh, Pakistan.

208 ILO, *A social protection profile of Pakistan* (previously cited), p. 39.

209 Dawn, “Sindh govt asks power utilities to stop loadshedding at night-time”, 29 June 2024, <https://www.dawn.com/news/1842591>

210 Kristie L Ebi and others, “Hot weather and heat extremes: health risks”, 21 August 2021, *Lancet*, Volume 398, [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(21\)01208-3.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(21)01208-3.pdf), p.699.

no electricity. When I come back home, there's no electricity. When I go to sleep, there's no electricity... That's why we are so angry, at least supply us with uninterrupted electricity in the summer.”²¹¹

Halima Bhai, 60, lived with her family in a densely populated neighbourhood in Karachi that regularly experienced electricity blackouts. Halima had high blood pressure and diabetes, making her more vulnerable to the heat. Halima's son, Mohammed Ishaq, told Amnesty International:

“The whole day we would have power cuts... Usually [we] only had power for two hours between 1pm and 3pm... The issue is that there is little breeze in our area because of [the densely packed] houses and then there is no electricity. We cannot turn on the fan without electricity.”²¹²

Mohammed said that Halima came down with what he described as a high temperature a week before her death, during a period of extreme heat and electricity outages at home.²¹³ Two days before her death Halima could no longer speak, so the family took her to Civil Hospital where she received treatment and was well enough to return home the next day. The following day, however, her condition deteriorated again. Mohammed said: “She actually died at home but we were panicked and did not know what to do or what was happening. So when we got to hospital the doctor said she had already expired.”²¹⁴ Hospital records show Halima dying on 2 July 2024, though they do not list a cause of death.²¹⁵ The family said that her death was not registered with any government body.

While official figures found that there were 56 deaths from the Karachi heatwave in 2024,²¹⁶ NGOs have expressed alarm over the true death toll, which they believe is higher. Edhi Foundation, a charity ambulance and morgue service, told Amnesty International that while they usually moved 60 bodies into their morgues in Karachi every day, during the heatwave in June and July 2024 the number was almost always over 100, reaching 141 on 28 June.²¹⁷ They also transferred hundreds of patients with heat-related symptoms to hospitals. One ambulance driver from Edhi Foundation said that most of the patients he transported were men over 50 years old who lived in poorer, more densely populated neighbourhoods:

“People had symptoms like sweating, breathing issues, cold sweats, exhaustion... My car did not stop, I had 10 to 11 calls per day, I was completely busy, I was shifting one patient and would get another call. Everyone being transported had to be on oxygen.”²¹⁸

211 Interview with Muhammad Adnan, 26 September 2024, Karachi, Sindh, Pakistan.

212 Interview with Mohammed Ishaq, 25 September 2024, Karachi, Sindh, Pakistan.

213 Interview with Mohammed Ishaq, 25 September 2024, Karachi, Sindh, Pakistan.

214 Interview with Mohammed Ishaq, 25 September 2024, Karachi, Sindh, Pakistan.

215 Hospital records shared by Mohammed Ishaq; on file with Amnesty International.

216 Pakistan, PDMA Sindh, “Situation Report for heatwave 2024” (previously cited).

217 Interview with Mohammad Amin, call centre director at Edhi Foundation, 26 September 2024, Karachi, Sindh, Pakistan.

218 Interview with Mohammed Farooq, ambulance driver at Edhi Foundation, 26 September 2024, Karachi, Sindh, Pakistan.

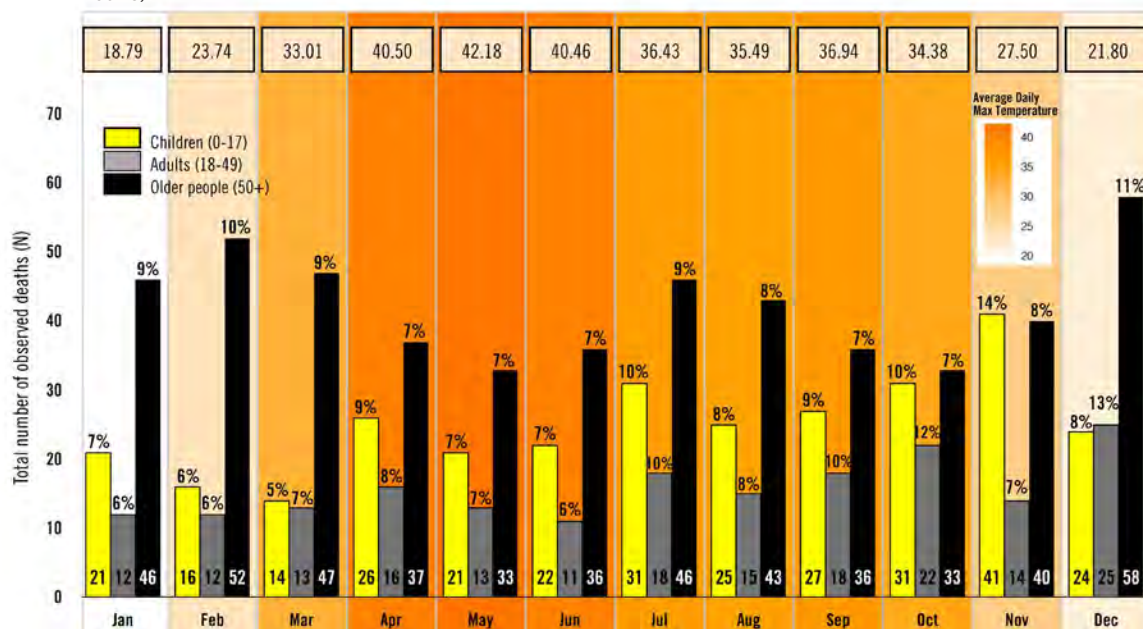
While Faisal Edhi, the trustee and director of Edhi Foundation, said his organization could not be 100% sure how many deaths were heat-related, he believed that extreme heat had contributed to the deaths of many:

“[After a death] we don’t ask exactly what happened. The death certificates all say respiratory or heart failure; they don’t say the main cause... The health department came to me, they were fighting and cross-questioning me, asking me, ‘How do you know they died from heatwaves?’ I said I don’t know, but during the heatwave, many more people died.”²¹⁹

RURAL AREAS

The dynamic of heatwaves seemed fundamentally different in rural areas. There, with fewer dense housing settlements and more access to shade, the health impacts of heatwaves appeared less severe than in cities like Karachi. As previously noted, all three hospital facilities included in the IHHN study – Badin, Muzaffargarh and Bhong – are in rural areas. In Muzaffargarh, where temperatures in 2022 reached highs of 10°C or more above the historic average in March and April, the observed number of deaths at the local IHHN facility was not temporally associated with temperature, as the highest number of deaths was recorded during colder months (November–December), rather than during the hottest period of the year (April–June).

Figure 6. This bar graph shows the total number of deaths that IHHN observed at its Muzaffargarh facility for each age group and month in 2022. The colour of the bar indicates the age group: children 0-17 (yellow), adults 18-49 (grey) and older people (black). The height of each bar indicates the observed number of deaths for this age group and month. This total number of observed deaths is also given at the bottom of each bar, while the percentage of observed deaths among each age group is shown at the top of each bar. The background of each bar is shaded according to that month’s average daily maximum temperature (in degree Celsius), highlighting the months that experienced very high temperatures (April–June).



219 Interview with Faisal Edhi, trustee of the Edhi Foundation, 26 September 2024, Karachi, Sindh, Pakistan.

Jam Muhammed Momin Hussain, who was about 55 years old at the time of his death in May 2022, was out in the fields at around 10am watering his crops when he collapsed. His brother-in-law, Jam Talib, said he ran over and found Hussain unconscious. He described symptoms that were consistent with heat exhaustion:

“He was sweating and was really hot to touch. He was breathing but was unconscious... On the day he died it was very hot. He did not complain about the heat, he was a regular farmer so he was used to it. There is no shade and he is always in the sun in the fields.”²²⁰

The family rushed Hussain to the IHHN facility in Bhong. At the hospital, the doctor was checking his blood pressure and heartbeat when Hussain died. The doctor told the family that Hussain had died of a heart attack, and said the attack may have been brought on by the heat.

It is possible that in rural areas, under-accounting for deaths generally and a lack of awareness that symptoms were heat-related could have resulted in deaths that went undocumented in hospital or other official records. Amnesty International interviewed 16 people in southern Punjab province, in IHHN’s hospital catchment areas, who said their relatives had died of symptoms that appeared related to extreme heat, though most of them appeared not to have been recorded as they occurred outside of the hospital facilities.

In rural areas, older people, despite the high risk of adverse consequences from extreme heat, frequently worked under the sun, often because they could not afford not to work. On 16 April 2022, Ilahi Baksh Kurai, who was about 90, was outside taking care of his animals. The average monthly high in the Muzaffargarh area was 35.8°C, but it had been above 40°C for most of the previous week, reaching 44.3°C on 10 April.²²¹ Kurai’s relative, Aiman, said:

“He came inside and he suddenly fainted... We flicked water on him, gave him lemon water. We shook him. He would not drink water but was conscious. After 30 minutes trying to help him at home, we took him to the hospital... We went by bike with a cart attached. We made a makeshift cover to protect him from the sun. It took around an hour to reach the hospital and he was unconscious when he arrived. The doctor diagnosed him as having a heatstroke. He was admitted for one night and discharged the next day.”²²²

At home, Kurai seemed better until the following day, when around 8am he described feeling nauseous and suffocated. He died at home a few hours later. The family did not obtain a death certificate for his death.

220 Interview with Jam Talib Hussain, 10 January 2024, Bhong, Punjab, Pakistan.

221 Temperature data from the Pakistan Meteorological Department, shared by IHHN with Amnesty International.

222 Interview with Aiman Kurai, 23 April 2024, Kurai Essan Wala, Punjab, Pakistan.

In rural areas, just like urban areas, some older people described surviving heat-related illness as a result of having to continue working in older age. Sahib Zadu Khaskheli, who is about 70, was picking cotton in the summer of 2022 when she felt dizzy and felt a sudden pain in her chest. Then she fainted:

“It was very hot that day. My husband brought me [home] on a donkey cart and a doctor came to see me. I was unconscious, they had to put water on my face. It took almost three hours to regain consciousness.”²²³

WOMEN & EXTREME HEAT

Many women in Pakistan, including older women, may be affected by extreme heat in ways that fundamentally differ from the experiences of men. Segregation and discrimination often make it more difficult, if not impossible, for women to protect their health during extreme heat.

Some women in urban areas like Karachi, particularly those who lived in more conservative families, described being unable to leave their homes during a heatwave. Whereas it was socially acceptable in their neighbourhoods for men to congregate outside in the street after dark, allowing them to enjoy a breeze during the cooler hours of the day, the women were trapped in unventilated homes that often lacked electricity due to power outages. One 28-year-old woman said:

“In July I had to go to the hospital [because of extreme heat]. I was not feeling well, my stomach was in my throat, I didn’t want to talk to anyone, I was completely exhausted... [The doctors] told me to catch the breeze. But my family doesn’t allow us women to go outside... We women are confined to our four walls.”²²⁴

In rural areas, where many people live in poverty, women often worked in the fields. In addition to working, they were typically expected to cook on an open fire or carry out other chores regardless of extreme heat. One female health worker at an IHHN facility in Punjab said: “If there is burning sun, it is too hot, the husband still asks the female family member to go outside and cook for them. There is a fear of divorce [for women who don’t do that].”²²⁵

Heat is a risk factor for pregnant women in particular, and studies have shown that the risks of low birthweight and pre-term birth increase during extreme heat.²²⁶ Amnesty International interviewed several pregnant women about the impact of heat on their health. Tameena Haq Nawa, 29, described having heatstroke in May 2022 while she was eight months pregnant. She said:

“On that day I had spent a lot of time outside washing clothes in the sun. Then I moved into the hot kitchen to

223 Interview with Sahib Zadu Khaskheli, 1 October 2024, Mohammad Ibrahim Khaskheli, Sindh, Pakistan.

224 Interview with a woman, 25 September 2024, in Karachi, Sindh, Pakistan.

225 Interview with a female community health worker, 23 April 2024, Gurmani, Punjab, Pakistan.

226 WHO Europe, *Heat and health in the WHO European Region* (previously cited), p. 113.

cook food... I was feeling very hot while cooking food in the kitchen when I fainted. I was sweating a lot. My sister-in-law immediately called out to her husband and other brothers-in-law to help and take me to the hospital. At the hospital they gave me an IV drip.”²²⁷

For many women, refusing to work outside isn't a possibility. Taslim Khashkheli, 34, was still working in the cotton fields while six months pregnant, despite her vision often blacking out and otherwise feeling unwell: “Now that I'm pregnant I feel worse, the blacking out started with this season... Whenever I feel bad in the field I take a rest under the shade. They won't give us wages if we're not working.”²²⁸

In some instances, women also faced more delays in accessing healthcare, as many communities required that a male family member be with them before leaving the home, delaying treatment. A female health worker at an IHHN facility in Punjab said:

“When it is a serious condition, [the family] rushes to the hospital, but they often wait until the last minute. In rural areas, if a female member of the family is suffering from heatstroke and she is not feeling well, she has to wait for a man who may be at the market or in the fields [to transport her to the hospital].”²²⁹

Pakistan's failure to ensure women's equal access to healthcare, safe working conditions, and freedom of movement during extreme heat constitutes a violation of their rights under international law. As a state party to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), Pakistan is obligated to eliminate all forms of discrimination against women and guarantee substantive equality.²³⁰ The restrictions on women's mobility, the expectation that they perform labour-intensive work in extreme heat, and delays in accessing medical care due to gendered norms and male guardianship requirements amount to de facto discrimination, placing women at heightened risk of illness and death. In its General Comment 37 on gender-related dimensions of disaster risk reduction in the context of climate change, the CEDAW Committee urged states to “ensure the removal of all barriers to access for women and girls to health services, education and information” during climate change-related disasters, which include heatwaves.²³¹

227 Interview with Tahmeena Haq Hawaz, 23 April 2024, Thatta Gurmani, Punjab, Pakistan.

228 Interview with Taslim Khashkheli, 1 October 2024, Mohammad Ibrahim Khashkheli, Sindh, Pakistan.

229 Interview with a female community health worker, 23 April 2024, Gurmani, Punjab, Pakistan.

230 Convention on the Elimination of All Forms of Discrimination, Articles 2 & 5.

231 UN Committee on the Elimination of All Forms of Discrimination Against Women (CEDAW Committee), General Recommendation No. 37 gender-related dimensions of disaster risk reduction in a changing climate, 13 March 2018, UN Doc.: CEDAW/C/GC/37, para. 68.

3 HEALTHCARE BREAKDOWN

Pakistan does not adequately fund its healthcare system. According to the WHO, countries should spend 5-6% of their GDP or 15% of their budget on healthcare to ensure universal coverage.²³² In 2021, Pakistan spent just 1.11% of its GDP and about 6% of its budget on health.²³³ This has resulted in insufficient staffing and beds, and Pakistanis bear significant out-of-pocket costs to cover the costs of healthcare.

Disasters such as flooding or heatwaves put even greater pressure on health systems. During flooding and heatwaves in 2022 and 2024, Pakistan's already overstretched system came under repeated strain, failing to deliver adequate care to those in need. Floods damaged or destroyed many health facilities, and flooded roads meant that many people could not reach facilities for weeks and sometimes months. During heatwaves, hospitals were ill-equipped to deal with the overwhelming number of patients seeking care, leading to life-threatening delays in treatment. Amnesty International interviewed dozens of people whose relatives' deaths during a heatwave or flood may have been avoided, had they been able to access preventive measures or more timely medical treatment. Given their heightened risk to disease and extreme heat, older people and young children were among those most harmed by these failures.

Under the International Covenant on Economic, Social and Cultural Rights (ICESCR), which Pakistan has ratified, States have an obligation to protect the right to health using their maximum available resources.²³⁴ This right extends to the underlying determinants of health, including food and nutrition, access to potable water and adequate sanitation, safe and healthy working conditions, and a healthy environment.²³⁵ This right also applies during times of emergency, when the state must provide disaster relief and humanitarian assistance.²³⁶ Finally, the Convention on the Rights of the Child (CRC) also enshrines children's right to health, which includes the obligation of states to reduce infant and child mortality, combat disease and

232 WHO, "Health Systems Financing: The path to universal coverage", 2010, https://iris.who.int/bitstream/handle/10665/44371/9789241564021_eng.pdf?sequence=1

233 WHO, *Global Health Expenditure Database*, <https://apps.who.int/nha/database/ViewData/Indicators/en> (accessed 15 February 2025).

234 International Covenant on Economic, Social and Cultural Rights (ICESCR), Article 12; UN Committee on Economic, Social and Cultural Rights (CESCR) General Comment 14: The Right to the Highest Attainable Standard of Health (Article 12), 11 August 2000, UN Doc. E/C.12/2000/4, para. 47.

235 CESCR, General Comment 14 (previously cited), para. 11.

236 CESCR, General Comment 14 (previously cited), para. 16.

malnutrition including those caused by unclean drinking water, and ensure pre-natal and post-natal care for mothers.²³⁷

Ultimately, while Pakistan must adapt and better fund its health system to cope with a changing climate, historic emitters in other parts of the world bear the greatest responsibility for the foreseeable and preventable harm that climate change inflicts on human health.

3.1 HOSPITALS INACCESSIBLE, OVERWHELMED

According to the WHO, 2,000 health facilities, or 13% of all health facilities in Pakistan, were damaged or destroyed during the 2022 floods, leaving millions without access to care.²³⁸ Reaching a hospital also became extremely difficult, as many roads were damaged or submerged. Accessing routine treatment or medications became impossible, leaving those with chronic conditions that normally would be easily manageable, such as diabetes, at heightened risk. The cost of healthcare, burdensome at the best of times, became untenable to those who lost their livelihoods during the floods, forcing many to take on debt.

While heatwaves did not create the same physical barriers to accessing healthcare, health facilities appeared ill-equipped to deal with the surging number of patients with heat-related symptoms. In Karachi, during the prolonged heatwave in June and July 2024, hospitals quickly ran out of beds to accommodate patients, leading to delayed treatment and likely to preventable deaths.

ACCESS TO HEALTHCARE DURING FLOODING

Healthcare became almost impossible to access at the height of the floods in 2022. Regular transport, such as rickshaw taxis, had largely stopped working due to damaged or submerged roads. People were forced to pay exorbitant rates or simply wait for the roads to clear. Boats were often not readily available,²³⁹ and people described carrying loved ones who were sick through knee or waist-high water to reach a functioning road.

Rasool Mallah, who was in his 60s, was staying with his family on an elevated piece of land near his home in Dadu district after fleeing during the 2022 floods. The land was surrounded by floodwater, and his daughter Nooram said that Rasool soon came down with a fever. When, a few days later, Rasool lost consciousness, the family tried reviving him and called a boat to transport him to the nearest hospital.

237 UN Convention on the Rights of the Child (CRC), Article 24.

238 World Health Organization, *WHO's Health Emergency Appeal 2023*, <https://iris.who.int/bitstream/handle/10665/365635/WHO-WHE-EXR-2023.1-eng.pdf?sequence=1>, p.172.

239 Interview with community leader, 19 April 2024, Gozu, Sindh, Pakistan.

Nooram said: “We were unable to transport or shift him to the hospital as everything was under water.”²⁴⁰ After several hours, a boat came, but Rasool died before reaching the hospital.

Chando, from Badin district, said he was unable to transport his mother, who was in her late 60s and was diagnosed with malaria during the 2022 floods, to the nearest health facility because the local rickshaw taxi was not operating. When it began operating a few days later, he described the challenges of what was usually a half-hour journey:

“We were pushing the rickshaw through the mud. It took one and a half hours to reach the facility, we were stuck on the road.”²⁴¹

Mohammad Yaar Ali, 76, had a heart attack in July 2022, during the floods. On a normal day it would have taken about an hour to reach the IHHN facility in Muzaffargarh. His son, Mohammad Bilal, said:

“There was heavy rain so we were unable to leave the home... We immediately called a car but it took one and a half hours to arrive, and then another four hours to reach the hospital.”²⁴²

Mohammad Yaar Ali was pronounced dead upon arrival at the hospital on 23 July 2022.²⁴³

Sometimes, people were able to reach hospitals but found that staff there were too overwhelmed to help. Many people described having to visit private clinics and paying out-of-pocket for healthcare during the floods.²⁴⁴ Ghulam Shabeer, 42, said his one-year-old daughter Tahira was experiencing diarrhoea, vomiting and fever after the family was displaced during the 2022 floods. They took her to the nearest government hospital in Pangrio:

“They didn’t have medication so they told us to go to a private clinic... [At the private clinic] they were unable to control her diarrhoea and she was becoming so weak, they suggested to go to [IHHN in] Badin because we were poor and not able to afford the medicine.”²⁴⁵

By the time Shabeer reached the hospital in Badin, it was too late. Tahira was admitted at 11pm, and died around 10am the next morning, on 29 September 2022. According to hospital records from IHHN, she had suspected malaria, acute gastroenteritis, and a lower respiratory tract infection.²⁴⁶

240 Interview with Nooram Mallah, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

241 Interview with Chando, 15 January 2025, Matli, Sindh, Pakistan.

242 Interview with Mohammad Bilal, 6 January 2024, Muzaffargarh, Punjab, Pakistan.

243 Hospital records shared by IHHN; on file with Amnesty International.

244 Interviews, January 2025.

245 Interview with Ghulam Shabeer, 14 January 2025, Badin, Sindh, Pakistan.

246 Hospital records shared by IHHN; on file with Amnesty International.



⦿↑ A swarm of mosquitoes gathering on the exterior of a tent of people displaced by floods.

←⦿ Flood survivors frequently require treatment for skin-related conditions.

⦿↓ An older man undergoing a medical checkup after being affected by a flood-related illness in 2024.

Images © Shakil Adil / Amnesty International



Even those who survived the 2022 floods still bore physical scars. Older adults with chronic conditions were forced to delay treatment, which sometimes had long-term consequences. Aqel Nadh, who is in her late 60s and has diabetes, had successfully treated diabetic wounds on her foot in 2021. But when new wounds appeared during the floods in 2022, she was not able to go to the doctor for about three months due to lack of transport and financial constraints:

“The doctor asked me to come each day to change the dressing but I couldn’t get there... My foot turned black and was swollen. Eventually I went to the hospital due to immense pain, and the doctors said they would need to amputate.”²⁴⁷

Treatment was also postponed for some people with life-threatening conditions. Meeran Bheel, 67 at the time of her death, was diagnosed with abdominal cancer on 24 June 2022, a few weeks before the monsoon rains began.²⁴⁸ Her son, Lachhman, said the family had been trying to come up with money for an operation to remove the tumour, which would have cost between PKR 200,000 and PKR 250,000 (US\$720 to US\$900), a huge expense for the family. The floods shattered all hope of organizing Meeran’s treatment:

“During the floods everyone was trying to survive, it was not possible to concentrate on her... We moved away from our village to [live on] the road... After one month, she died on the road. She had a swollen abdomen and was crying in pain.”²⁴⁹



↑ Aqel Nadh, whose leg was amputated due to untreated diabetes during the 2022 floods, sitting with her son, Eidu, at their home in Badin, Sindh. © Khaula Jamil / Amnesty International

ACCESS TO HEALTHCARE DURING HEATWAVES

Heatwaves do not destroy hospitals or damage roads the way floods do. But the Karachi 2024 heatwave in particular brought already-overstretched health facilities to the brink.

247 Interview with Aqel Nadh, 16 April 2024, Korwah, Sindh, Pakistan.

248 Hospital records shared by IHHN; on file with Amnesty International.

249 Interview with Lachhman Bheel, 17 April 2024, Shadi Large, Sindh, Pakistan.

Most heat-related deaths are preventable if people have access to cool spaces and water.²⁵⁰ During the heatwave of 2024, the Sindh PDMA regularly published advisories and situation reports about the extreme heat. Together with humanitarian organizations, the PDMA established more than 1,800 “heat stabilization camps”²⁵¹ (cooling centres) across the province, including 352 in Karachi.²⁵² However, the vast majority of people that Amnesty International interviewed in Karachi were unaware of these cooling sites, or said that none had been established in their neighbourhood.²⁵³ One man said the only cooler place he knew of was the mosque.²⁵⁴ Those who lived in detached homes could spend a few hours at night on the roof to cool down; those who lived in large apartment blocks often did not have such recourse.

Tanveer Ahmed, the Executive Director of HANDS, an NGO that ran more than 50 cooling centres in Karachi in the summer of 2024, said that capacity would need to increase many times over to meet the needs of the city’s 20 million residents: “Karachi is a huge city, 50 [cooling] camps is nothing for a day of heatwaves. Similarly in other cities, the proportion of camps are very low, and these camps require resources.”²⁵⁵

With most people unable to avoid working in hot conditions or to seek shelter in cool public spaces, health facilities were often the only recourse interviewees had from the heat. During the summer of 2024 in Karachi, particularly in late June and early July when temperatures peaked, hospitals were overwhelmed by the number of people seeking care. Often, it appeared that smaller primary and secondary care facilities were unequipped to take on patients, funnelling them all towards the major tertiary hospitals.

One man described how his 65-year-old father was unable to get timely care during a heatwave. A retired tailor, he had been showing signs of heat exhaustion for a couple of days: “He was having difficulty breathing... We could feel that his body was too hot, when we touched his skin it was as if you put your hand on a cloth that was just ironed.”²⁵⁶ At around 2pm on 25 June 2024, his condition deteriorated. The family took him to a nearby primary care clinic but were turned away.

“The clinic told us to move him to a major hospital because his condition was too serious,” his son said. “His body was hot, his eyes were open but he was breathing very heavily and he was not moving.”²⁵⁷

250 Kyusik Kim and others, “A Comparative Assessment of Cooling Center Preparedness across Twenty-Five U.S. Cities”, 30 April 2021, Environmental Research and Public Health, Volume 18, Issue 9, <https://pmc.ncbi.nlm.nih.gov/articles/PMC8125005>

251 The PDMA does not specify exactly what defines a “heat stabilization camp”. In its own guidance, the NDMA says that local and provincial governments should “Set up cooling centres in public buildings such as community centres or libraries to provide relief from the heat for residents without access to air conditioning.” In reality, however, NGOs charged with running “heat stabilization camps” said that they did not have the resources to provide air conditioned facilities; most of the “heat stabilization camps” involved a shaded open area with fans, water, and in some cases medical staff as needed. For more information see: <http://www.ndma.gov.pk/storage/guidelines/April2024/Zp0ylx4ksogDptXteEYS.pdf>

252 Pakistan, PDMA Sindh, “Situation Report for heatwave 2024” (previously cited).

253 Interviews, September–October 2024.

254 Interview, 2 October 2024, Karachi, Sindh, Pakistan.

255 Remote interview with Tanveer Ahmed, Executive Director of HANDS charitable organization, 5 December 2024.

256 Interview, 2 October 2024, Karachi, Sindh, Pakistan.

257 Interview, 2 October 2024, Karachi, Sindh, Pakistan.

The family called for an ambulance, but there were no government ambulances available, and even charitable organizations said they were too overwhelmed to send one immediately. The family eventually found a private ambulance that they hired for PKR 3,000 (US\$11). They did not reach a major hospital until around 5pm, but at that point, their father had already died.

Healthcare workers said that hospitals were overwhelmed during the 2024 heatwave. Mohammad Farooq, an ambulance driver for the charitable organization Edhi Foundation, said that during the heatwave he often had to bring patients to multiple facilities before they found an available bed: “There was a problem in the hospitals. There were no beds. Patients were not being attended to... I had three or four people die in my ambulance before we got to a hospital.”²⁵⁸

One man described delays in his 50-year-old brother’s medical treatment on 26 June 2024, amidst peak temperatures. The man worked in a textile factory that had no air conditioning. At night, the fans in his room were not working because the electricity had been shut off by K-Electric, the local electricity provider. In the early hours of the morning, the family realized the man had had a stroke, and they rushed him to a local hospital where staff would not admit him, saying “his condition was too serious.” The family rushed him to one of the large tertiary care hospitals in the city:

“[The hospital employees] wanted us to go back home but we wanted them to treat him in the hospital. We asked, ‘Where should we take him?’ They told us the beds were completely occupied and there was nowhere to put him.”²⁵⁹

Eventually, the family successfully lobbied for him to be admitted, but they had waited outside for over four hours. The man died of complications from the stroke several days later.

Dr. Shahid Rasul, Executive Director of Jinnah Postgraduate Medical Centre (JPMC), one of the largest government hospitals in Karachi, said the facility had prepared for the heatwave by setting up a small, specialized heatstroke unit for critical patients. However, the hospital still struggled to cope with the number of people seeking care because many patients with less severe symptoms, who might have been helped by primary or secondary care facilities, rushed to the major hospitals instead, overwhelming capacity:

“Before the [hot] season comes in, there should be heatstroke units [in health facilities] all over the city. Ninety percent of the population does not go [to] hospitals, they go to their general practitioners. So we need medical education or training of general practitioners on how to deal with heatwaves, and for the government to subsidize them with medication [for heat-related illnesses]. At the end of the day, they are the first line of defense.”²⁶⁰

258 Interview with Mohammad Farooq, 26 September 2024, Karachi, Sindh, Pakistan.

259 Interview, 2 October 2024, Karachi, Sindh, Pakistan.

260 Interview with Dr. Shahid Rasul, 25 September 2024, Karachi, Sindh, Pakistan.

3.2 STRUCTURAL GAPS IN PAKISTAN'S HEALTH SYSTEM

The climate crisis puts strain on a healthcare system that is already overstretched. The government of Pakistan does not adequately fund healthcare, resulting in insufficient staffing and beds, and significant out-of-pocket costs. As noted above, in 2021 Pakistan spent just 1.11% of its GDP and about 6% of its budget on healthcare,²⁶¹ significantly short of the amount needed to ensure universal healthcare coverage.²⁶² Pakistan also spends significantly less on healthcare than its regional peers: according to the WHO, the government spent less than US\$14 per person on health in 2021, compared to US\$31 in India and US\$22 in Nepal.²⁶³ Pakistan has made meaningful progress on key indicators such as maternal and infant mortality, but even in these areas it is still significantly behind neighbouring countries, with 39 neonatal deaths per 1,000 live births, compared to 18 for India and 17 for Bangladesh and Nepal.²⁶⁴

ICESCR and the CRC guarantee the right to the highest attainable standard of health.²⁶⁵ Climate disasters undeniably make it more difficult for governments like Pakistan to deliver on those obligations. But many of the challenges facing Pakistan's health system precede any specific climate emergency: they are the result of chronic underinvestment. In its National Adaptation Plan (NAP), the government of Pakistan pledged to adapt its healthcare system to climate change by strengthening the capacity of healthcare bodies at all levels.²⁶⁶ Yet health spending has decreased in recent years, and inadequate staffing, high out-of-pocket costs, and the exclusion of certain groups, such as older people, remain the norm. The right to health is far from a reality for many people in Pakistan.

INADEQUATE FUNDING & STAFFING

The lack of investment in public healthcare in Pakistan has led to a shortage of medical equipment and qualified healthcare professionals.²⁶⁷ Pakistan has about one physician for every 1,000 people.²⁶⁸ Nurses and midwives are in shorter supply, with only 0.5 for every 1,000 people.²⁶⁹ According to the WHO, this means that Pakistan has one of the lowest rates of nurses and midwives per population in the world.²⁷⁰ Public health officials openly discussed with Amnesty International the challenges of ensuring adequate

261 WHO, *Global Health Expenditure Database* (previously cited).

262 WHO, "Health Systems Financing: The path to universal coverage" (previously cited), p. 15.

263 WHO, *Global Health Expenditure Database* (previously cited).

264 UNICEF Data: Monitoring the Situation of Children and Women, <https://data.unicef.org/country> (accessed 15 January 2025).

265 ICESCR, Article 12 and CRC, Article 24.

266 Pakistan, MoCC, *National Adaptation Plan: Pakistan 2023*, https://unfccc.int/sites/default/files/resource/National_Adaptation_Plan_Pakistan.pdf

267 Salman J. Khan and others, "Pakistan's Healthcare System: A Review of Major Challenges and the First Comprehensive Universal Health Coverage Initiative", 4 September 2023, *Cureus*, Volume 15, Issue 9, <https://pmc.ncbi.nlm.nih.gov/articles/PMC10548490>

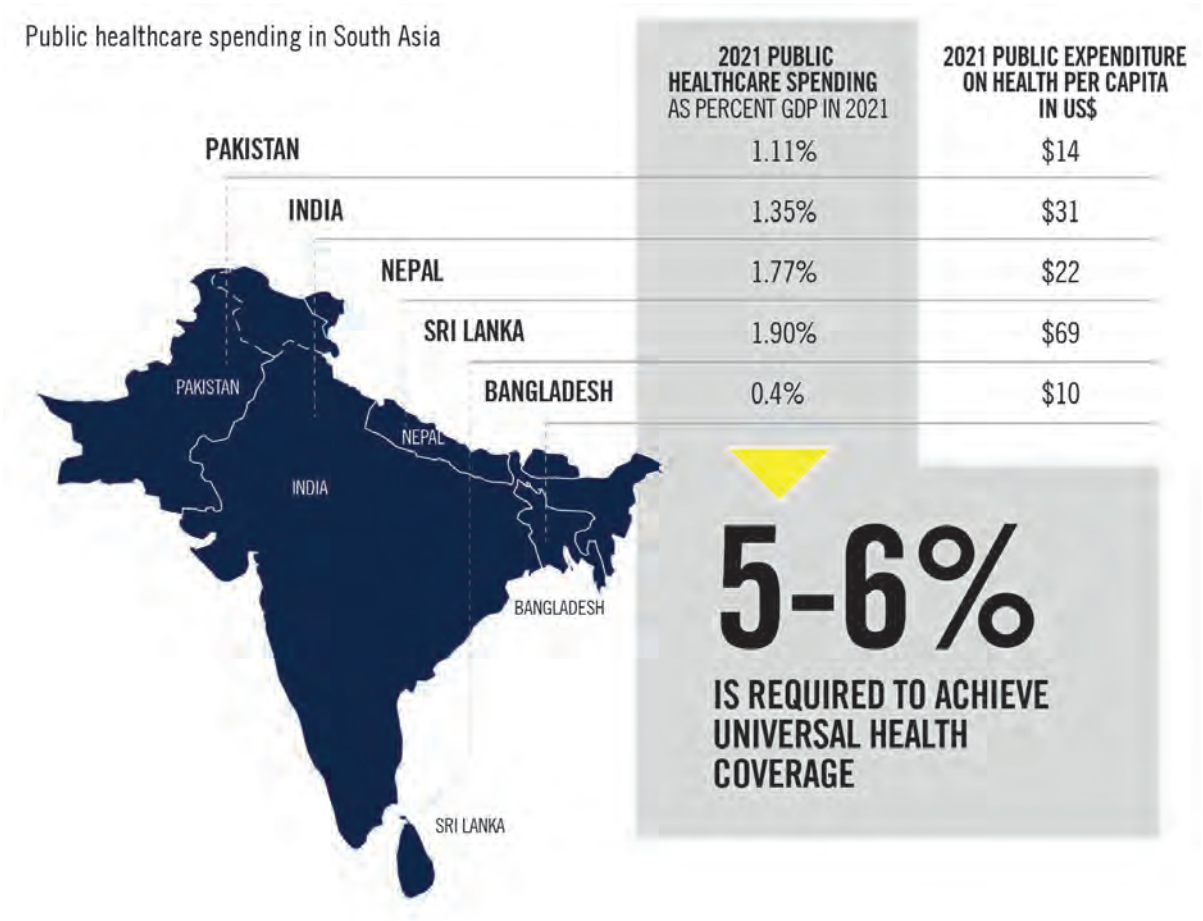
268 WHO, The Global Health Observatory: Global Health Workforce statistics database, <https://www.who.int/data/gho/data/themes/topics/health-workforce> (accessed 15 January 2025).

269 WHO, The Global Health Observatory: Global Health Workforce statistics database (previously cited).

270 WHO, Global Health Observatory, "Nursing and midwifery personnel (per 10,000 population)", [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-\(per-10-000-population\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-(per-10-000-population)) (accessed 15 January 2025).

healthcare given these gaps. Dr. Muhammad Ilyas Gondal, Director General of the Punjab Health Department, said:

“The number of doctors produced in Pakistan is very good, however, the wages are low. After qualifying they leave... There is a brain drain. Staff nurses regularly apply for [permission] to move abroad, just a month or so ago a nurse requested [permission] to move to Rwanda. In a month in Rwanda, she earns US\$3,000, whereas in Pakistan, only US\$400.”²⁷¹



Staffing and budgeting were particularly challenging outside of major cities. Most rural centres are serviced by District Headquarter hospitals, or DHQs. These are secondary care facilities that provide services to about three million people on average.²⁷² In Badin, where IHHN is responsible for managing the local DHQ, healthcare workers said that the facility lacked capacity and equipment. Dr. Abdul Wahab, an emergency doctor at the IHHN DHQ in Badin, said that the facility received between 6,000 and 13,000 patients a day, but had only two ICU beds.²⁷³ He said they also did not have capacity to deal with many

271 Interview with Dr. Muhammad Ilyas Gondal, 14 November 2024, Lahore, Punjab, Pakistan.
272 Pakistan, Health & Population Department of Punjab, “District Headquarter Hospitals”, <https://www.pmuhealth.gop.pk/district-headquarter-hospitals> (accessed 15 January 2025).
273 Interview with Dr. Abdul Wahab, 14 January 2025, Badin, Sindh, Pakistan.

surgical issues, including routine operations like appendicitis. Dr. Wahab said: “We have lots of trauma patients and need to be able to deal with them. We need more capacity here.”²⁷⁴

As a result of that lack of capacity, DHQ workers in Badin said they often ended up referring people to Hyderabad or Karachi (110 and 213 kilometres away from Badin, respectively). But most people had to pay their own way to get there. Dr. Wahab said:

“We have two ambulances but when they take patients to Hyderabad they come back late, they can realistically only do two transfers a day each... That means we can only refer four patients a day out of a lot we are receiving.”²⁷⁵

Because of limited capacity at primary and secondary care facilities, many patients were funnelled towards the large tertiary hospitals in major cities. But these facilities also lacked sufficient capacity to cope with the high number of patients. Dr. Shahid Rasul, the Executive Director of JPMC, said that the hospital’s emergency ward had only 60 to 90 beds, relative to the 2,000 urgent care patients brought to the hospital each day:

“We cannot assure quality care to 2,000 people walking into the ER. That’s three patients every minute... We need to have other hospitals linked [to JPMC], so that we can send less sick patients, like those with diarrhoea, there, and keep the patients [with more serious conditions].”²⁷⁶

Few healthcare providers felt that their facilities were being adequately prepared for climate change and related disasters. Staff at a facility in Badin district said: “I don’t see any preparation from the [Sindh] Health Department, in fact budgets are down, the [primary care unit] in Khoski used to be open 24/7 and now it only runs 12 hours a day.”²⁷⁷

UNBEARABLE COSTS

Because of funding gaps, private resources, primarily from households but also from NGOs and employers, account for 60.8% of health expenditures in Pakistan.²⁷⁸ Paying for healthcare costs the average Pakistani US\$96 per year,²⁷⁹ and the lowest-income groups spend significantly larger portions of their income on healthcare.²⁸⁰ More than half of out-of-pocket spending goes towards medications, while doctors’ fees, diagnostic tests, transportation and surgery make up the bulk of additional costs.²⁸¹ Seventy-

274 Interview with Dr. Abdul Wahab, 14 January 2025, Badin, Sindh, Pakistan.

275 Interview with Dr. Abdul Wahab, 14 January 2025, Badin, Sindh, Pakistan.

276 Interview with Dr. Shahid Rasool, Executive Director of JPMC, 25 September 2024, Karachi, Sindh, Pakistan.

277 Interview with Dr. Lajpat Kumar, 17 April 2024, Shadi Large, Sindh, Pakistan.

278 Pakistan, Bureau of Statistics, *National Health Accounts Pakistan 2019-2020*, October 2022, https://www.pbs.gov.pk/sites/default/files/national_accounts/national_health_accounts/NHA-Pakistan_2019-20.pdf, p. 13.

279 WHO, *Global Health Expenditure Database* (previously cited).

280 Karandaaz, *Private Healthcare in Pakistan: Gaps, Opportunities, and Possibilities: Volume 1*, 2023, <https://www.karandaaz.com.pk/research/publications/private-healthcare-pakistan-volume-1>, p. 27.

281 Pakistan, Bureau of Statistics, *National Health Accounts Pakistan 2019-2020* (previously cited), p. 52.

three percent of out-of-pocket expenditures go towards paying for outpatient services, whereas inpatient services, while often not completely free, are generally lower-cost.²⁸²

The government of Pakistan has attempted to address this problem by introducing new insurance schemes such as the *Sehat Sahulat* Programme (the ‘Health Facility’ Programme), which provides healthcare coverage at participating hospitals for families living in poverty.²⁸³ As of March 2022, 27 million families were registered with the programme.²⁸⁴ However, this has not helped reduce out-of-pocket costs, as is clear from the consistently high rates of out-of-pocket health spending in Pakistan. Even in Punjab, the richest of Pakistan’s provinces, 90,000 out of more than 127,000 claims filed under the regional universal health insurance scheme in April 2024 were denied.²⁸⁵ Dr. Khalid Mahmood, Director of Health Services in the provincial government of Punjab, said:

“UHI [universal health insurance] has existed since 2022. But it only covers some cardiac issues and some surgical procedures... UHI should be available at every hospital and also cover a wider net of issues. All common ailments should be covered.”²⁸⁶

He added that while medications were free to those patients who came to tertiary hospitals for emergency services, primary healthcare providers had a very limited supply of medications. And Punjab’s services are in fact significantly more accessible to most people than other regions, as studies have found that poorer regions like Balochistan perform much worse when it comes to providing their populations with universal health coverage.²⁸⁷

Most interviewees told Amnesty International that they struggled to pay for medication, hospital services, or transport to hospitals. Environmental disasters exacerbated by climate change made whole families much more vulnerable to injury or disease, meaning they were more likely to use healthcare in those times. Several people described taking out loans in order to afford care.

Juman Khan Khoso, 38, said his five-year-old son, Farhan, was crushed by a wall after floodwaters rushed into their village in Dadu district in August 2022. “I was collecting our belongings at the front of the house, my son and wife were inside the house when I saw the wall collapse,” he said. “I rushed over to dig him out, there was already water up to my knee... He was unconscious.”²⁸⁸

282 Pakistan, Bureau of Statistics, *National Health Accounts Pakistan 2019-2020* (previously cited), p. 51.

283 Syed Shahzad Hasan and others, “‘Sehat Sahulat Program’: A Leap into the Universal Health Coverage in Pakistan”, 7 June 2022, Environmental Research and Public Health, Volume 19, Issue 12, <https://pmc.ncbi.nlm.nih.gov/articles/PMC9223125>

284 Hasan and others, “‘Sehat Sahulat Program’: A Leap into the Universal Health Coverage in Pakistan” (previously cited).

285 Dawn, “Patient denial rate in hospitals under UHI plan on the rise”, 19 May 2024, <https://www.dawn.com/news/1834298>

286 Interview with Dr. Khalid Mahmood, Director Health Services, Directorate General of Health Services, Punjab, 11 November 2024, Lahore, Punjab, Pakistan.

287 Di Yang and others, “Pakistan’s path to universal health coverage: national and regional insights”, 15 August 2024, International Journal for Equity in Health, Volume 23, <https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-024-02232-1>

288 Interview with Juman Khan Khoso, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

The family took Farhan first to a local hospital, which said it could not treat him, then to Hyderabad, and finally to Karachi, more than four hours away by road.

“We [bought] medications from private pharmacies and paid for the transportation ourselves. It cost about PKR 125,000 [US\$450] total... We were in a panic at that time, we borrowed money from other people to pay for everything.”²⁸⁹

Zahida Channa, whose one-year-old son contracted cerebral malaria during the floods in Dadu district in 2024, said:

“My son had a very high fever and was unable to open his eyes. I came to my neighbours and asked to borrow PKR 15,000 [US\$54] to take him to the hospital. We took him to the hospital and they gave him a canola drip. The doctor told us if we were five or ten minutes later our child would have died... The doctor said if you can come daily, your son will survive, so we went ten days [for treatment]. The medications were very expensive and we had to pay some doctor fees, the injections were PKR 1,000 [US\$13] each [per day].”²⁹⁰

Older people, who often have chronic health conditions, struggled to pay for healthcare, particularly in the absence of any kind of pension. Mehmood Afzal, 70, had been a rickshaw driver in Karachi until he had to stop driving because a stroke paralyzed his left side. While treatment for the stroke itself had been free at a government hospital, he paid out-of-pocket for medications, x-rays, and follow-up appointments. He said: “I had to take out a loan for PKR 50,000 [US\$179]... I haven’t paid back any of it. I don’t know [how I will], I am relying on God.”²⁹¹ Unable to work on his rickshaw because of his disability, Mehmood had switched to selling boiled corn on the roadside, which helped him earn a few hundred Pakistani rupees per day.

About 45% of people in Pakistan earn less than PKR 15,000 (US\$54) per month, meaning that such costs as those described above would be devastating for many families.²⁹² Studies in Pakistan have found that catastrophic health expenditures are greater in families that have more older people and more children.²⁹³ Even spending money on medication for common conditions such as blood pressure issues and diabetes increases a family’s risk of incurring catastrophic health expenditures.²⁹⁴

289 Interview with Juman Khan Khoso, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

290 Interview with Zahida Channa, 29 September 2024, Sommar Channo, Sindh, Pakistan.

291 Interview with Juman Khan Khoso, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

292 Pakistan, Bureau of Statistics, *Pakistan Labour Force Survey 2020-21*, https://www.pbs.gov.pk/sites/default/files/labour_force/publications/lfs2020_21/LFS_2020-21_Report.pdf, p. 41.

293 S. Bashir and others, “Incidence and determinants of catastrophic health expenditures and impoverishment in Pakistan”, August 2021, *Public Health*, Volume 197, <https://www.sciencedirect-com.ezproxy-prd.bodleian.ox.ac.uk/science/article/pii/S0033350621002341>. In this study, catastrophic expenditures were deemed those between 10 to 40% of a family’s monthly income.

294 Biplab Kumar Datta and others, “Assessing the relationship between out-of-pocket spending on blood pressure and diabetes medication and household catastrophic health expenditure: evidence from Pakistan”, 15 January 2019, *International Journal for Equity in Health*, Volume 18, <https://link.springer.com/article/10.1186/s12939-018-0906-x>

Amnesty International found a general distrust of government health facilities, particularly amongst families living in poor and rural communities, that led to them seeking out private healthcare, further exacerbating cost burdens. One parent of a four-year-old boy with a health condition said: “We do not want to take [him] to a government hospital. The doctors are careless and do not pay attention to people like us.”²⁹⁵ Academic studies have found similar trends amongst poorer urban communities in Pakistan.²⁹⁶

DATA COLLECTION & INTERNATIONAL FUNDING CUTS

Since 1984, the United States Agency for International Development (USAID) has worked alongside governments in more than 90 low and middle-income countries to fund the “Demographic and Health Survey” (DHS).²⁹⁷ The surveys, which were conducted about every five years, collected data on a range of vital health indicators, including maternal and child mortality, nutrition, malaria, tuberculosis, and HIV and AIDS. After 1990, questions about sexual violence were added as well.²⁹⁸ About 30 of the indicators collected in the DHS surveys were used to set benchmarks at the global level, including the 2030 Sustainable Development Goals adopted by the United Nations.²⁹⁹ Pakistan also conducts its own Pakistan Demographic Survey, which includes information about fertility rates and mortality, but the primary source of detailed health data from the country has been the DHS.³⁰⁰

In February 2025, the Trump administration announced that it was terminating the DHS programme, a move that was immediately criticized by public health professionals.³⁰¹ In Pakistan, the most recent DHS survey from 2017-2018 was jointly funded by USAID and the United Kingdom’s Foreign, Commonwealth & Development Office. The UK government has also said that it will cut back foreign aid funding to 0.3% of its gross national income, though it said that climate finance and global health would continue to be prioritized.³⁰²

The Trump administration’s abrupt termination of the DHS programme undermines the ability of governments around the world to respond to public health needs, including HIV and AIDS, gender-based violence, maternal and infant mortality, and vaccinations. This could have significant

295 Interview with Paibhu Bheel and Chandu Bheel, 17 April 2024, village near Shadi Large, Sindh, Pakistan.

296 Aneeqa Rehman and others, “Health care seeking patterns and out of pocket payments for children under five years of age living in *Katchi Abadis* (slums), in Islamabad, Pakistan”, 16 April 2014, *International Journal for Equity in Health*, Volume 13, <https://link.springer.com/article/10.1186/1475-9276-13-30>

297 Caren Grown, “An ode to the Demographic and Health Survey Program”, 6 March 2025, Brookings, <https://www.brookings.edu/articles/an-ode-to-the-demographic-and-health-survey-program>

298 Grown, “An ode to the Demographic and Health Survey Program”(previously cited).

299 US, DHS Program, “SDG indicators that can be estimated in DHS surveys”, https://dhsprogram.com/Topics/upload/SDGs_in_DHS_15Mar2023.pdf

300 Pakistan Bureau of Statistics, *Pakistan Demographic Survey 2020*, April 2022, https://www.pbs.gov.pk/sites/default/files/population/publications/pds2020/pakistan_demographic_survey_2020.pdf

301 New York Times, “Trump Administration Ends Global Health Research Program”, 26 February 2025, <https://www.nytimes.com/2025/02/26/health/usaidd-global-health-surveys.html>

302 UK Parliament, House of Commons Library, “UK to reduce aid to 0.3% of gross national income from 2027”, <https://commonslibrary.parliament.uk/uk-to-reduce-aid-to-0-3-of-gross-national-income-from-2027>

consequences, particularly as climate change makes low and middle-income countries more vulnerable to the spread of diseases such as malaria, typhoid, or cholera, which can spread beyond national borders. The CESCR Committee has interpreted the right to health to include “States’ individual and joint efforts to, inter alia, make available relevant technologies, using and improving epidemiological surveillance and data collection on a disaggregated basis, the implementation or enhancement of immunization programmes and other strategies of infectious disease control.”³⁰³ This cutback in U.S. foreign assistance is clearly an erosion of important protections for the right to health.

USAID funding represented less than one percent of the U.S. government’s budget.³⁰⁴ Funding for the surveys totalled about \$500 million over five years, about half of which came from USAID itself and half of which came from other contributors, including the countries where the surveys were being conducted.³⁰⁵

DISCRIMINATION & EXCLUSION OF OLDER PEOPLE

Older people face discrimination and exclusion at almost every level of Pakistan’s healthcare system, and this begins with data collection. Unfortunately, there is no specific data collection on the health needs of older people in Pakistan. This failure to include older people extends to the now-terminated Demographic Health Survey programme, described above, for which data collection in Pakistan stopped at age 49, as per USAID recommendations.³⁰⁶

The proportion of the world’s population that is over 60 years old is expected to nearly double from 12% in 2015 to 22% in 2050.³⁰⁷ This is true in Pakistan as well, where people over 60 will make up 12.9% of the population by 2050.³⁰⁸ It is therefore essential for policymakers in Pakistan to collect information about the health of this group, particularly considering that older people are more likely to require healthcare than any other age group.

Data collection that fails to include older people or contains arbitrary age cut-offs, such as 50 or 60, undermines the rights of older people and weakens policymakers’ abilities to make choices to improve the lives and health of the older population. As stated by the UN Independent Expert on the enjoyment of all human rights by older persons: “[A] lack of significant data and information on older persons is, in

303 CESCR, General Comment 14 (previously cited), para 16.

304 Amnesty International USA, “Mass Termination of U.S. Foreign Assistance Awards Devastating for Global Human Rights and Humanitarian Efforts”, 27 February 2025, <https://www.amnestyusa.org/press-releases/mass-termination-of-u-s-foreign-assistance-awards-devastating-for-global-human-rights-and-humanitarian-efforts>

305 New York Times, “Trump Administration Ends Global Health Research Program” (previously cited).

306 In its guidance on how to conduct Demographic and Health Surveys, which it funds in many countries around the world, USAID says that people eligible for the survey “include women of reproductive age (15-49) and men age 15-49, 15-54, or 15-59.” For more information see: US DHS Program, *DHS Model Questionnaires*, <https://dhsprogram.com/Methodology/Survey-Types/DHS-Questionnaires.cfm> (accessed 15 January 2025).

307 WHO, Ageing and Health, 1 October 2024, <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health> (accessed 15 January 2025).

308 UN DESA, *World Population Ageing: Highlights* (previously cited).

itself, an alarming sign of exclusion and renders meaningful policymaking and normative action practically impossible.”³⁰⁹ According to the CESCR Committee, the right to health requires that States conduct “epidemiological surveillance and data collection on a disaggregated basis,” which requires the inclusion of older people.³¹⁰

Systemic invisibility in data collection exacerbates everyday exclusion and discrimination that older people face in healthcare settings. Specialized geriatric care catering to the needs of older adults is virtually non-existent in Pakistan, meaning that older people often go to general practitioners who may lack expertise in ageing-related issues.³¹¹ In addition, some families of older adults felt that hospitals were reluctant to admit older patients, even when they were in serious condition.

A major reason that older people struggled to access healthcare was cost. Families openly spoke about the struggle of balancing the costs or logistics of an older person’s care given the family’s limited income. Often, family members were informal workers, who would therefore lose income by taking a day off to assist an older person in reaching a hospital.

Khalid Hussain, whose home was destroyed by floods in Badin district in September 2024, said that his family had already sold two buffalo at significantly abnormally low prices (due to the glutted post-flood market) to pay for the medical treatment of his 61-year-old father, Haji. While displaced and living in a tent near the floodwaters, Haji had diarrhoea for 20 days. His health deteriorated so that he could no longer walk, speak, or eat independently. Khalid said:

“We took him to the hospital in Hyderabad and they did not admit him, they refused saying, ‘We don’t have any space.’... The doctor told us to come back [later]. We cannot confirm that we will take him [back] because we have no money. The transport alone is PKR 15,000 [US\$54]... I am a labourer. I go daily but I do not always receive work. I earn PKR 700 to 800 [less than US\$3] per day.”³¹²

Public health workers and doctors confirmed that older people’s health was often less of a priority, as families struggling to make ends meet could not afford the time off work, transport, or medication required for their care. Dr. Mohammad Aneer Razzak, a pulmonologist at IHHN in Muzaffargarh, Punjab, said most of his patients were older people with chronic lung diseases. He explained:

“When you are not earning for your family you are not cared for much. These are rural areas, when you are a poor person and have to go to work, how can you afford to take an older person [to the hospital]? They are daily wage

309 UN Independent Expert on the enjoyment of all human rights by older persons, Report: *Human rights of older persons: the data gap*, 9 July 2020, UN Doc: A/HRC/45/14, para. 19.

310 UN CESCR General Comment 14 (previously cited), para. 12.2c.

311 Natasha Roya Matthews, “Health and socioeconomic resource provision for older people in South Asian countries: Bangladesh, India, Nepal, Pakistan and Sri Lanka evidence from NEESAMA”, 20 December 2022, Global Health Action, Volume 16, <https://www.tandfonline.com/doi/full/10.1080/16549716.2022.2110198>

312 Interview with Khalid Hussain, 28 September 2024, Babar Ali Goth, Sindh, Pakistan.

workers... I have multiple patients with tuberculosis, it requires six months of treatment. They are supposed to visit my [office] every month, but they don't come. Most often, [older people] say there is no one to take them... We always come across these issues with older patients."³¹³

Dr. Khalid Mahmood, Director of Health Services in the provincial government of Punjab, put it more bluntly: "After 70 years no one cares about you. Because [doctors] cannot take money from [an older person], he is now a waste particle."³¹⁴

313 Interview with Dr. Mohammad Aneer Razzak, 22 April 2024, Muzaffargarh, Punjab, Pakistan.

314 Interview with Dr. Khalid Mahmood, Director Health Services, Directorate General of Health Services, Punjab, 11 November 2024, Lahore, Punjab, Pakistan.

4 EMERGENCY RESPONSES

The 2022 floods were among the most devastating in Pakistan's history, and would have posed a herculean humanitarian challenge to any government. Millions were stranded by floodwater without access to shelter, food or potable water.³¹⁵ Amnesty International's investigation found that while local organizations and volunteers often stepped in to fill the gaps, the overall humanitarian response fell well short of people's needs. Since then, the government has invested in some aspects of disaster response, such as early warning systems, but Amnesty International still observed many shortcomings in the government's overall response during the 2024 floods, despite their smaller scale.



©↑ An aerial view of a community isolated and surrounded by floodwaters near Badin, Sindh, in September 2024.
© Amnesty International

315 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment* (previously cited), p.13.

While heatwaves have a major impact on human health and livelihood, they are a less visible type of disaster. Compared to flooding, heatwaves remain a neglected issue in the area of disaster management in Pakistan, and responses to them have been far from robust.³¹⁶ When provincial and local governments do respond to heatwaves by setting up cooling centres for example, they have been too few and under-resourced to meaningfully protect people from the heat. Heatwave management plans are also not in place across all provinces, as previously reported by Amnesty International.³¹⁷

Pakistan faces structural barriers to improving disaster responses. Funding often does not filter down to the district level, leaving local governments closest to the ground unable to respond quickly and flexibly to a disaster. The government has also placed significant security restrictions on the operation of NGOs, requiring them to jump through bureaucratic hoops and obtain permissions to operate, even during emergency situations.³¹⁸ While some of these barriers were waived in 2022 due to the scale of the disaster, they continued to prove a barrier to NGOs operating in the wake of smaller-scale floods in 2024.³¹⁹

Finally, Pakistan's ability to adapt to climate change has in part been constrained by a lacklustre international response. The international community gave US\$10.5 billion – still short of the US\$16.3 billion of the estimated need – towards Pakistan's flood response in 2022, but much of that was in the form of loans repackaged from prior commitments, rather than unconditional aid.³²⁰ Despite the calls of Pakistan and other nations most severely affected by climate change, high-income, high-emitting nations have continued to under-deliver on the financing necessary to help countries adapt and recover from loss and damage.³²¹ UN Secretary-General Antonio Guterres, marking the one-year anniversary of the 2022 floods, said: "The truth is that no one can afford climate breakdown. There is not enough humanitarian and development aid in the world for that."³²²

4.1 FLOODS: "A SUDDEN ATTACK"

EARLY WARNING SYSTEMS

Many people told Amnesty International that they did not receive early warnings during the 2022 floods. Others, particularly communities living near lakes, received warnings from local Irrigation Department

316 Remote interview with Tanveer Ahmed, Executive Director of HANDS charitable organization, 5 December 2024.

317 Amnesty International, *A Burning Emergency: Extreme Heat and the Right to Health in Pakistan* (previously cited), Ch. 5.

318 ACAPS, *Humanitarian Access Overview*, July 2023, https://www.acaps.org/fileadmin/Data_Product/Main_media/20230705_ACAPS_Global_Analysis_Hub_Humanitarian_Access_Overview.pdf

319 Interviews, 2024.

320 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment*, October 2022 (previously cited).

321 Amnesty International Canada, "COP29: Climate finance target is a blueprint for deepening inequalities, violating human rights", 27 November 2024, <https://amnesty.ca/human-rights-news/cop29-climate-finance-target-a-blueprint-for-violating-human-rights>

322 United Nations Secretary-General, "Secretary-General's remarks at the Informal Briefing to the General Assembly one year on from the 2022 Pakistan Floods: Resolution 77/1 on Progress in Relief, Rehabilitation, Reconstruction and Prevention [as delivered]", 27 September 2023, [emarks-the-informal-briefing-the-general-assembly-one-year-the-2022-pakistan-floods-resolution-771-progress-relief-rehabilitation-reconstruction-and?](https://www.un.org/press/en/2023/sgsm18482.docstxt)

officials that the banks might breach. But even those who were informed about the heavy rains were not aware of the potential scale of the flooding and did not receive any evacuation or other assistance. Instead, almost everyone interviewed by Amnesty International fled in a panic only after water began rising in their homes. Nawo Kohli, 54, said of his flooded village in Badin district: “Nobody informed us, it was just a sudden attack.”³²³

Syed Salman Shah, Director General of the PDMA of Sindh, said that his agency had used warning systems even in 2022, including via SMS, television, newspapers, social media, and announcements via mosques. However, he said that information provided by the Pakistan Meteorological Department was often not precise enough to allow the PDMA to anticipate the scale of a disaster, which was the case in 2022:

“The warning was there, but warning about the extent of the damage or the magnitude of the disaster was not... [The Meteorological Department] give warnings in qualitative but not quantitative terms, we cannot draw out actionable information [from this]... In 2022, the forecast said there would be 60-70% more rainfall than normal, but in some places it was 300-400% more rainfall... The quantum of disaster was too big.”³²⁴

Amnesty International analysed 136 weather alerts issued by the Sindh PDMA between 1 June 2022 and 31 December 2022 to verify whether alerts were issued in advance of heavy rainfall. An analysis of the alerts revealed that the Sindh PDMA provided advanced warnings to national, provincial and district government agencies, as well as some NGOs, with relevant guidance on ensuring public safety during the rain. The guidance urged people to avoid roadway underpasses, drainage ditches, low-lying areas and anywhere else where water accumulates during a flood, and suggested moving to safer places during flash flooding.³²⁵ Amnesty International also analysed 73 alerts issued by the Punjab PDMA between 19 June 2022 and 28 July 2022. These alerts provided advance warnings of the impending rainfall, but unlike in Sindh, the Punjab PDMA did not provide specific precautions people should take nor did it specify the intended recipients of the alerts.

While the PDMA issued these alerts in advance of significant rainfall, it was at the discretion of the agencies receiving them to act upon them and disseminate them further. Amnesty International’s interviews suggest that these alerts did not reach many individuals in 2022, and that the alerts therefore did little to improve or hasten the response of rescue or evacuations efforts.

It appears that warning systems have somewhat improved since 2022. In particular, interviewees noted that there has been an increase in information about heavy rains and heat spread through SMS and automated phone calls, which can be more effective given the low literacy rates in rural areas in

323 Interview with Nawo Kohli, 17 April 2024, Shadi Large, Sindh, Pakistan.

324 Interview by video call with Syed Salman Shah, Director General of the Sindh PDMA, 27 June 2024.

325 Pakistan, Sindh Province, Provincial Disaster Management Authority, “Weather Warning” (No. PDMA(s)/7(78)/15/375), 25 July 2022, https://pdma.gos.pk/Documents/Flood/Flood_2022/Alerts_&_Advisories/Ww_25-07-2022.pdf

particular.³²⁶ Some people said that their communities had invested in shared mobile phones, in part so that families living there could be aware of extreme weather warnings. Amir Bux, a father of six children in Matiari district of Sindh, said: “There was no warning in 2022 about the rain or the floods. Our family did not have a phone. There are now two or three smartphones in the village that the community uses to access news.”³²⁷

In some cases, the increase in early warnings appeared to have saved lives. In Khyber Pakhtunkhwa province, for example, one volunteer organizing evacuations in Charsadda district, which was hit by heavy flooding in April 2024, said:

“The early warning system was so effective and strong... A responsible team [of government officials] disseminated [information about flooding] to the public through social media and local radio. That’s why in April 2024 we had lots of houses washed away, but nobody died [in our village].”³²⁸

In areas where residents lacked access to social media or phones, local officials used announcements from mosques and door-to-door visits. Azam Khan, a resident in Charsadda district, said:

“We left when we received the alert from police... Our area does not usually flood, so when the police party came we thought it would be serious and moved... The flood came two or three hours later... Now the land where my house was has eroded away and is now part of the river. It is no longer there.”³²⁹

However, in September 2024, people in Sindh province said that early warning systems had failed them. While warnings usually focused on heavy rainfall, they said that their communities were inundated by water from breached rivers or canal banks, which they had not been warned about. In one case, the community even organized an informal patrol that monitored the nearby canal bank before it overflowed.³³⁰ Ali Hassan Sumejo, a farmer in Badin district, said: “There were no flood warnings at all. There were some alerts [on our phones], but the government was just telling us that there was rain, but it was not the rain that destroyed us, it was the [river breach].”³³¹



☞ ↑ Ali Hassan Sumejo bringing his daughter to a medical camp in Badin in 2024.
© Shakil Adil / Amnesty International

326 Interview with Javed Soz, director of the Sindh Housing Community Foundation, 18 April 2024, Hyderabad, Sindh, Pakistan.

327 Interview with Amir Bux, 18 April 2024, Mohammad Khan Rahoo, Sindh, Pakistan.

328 Phone interview with volunteer organizer, 31 October 2024, Charsadda, Khyber Pakhtunkhwa, Pakistan.

329 Phone interview with Azam Khan, 01 November 2024, Charsadda, Khyber Pakhtunkhwa, Pakistan.

330 Interview with Hafiz Rabnawaz Chang, 28 September 2024, Haji Soomar Chang, Sindh, Pakistan.

331 Interview with Ali Hassan Sumejo, 28 September 2024, Ali Buz Sumejo, Sindh, Pakistan.

Lack of early warning that is clear and specific can have deadly consequences, particularly for people with limited mobility and for young children. Amnesty International spoke to several parents or guardians of young children who were killed in the chaos of the floods because they had not anticipated having to flee. Khatoon Chandio, 66, described fleeing her home in Dadu district with her family, including her six-year-old granddaughter Khausar:

“All of a sudden water was surrounding our home. We started shouting and crying for help. Local fishermen came and helped us but we lost our belongings... Everyone was in the boat and was panicking. On the way from our house to the village, [Khausar] fell out... After a couple of minutes we noticed she was missing.”³³²

Khausar’s body was found and buried the next day. In its 2023 NAP, the government of Pakistan said that investing in early warning systems was one of its top priorities in its response to climate change.³³³ The plan pledges to develop Multi-Hazard Vulnerability and Risk Assessments at the national and district levels. While these risk assessments do exist, they often appear inaccurate: the plans from Badin and Dadu districts in Sindh, for example, stated that several flood-affected communities visited by Amnesty International “[fall] out of vulnerable zone for Riverine Flood”, despite clear evidence to the contrary.³³⁴

EVACUATIONS

Very few people evacuated ahead of the 2022 floods, in large part due to the lack of early warning described above. But even after the floods began, those affected, many of whom lived in rural areas, were unable to move to displacement camps, cities, or anywhere with shelter or better living conditions. According to Syed Salman Shah, the Director General of the Sindh PDMA, out of 7.1 million people who were displaced in Sindh, only 2.5 million ever reached displacement camps.³³⁵ The remainder lived on elevated roadsides near their communities, making it more difficult for humanitarian aid to reach them.

Many people said there simply were not enough boats to facilitate evacuations. One community leader in a village of about 5,000 people in Dadu district said:

“It took a month to evacuate our village... people were climbing on the roofs with their luggage. For about a week the roofs were still safe... The [local] government gave us two or three boats but otherwise people were paying for boats to leave on their own. If family members stayed [on top of] houses surrounded by water, male family members had to go get food by swimming.”³³⁶

332 Interview with Khatoon Chandio, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

333 Pakistan, MoCC, *National Adaptation Plan: Pakistan 2023* (previously cited), p.6.

334 Pakistan, Sindh Province, Provincial Disaster Management Authority (PDMA), “MHVRA Informed Disaster Management Plan 2023-2032: District Badin”, https://pdma.gos.pk/Documents/District_Management_Plans/DMP%20Badin.pdf, p.22; Pakistan, Sindh Province, Provincial Disaster Management Authority (PDMA), “MHVRA Informed Disaster Management Plan 2023-2032: District Dadu”, https://pdma.gos.pk/Documents/District_Management_Plans/DMP%20Dadu.pdf, p.22.

335 Interview by video call with Syed Salman Shah, Director General of the Sindh PDMA, 27 June 2024.

336 Interview with a community leader in Dadu district, 19 April 2024, Sindh, Pakistan.

Humanitarian organizations operating in Sindh and other flood-affected areas in 2022 said that there was a significant shortage of rescue boats available. Tanveer Ahmed, Executive Director of the large charity organization HANDS, said:

“We were using boats, and people were asking for boats to get rescued, to bring out their women and older people from villages where they were surrounded by water. But the number of boats available was very low, the public sector failed to bring boats, it was mostly charity organizations.”³³⁷

Because boats were few and far between, most people waded through the floodwaters to save themselves and their belongings. Many interviewees said that organized government-led evacuations were not available in their communities, and described having to ask private boat owners to assist with evacuations; in some cases they paid their own landlords to do so.³³⁸ Khatoon Chandio, 66, said that after fleeing her home for higher land, her family was unable to evacuate further to a displacement camp in the city:

“Everything was under water. Those that left had money. Transportation was expensive: it was 20,000 PKR [US\$72] to go to Dadu, or 40,000 PKR [US\$144] to go to Hyderabad... We are poor so we could not leave.”³³⁹

Many government officials told Amnesty International that people in rural areas preferred not to leave their homes and their livestock, and therefore refused evacuation when it was offered. Syed Salman Shah, the Director General of the Sindh PDMA, said that he believed people chose not to leave their homes because they feared losing property: “People are scared that they might not get that piece of land back once the water has receded.”³⁴⁰ Amnesty International interviewed several families who said that they had been displaced before (in floods in 2010 for example), only to return and find that their land had been occupied by others.³⁴¹ And many interviewees expressed concerns about their livestock, which would have been difficult to transport to displacement camps. Tanveer Ahmed, from HANDS, said that humanitarian camps were often set up in urban areas very far from people’s homes, which made leaving more difficult:

“The government established a few of these [displacement] camps in major cities, which were mostly [far away] from the villages... These are agricultural areas. People have their land, their livestock which is an asset. They don’t want to go to a very distant place.”³⁴²

In 2024, some flood-affected areas appeared to have better access to boats and other equipment with which to move their belongings. In the Tarai area of Badin district, people in flood-affected communities said various NGOs, politicians, and government officials had helped in providing boats after the floods.³⁴³

337 Remote interview with Tanveer Ahmed, Executive Director of HANDS charitable organization, 5 December 2024.

338 Interview with Nawo Kohli, 17 April 2024, Shadi Large, Sindh, Pakistan.

339 Interview with Khatoon Chandio, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

340 Interview by video call with Syed Salman Shah, Director General of the Sindh PDMA, 27 June 2024.

341 Interview with Ali Akbar Mallah, 20 April 2024, Haji Khair Din Mallah, Sindh, Pakistan.

342 Interview with Tanveer Ahmed, Executive Director of HANDS charitable organization, 5 December 2024.

343 Interviews, September 2024, Badin District, Sindh, Pakistan.

However, in most cases, they moved no further than the nearest elevated road, where they again struggled to protect themselves from the often crowded and unsanitary conditions. Many of those affected said they would have been happy to move further away - to cities, for example - but did not have the means to do so. Shazia Chandio, a 22-year-old woman in Dadu district, said:

“Nobody has helped us. Those who have money here moved [before the flood season] to safer places, but those who don’t have money stay here. The other people who have moved have mostly gone to Mehar [a city about one hour away]... They live in rented homes.”³⁴⁴

DELAYED HUMANITARIAN AID

During the floods, people described waiting for weeks and sometimes longer for any help, including food or shelter, to arrive. Zulfikar Ali, director of the IHHN primary healthcare facility in Khorwah, Sindh, said that in his area it took about 15 days in 2022 before government agencies started providing humanitarian aid to flood-affected communities.³⁴⁵ Before that, people had to survive on whatever food they managed to rescue from their homes. Javed Soz, Director of the Sindh Housing Community Foundation, an NGO, described the challenges of delivering aid: “Villages were surrounded by water. We tried to send our staff on boats to them. It was an extra burden on our budget.”³⁴⁶ Many people said humanitarian aid never reached them at all, such as 41-year-old Heeran Kohli, who said: “Nobody came to help us, no food, nothing.”³⁴⁷

As noted above, most of the displaced people in Sindh, which had the highest number of displaced people overall, never made it to camps. Those that did, however, said that conditions were crowded and unsanitary, and that the provision of food and water was haphazard at best, facts which were also reported by local media at the time.³⁴⁸ One man who fled his home in Dadu district to a displacement camp in Sehwan said: “NGO guys were bringing rations on trucks to the entry gates of the camps. People living near the gates were looting them, so we [living further from the gates] were unable to receive [food].”³⁴⁹

Javed Soz, from the Sindh Housing Community Foundation, said:

“Most of the camps had no proper staff. The government identified areas where people could camp, but there was no staff, no information on who was responsible for these camps, no infrastructure.”³⁵⁰

344 Interview with Tanveer Ahmed, Executive Director of HANDS charitable organization, 5 December 2024.

345 Interview with Zulfikar Ali, director of Indus Health & Hospital Facility in Khorwah, Sindh, Pakistan.

346 Interview with Javed Soz, director of the Sindh Housing Community Foundation, 18 April 2024, Hyderabad, Sindh, Pakistan.

347 Interview with Heeran Kohli, 13 January 2025, Badin, Sindh, Pakistan.

348 The New Humanitarian, “The limits of loss and damage: A cautionary tale from Pakistan: This year’s historic floods exposed just how much women and the poor have been systematically ignored.”, 21 November 2022, <https://www.thenewhumanitarian.org/opinion/2022/11/21/loss-and-damage-Pakistan-floods-women-climate-change>; Dawn, “‘This is not our country’: At shelters in Karachi, flood victims struggle to stay afloat”, 29 September 2022, <https://www.dawn.com/news/1711611/this-is-not-our-country-at-shelters-in-karachi-flood-victims-struggle-to-stay-afloat>

349 Interview with Heeran Kohli, 13 January 2025, Badin, Sindh, Pakistan.

350 Interview with Javed Soz, director of the Sindh Housing Community Foundation, 18 April 2024, Hyderabad, Sindh, Pakistan.

Some humanitarians said that it was the poor conditions in the camps that contributed to people's reluctance to move far from their homes. According to Tanveer Ahmed, the Executive Director of HANDS:

"If the government established well-maintained camps with all supplies of water and food, people would go there. But in many parts of Sindh... there were no camps. [Where there were] camps that were properly managed, people moved."³⁵¹

PEOPLE WITH DISABILITIES IN DISPLACEMENT

People with disabilities experience unique risks in displacement settings, given they often lose access to homes that they know well and are customized to their needs, as well as to assistive devices that help them move or communicate freely. Amnesty International spoke with several people with disabilities who had experienced particular hardship due to flooding and displacement.

In displacement camps, people with disabilities had no support services to help them navigate a new setting and to access humanitarian aid. Ahmed Khan, 57, who has a serious hearing impairment, described being unable to communicate with others in a displacement camp in Sehwan, Sindh, where he had moved during the floods. Ahmed, who did not grow up with sign language training, primarily communicates through hand gestures that his family members understand. His wife, Moomal Mallah, told Amnesty International:

"[Displacement] was really difficult for him. Most people there did not know he was deaf so when he went to receive the aid, people started hitting him and [telling him to] go away. But he didn't understand. After a couple of incidents we asked him not to go [to get the aid]."³⁵²

Navigating flooded areas was a challenge for people with disabilities, and often led to their greater isolation. One blind man said he had not left his house for over two weeks during floods in his village in September 2024, as he was afraid of falling.³⁵³ Jai Ram Bheel, 44, who has limited mobility in one leg due to polio in childhood, said of the 2022 floods:

"During the floods I was unable to move from this village myself, my family members took me on their shoulders two kilometres to the road. There we lived in makeshift tents... When I am at home it is easy for me to move about. But there we were not provided with any aid, food. There was nowhere for me to go to the toilet. I was just sitting in my tent."³⁵⁴ Jai Ram said that because he could not move far away

351 Remote interview with Tanveer Ahmed, Executive Director of HANDS, 5 December 2024.

352 Interview with Moomal Mallah and Ahmed Khan, 20 April 2024, Dadu district, Sindh, Pakistan.

353 Interview with Mohammed Ibrahim, 30 September 2024, Syed Pur, Sindh, Pakistan.

354 Interview with Jai Ram Bheel, 17 April 2024, Shadi Large, Sindh, Pakistan.

from the encampment like other people to use the toilet, he typically waited until nightfall to ensure his privacy.

Article 11 of the Convention on the Rights of Persons with Disabilities (CRPD), which Pakistan has ratified, calls on States to “ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters.”³⁵⁵ The UN Inter-Agency Standing Committee (IASC) Guidelines on Inclusion of Persons with Disabilities say that governments and humanitarian actors should remove barriers to people with disabilities, including both environmental barriers (inaccessible camp set-ups and communication) and attitudinal barriers (including stigma or stereotypes against people with disabilities).³⁵⁶

Pakistan has passed several laws to protect the rights of people with disabilities at the regional level, including the ICT (Islamabad Capital Territory) Rights of Persons with Disabilities Act of 2020,³⁵⁷ the Punjab Empowerment of Persons with Disabilities Act of 2022,³⁵⁸ and the Sindh Empowerment of Persons with Disabilities Act of 2018.³⁵⁹ The second two of these bills explicitly call on the provincial governments to include people with disabilities in disaster and emergency responses on a priority basis.

Gaps in humanitarian aid delivery can be seen in the acute malnutrition that many people in Pakistan experienced in the immediate wake of the floods in both 2022 and 2024. An analysis from the Integrated Food Security Phase Classification (IPC), found that six million people experienced acute food insecurity between July and August 2022.³⁶⁰ High levels of hunger persisted well into 2023.³⁶¹ According to the IPC, “The vast majority of these districts were hit by severe monsoon rains and flooding, particularly Sindh and Balochistan, significantly impacting food production, consumption, livelihoods, and limited employment opportunities for those affected by the floods.”³⁶² Extreme weather events made worse by climate change continued to impact food security across much of rural Pakistan in 2024.³⁶³

355 UN Convention on the Rights of Persons with Disabilities (CRPD), Article 11.

356 Inter-Agency Standing Committee, *Guidelines: Inclusion of Persons with Disabilities in Humanitarian Action*, July 2019, https://interagencystandingcommittee.org/sites/default/files/migrated/2020-11/IASC%20Guidelines%20on%20the%20Inclusion%20of%20Persons%20with%20Disabilities%20in%20Humanitarian%20Action%2C%202019_0.pdf, p. 76.

357 Pakistan, ICT Rights of Persons with Disability Act, 2020, <https://www.mohr.gov.pk/Detail/N2UxN2E1NmItYjU3OS00MzBjLWFiZjYtYTlxMzUzMGZDY5>

358 Pakistan, Punjab Empowerment of Persons with Disabilities Act 2022, 2022, <https://swd.punjab.gov.pk/system/files/The%20Punjab%20Empowerment%20of%20Persons%20with%20Disabilities%20Act%202022.pdf>

359 Pakistan, Sindh Empowerment of ‘Persons with Disabilities’, 2018, <https://itacec.org/document/2018/Sindh-Empowerment-of-PWD-Act-XLVIII-of-2018-june-11-2018.pdf>

360 Integrated Food Security Phase Classification, *Pakistan: Food Security Snapshot Balochistan, Khyber Pakhtunkhwa & Sindh / July - December 2022*, 30 December 2022, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Pakistan_Acute_Food_Insecurity_2022JulDec_Snapshot%20.pdf

361 Integrated Food Security Phase Classification, *IPC Acute Food Insecurity Analysis April 2023 – January 2024, 19 October 2023*, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Pakistan_Acute_Food_Insecurity_April_2023_January_2024_Report.pdf

362 Integrated Food Security Phase Classification, *IPC Acute Food Insecurity Analysis April 2023 – January 2024* (previously cited).

363 Integrated Food Security Phase Classification, *IPC Acute Food Insecurity Analysis March – November 2024, 23 May October 2024*, https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Pakistan_Acute_Food_Insecurity_Mar_Nov2024_Report.pdf



☹️↑ Individuals leaving their villages and carry their belongings through flooded areas to reach higher grounds in southern Punjab, 25 August 2022. © Getty / Shahid Saeed Mirza

☹️↓ Flood-affected individuals receiving food aid in southern Punjab on 03 September 2022. © Getty / Arif Ali



Children are at particularly high risk from undernutrition, which can make them more vulnerable to death and disease.³⁶⁴ Older people also appear to be significantly impacted, as studies show that older people are more likely to experience reduced cognitive or physical functioning as a result of malnutrition, and less likely to recover body mass afterwards.³⁶⁵ In a report from January 2023, UN OCHA said that UN agencies were struggling to meet nutrition needs in flood-affected areas of Pakistan, and sought to find a way to reach the 1.6 million children estimated to have severe acute malnutrition, as well as the additional nearly 2 million children in need of additional nutrition.³⁶⁶ According to UN OCHA, “funding remains a major gap in the provision and expansion of services in flood affected areas, not only with the needs indicated for floods but existing caseloads prior to emergency as well.”³⁶⁷ Unfortunately, UN OCHA and other humanitarian agencies did not assess the distinct impact of malnutrition on older people or other affected groups.

The longer-term impacts that extreme weather events have on livelihood security will be explored in Chapter 5 “Economic Collapse”.

4.2 HEATWAVES

Pakistan’s authorities appear to have published more advisories on extreme heat in recent years. The NDMA issued a heat advisory for the summer of 2024, in which it highlighted the possibility of more medical emergencies and high energy demand.³⁶⁸ The advisory also emphasized the risks of extreme heat to older people, children, and people with chronic illnesses.

However, these advisories have not been consistently translated into greater action by provincial and local governments. For example, 13 different types of disasters are listed on the Punjab Disaster Management Authority’s website, but extreme heat is not one of them. The agency has plans for extreme monsoon rains and extreme snowfall, but no heatwave management plan, which Amnesty International has previously documented.³⁶⁹ At the local level, multi-hazard risk plans often do not address heatwaves even in highly heat-affected areas. For example, despite prolonged heatwaves in Rahim Yar Khan in 2022, the multi-hazard risk plan for the district does not mention heatwaves at all.³⁷⁰

364 WHO, “Malnutrition”, 01 March 2024, <https://www.who.int/news-room/fact-sheets/detail/malnutrition>

365 Kristina Norman and others, “Malnutrition in Older Adults—Recent Advances and Remaining Challenges”, 12 August 2021, *Nutrients*, Volume 13, Issue 8, <https://doi.org/10.3390/nu13082764>, p. 2.

366 UN OCHA, *Pakistan: 2022 Monsoon Floods - Situation Report No. 13*, 06 January 2023, <https://www.unocha.org/publications/report/pakistan/pakistan-2022-monsoon-floods-situation-report-no-13-6-january-2023>

367 UN OCHA, *Pakistan: 2022 Monsoon Floods - Situation Report No. 13* (previously cited).

368 Pakistan, National Disaster Management Authority (NDMA), “Heatwave Guidelines 2024”, <https://www.ndma.gov.pk/storage/guidelines/April2024/ZpOylx4ksogDptXteEYS.pdf>, p. 6.

369 Amnesty International, *A Burning Emergency: Extreme Heat and the Right to Health in Pakistan* (previously cited), Ch. 5.

370 Dawn, “Sizzling Punjab dreads imminent heatwave”, 18 May 2024, <https://www.dawn.com/news/1834203>;

Pakistan, National Disaster Management Authority (NDMA), “Multi Hazard Vulnerability & Risk Assessment: District Rahim Yar Khan”, <https://www.ndma.gov.pk/storage/publications/July2024/C9Q6sdl6PmqbGMeGUdmS.pdf>

In some places, there has been greater awareness of the dangers of extreme heat and greater action at the provincial level. In Sindh province, some humanitarian organizations and medical professionals said that there had been notable improvements in awareness around extreme heat since the 2015 Karachi heatwave, which killed at least 1,300 people.³⁷¹ Tanveer Ahmed, Executive Director of the charity organization HANDS, said: “We realized for the first time in 2015 that heatwaves can kill so many people... Now there is more prevention and participation, there are messages coming out in the media, both electronic and print, and we established several [cooling] camps in certain districts.”³⁷²

During the heatwave of 2024, the Sindh PDMA published regular advisories and situation reports about extreme heat. Together with humanitarian organizations, the PDMA established more than 1,800 “heat stabilization camps” across the province, including 352 in Karachi.³⁷³ Information about the camps was published on the PDMA website, social media, and by some media outlets. However, as noted above, most people Amnesty International interviewed in Karachi said they had not seen or heard about camps,³⁷⁴ and humanitarian actors who themselves had set up heat camps said there were not enough of them to meet real demand.³⁷⁵

Government officials said that there was no choice but to allow people to work in the heat. Qurat ul-Ain Memon, the Deputy Commissioner of Muzaffargarh, said:

“For excessive heatwaves of course we set up camps at different locations where majority of labourers work under [the] open sun. We provide drinking water for them, issue instructions from different health facilities... We also guide them to limit their labour to the non-sunny hours, but you see that’s not possible, because labourers have to work in the heat.”³⁷⁶

As a party to the Paris Agreement, Pakistan is required to submit and regularly update its Nationally Determined Contribution (NDC), which includes proposed measures for adapting to climate change. New NDCs were due to have been submitted by the end of February 2025 at the latest, but Pakistan has not yet done so. Pakistan’s earlier 2021 NDC mentions responses to extreme heat, such as climate resilient agriculture, and refers to plans to develop, by 2026, a Pakistan Cooling Action Plan, “which will identify the key cooling needs and prioritize actions for addressing current and future cooling demands with the minimum possible impact on the environment”.³⁷⁷ It is unclear whether and when the plan will be drafted. Pakistan’s National Climate Change Policy, updated in 2021, also recognizes the need for actions in

371 BBC, “Why did so many die in Karachi’s heatwave?”, 02 July 2015, <https://www.bbc.com/news/world-asia-33358705>

372 Remote interview with Tanveer Ahmed, Executive Director of HANDS, 5 December 2024.

373 Pakistan, PDMA Sindh, “Situation Report for heatwave 2024” (previously cited).

374 Interviews, September 2024 – January 2025.

375 Remote interview with Tanveer Ahmed, Executive Director of HANDS, 5 December 2024.

376 Interview with Qurat ul-Ain Memon, Deputy Commissioner of Muzaffargarh, 8 January 2025, Muzaffargarh, Punjab, Pakistan.

377 Pakistan, *Updated Nationally Determined Contributions 2021*, <https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf>, p. 44.

response to increasing heat and the resulting impacts on water and agricultural productivity, though it does not prescribe any specific and urgent measures to protect people from extreme heat and heatwaves.³⁷⁸

One diplomatic official who worked in climate policy in Pakistan said that government actors had become more proactive in responding to floods, as this was a visible, discrete event. On heatwaves and air quality, two of the most impactful but least visible types of environmental disaster, the response was much less robust, and while the government would set up camps, it was up to people to reach them or not:

“We have a decent infrastructure and policy ecosystem for floods, but... for heat or air quality or [other] environmental crises, there is no capacity at the local level and sometimes even at the provincial level to do a crisis response. There is not a single provincial government or even a district government that has any plan to move 5,000 people who are affected by very bad air quality or a super heatwave to any new location to take care of them. It’s up to the people how they survive.”³⁷⁹

4.3 STRUCTURAL GAPS

In Pakistan, several ministries and authorities are responsible for climate change policy and disaster response.³⁸⁰ At the federal level, the Ministry of Climate Change and Environmental Coordination is the focal point for all multilateral climate agreements, including the UN Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, both of which Pakistan is party to.³⁸¹ The ministry is responsible for the creation of the country’s NAP, which countries develop to outline how they plan to reduce their risks to climate change, as well as for mainstreaming climate policy across all other ministries and levels of government.³⁸²

During a disaster, the NDMA, together with the Ministry of Climate Change and the Ministry of Interior, is responsible for coordinating all stakeholders to respond to the emergency.³⁸³ Provincial level authorities’ responsibilities, coordinated by PDMA, include creating the provincial disaster management policy, assessing the vulnerability of the province to different disasters while providing prevention or mitigation measures, ensuring that communication systems are in place and disaster management drills are carried out, and coordinating the response in the event of a disaster.³⁸⁴

378 Pakistan, MoCC, *National Climate Change Policy*, <https://mocc.gov.pk/SiteImage/Policy/NCCP%20Report.pdf>

379 Remote interview, 22 August 2024.

380 Pakistan, National Disaster Management Act, 2010, <http://www.ndma.gov.pk/storage/NDMA-Act/NDMA-Act.pdf>

381 UN Framework Convention on Climate Change (UNFCCC), adopted 1992, entered in to force 21 March 1994; Paris Agreement, adopted 12 December 2015, entered into force 4 November 2016.

382 Pakistan, MoCC, *National Adaptation Plan: Pakistan 2023* (previously cited), pp. 26-27.

383 Pakistan, National Disaster Management Act, 2010 (previously cited).

384 Pakistan, National Disaster Management Authority (NDMA), *National Disaster Response Plan 2024/25*, July 2024, <https://www.ndma.gov.pk/storage/plans/July2024/Xp0V1C3aKjddZwDfRYS.pdf>

The PDMA does not carry out evacuations or directly provide humanitarian assistance during a disaster, as this is the responsibility of authorities at the district level, who are tasked with providing food, drinking water and medical supplies, organizing evacuations, and setting up relief camps.³⁸⁵ However, the District Disaster Management Authority (DDMA), while it exists on paper, has no permanent staff or dedicated resources. Government officials openly discussed how this set back their ability to respond to humanitarian emergencies. Yasir Bhatti, the Deputy Commissioner of Badin district in Sindh, said:

“DDMA as a separate entity does not exist... I use my existing resources [to respond to emergencies]. There is no budget and no human resources... We always look to the PDMA, because they have the resources and whenever there is such a situation, they provide us with required [equipment].”³⁸⁶

According to Bhatti, while his office had a stock supply of smaller equipment, such as tents, larger equipment – including dewatering pumps, generators and boats for evacuations – came from the nearest PDMA warehouse, 120 kilometres away in Jamshoro.

The lack of trained staff proved problematic for the district authorities. In Muzaffargarh in Punjab, Amnesty International met with a PDMA coordinator who had established a District Emergency Operations Centre to field emergency calls and organize the local response. While this was a much more advanced operation than many districts had, the PDMA official said it was still difficult to maintain the call centre without permanent staff:

“Right now we have people from education, health or rescue departments [who do three-month rotations]. They have their own job responsibilities, they are not trained for disaster management... We lose much of our energy [on training]. If we had dedicated staff our response would be quick and accurate. We would save more lives and more properties. Right now, I’m a one-man army.”³⁸⁷

NGOs working during humanitarian emergencies said the lack of regularly updated information and coordination at the local level hampered relief efforts. Javed Soz, Director of the Sindh Housing Community Foundation, said: “There is no humanitarian coordinator at the district level. We need risk mapping, and we need it to be updated regularly. Most NGOs are just given budgets [for how much aid is required].”³⁸⁸

In a report, the World Bank noted significant improvements in Pakistan’s preparedness for natural disasters, with robust legislation and an institutional framework for disaster response. However, it pointed out that Pakistan “faces implementation, coordination, monitoring, and financing challenges in operationalizing its disaster risk management framework”. It said:

385 Pakistan, National Disaster Management Authority (NDMA), *National Disaster Response Plan 2024/25* (previously cited), p. 46.

386 Interview with Yasir Bhatti, Deputy Commissioner of Badin, 14 January 2025, Badin, Sindh, Pakistan.

387 Interview with Irfan Sial, District Disaster Management Coordinator (PDMA), 8 January 2025, Muzaffargarh, Punjab, Pakistan.

388 Interview with Javed Soz, director of the Sindh Housing Community Foundation, 18 April 2024, Hyderabad, Sindh, Pakistan.

“On-ground implementation is often hampered by weak institutional capacity, lack of clarity over mandates, inadequate coordination between national and subnational government institutions, and gaps in dedicated financing. Crisis response is consequently often a mixture of coordinated and ad-hoc measures, relying on external stakeholders for funding and implementation.”³⁸⁹

External donors have made efforts to shore up disaster response staffing at the local level, but as the above makes clear, this may not be enough to ensure long-term successes.³⁹⁰

4.4 SECURITY & RESTRICTIONS ON AID

International and national NGOs play a critical role in delivering aid or otherwise helping those who have been affected by climate-related disasters. However, NGO and INGO workers said there were significant challenges to operating in Pakistan.

In recent years, there has been a narrowing of the civic space in Pakistan. In 2015, the government began requiring INGOs to register with the Ministry of Interior, resulting in the Ministry denying the registration of a number of well-known international organizations.³⁹¹ In 2018, the Pakistan government expelled 18 international aid organizations after accusing them of spreading misinformation.³⁹² Starting in 2013, local NGOs receiving foreign donations were required to register with the Economic Affairs Division of the Ministry of Finance; this policy was replaced in 2022 with another policy that had very similar registration requirements.³⁹³ While these requirements were struck down in a ruling by the Lahore High Court in 2024,³⁹⁴ such vague and broad provisions generally undermined the ability of civil society groups to work independently without fear of being shut down, giving the government broad discretion to disrupt their work.³⁹⁵

Almost all organizations described the challenges of obtaining so-called “No Objection Certificates”, or NOCs, when working in Pakistan. An NOC is essentially approval from the government to operate a humanitarian or other NGO activity in a given area. While Amnesty International did not find definitive

389 World Bank, *Pakistan Crisis Preparedness Gap Analysis*, 2024, <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099061324092013850/p179991181eef0e718dd51853ac302c403>

390 World Bank, *Independent Evaluation Group (IEG): Disaster Resilience Improvement Project (P154036)*, <https://documents1.worldbank.org/curated/en/099900009302210599/pdf/P154036049e8aa0340b0810ae9f3d19a294.pdf>

391 Pakistan, Policy for regulation of International Non-governmental Organizations (INGOs) in Pakistan No.6/34/2015-PE-III, 2015, <https://www.ead.gov.pk/SiteImage/Misc/files/NGO's%20Policy%202015.pdf>; see also: Express Tribune, “Nine INGOs refused registration”, 06 November 2015, <https://tribune.com.pk/story/986093/nine-ingos-refused-registration>

392 NPR, “Pakistan Ousts 18 Aid Agencies. Human Rights Minister Tweets ‘They Must Leave’”, 07 December 2018, <https://www.npr.org/sections/goatsandsoda/2018/12/07/674624977/pakistan-ousts-18-aid-agencies-human-rights-minister-tweets-they-must-leave>

393 Pakistan, Policy for regulation of Organizations receiving foreign contributions: No.1(5)INGO/05, 2013, https://www.ead.gov.pk/SiteImage/Misc/files/iii_%20NGOs%20Policy%202013.pdf

394 Dawn, “LHC sets aside govt policy to regulate NGOs’ funding”, 08 September 2024, <https://www.dawn.com/news/1857644>

395 Amnesty International, “Pakistan: Economic, social and cultural rights under attack”, 12 June 2017, <https://www.amnesty.org/en/latest/news/2017/06/pakistan-economic-social-and-cultural-rights-under-attack-2>

information online about exactly when and where NOCs were required, most NGO staff described these as being de facto obligatory for operations anywhere in Pakistan. For example, the provincial government of Khyber Pakhtunkhwa (KP) lists 19 documents required by NGOs in order to conduct projects in the region.³⁹⁶ One NGO staffer, who had worked in KP for over 20 years, said:

“They will send [your documents] to 12 different agencies including the security agencies. After a satisfactory report from all these agencies you will get the NOC. For a six-month project, the minimum process is six months. Four of my projects have been cancelled due to [delayed] NOCs.”³⁹⁷

These application procedures placed an undue burden on NGOs in all parts of Pakistan, but people working in the two western provinces bordering Afghanistan, KP and Balochistan, described particular challenges. In late 2022, Tehreek-e-Taliban Pakistan (TTP), also known as the Pakistani Taliban, declared an end to its ceasefire with the government.³⁹⁸ Since then, hundreds of people have died in militant attacks, the vast majority of them in KP and Balochistan.³⁹⁹ While this insecurity poses genuine challenges to humanitarian organizations operating in the area, humanitarian workers told Amnesty International that it was often the government itself that created the most significant barriers to NGO operations.

The situation was particularly difficult for international organizations and staff. One international staffer at an INGO delivering services in different parts of Pakistan said: “The biggest problem is access, in Balochistan you can imagine how the intelligence and the military controls access for international organizations... For international staff it’s a nightmare.”⁴⁰⁰

These disruptions to the work of international and local NGOs hindered disaster responses, including during the floods of 2022 and 2024. According to a research report by the Humanitarian Rapid Research Initiative, a UK government-funded project, “The shrunken NGO operational space limited the potential for a rapid and widespread response [during the 2022 floods]... Once operational capacity is scaled down, scaling it back up again takes time, and that meant that the international response to the floods was slow out of the gate.”⁴⁰¹ According to ACAPS, which analyses humanitarian access across different countries, while some restrictions on delivering aid were lifted for local NGOs during the 2022 floods, “national and international NGOs faced significant restrictions on their ability to operate”.⁴⁰²

396 Pakistan, Khyber Pakhtunkhwa Planning & Development Department, “Procedure for Application of NOC” (undated), https://kp.gov.pk/page/license_noc_s.

397 Remote interview with an NGO staffer in Khyber Pakhtunkhwa, 14 November 2025.

398 Al Jazeera, “Pakistan Taliban ends ceasefire with gov’t, threatens new attacks: The armed group calls off a truce agreed with the government in June and orders fighters to ‘carry out attacks in the entire country’.”, 28 November 2022, <https://www.aljazeera.com/news/2022/11/28/pakistan-taliban-ends-ceasefire-with-govt-threatens-new-attacks>

399 Voice of America News, “Report: Terrorist Attacks Kill Nearly 1,000 Pakistanis in 2023”, 31 December 2023, <https://www.voanews.com/a/report-terrorist-attacks-kill-nearly-1-000-pakistanis-in-2023-7419344.html>

400 Remote interview with an INGO worker working on Pakistan, 2 December 2024.

401 Humanitarian Outcomes, *Floods in Pakistan: Rethinking the humanitarian role*, November 2022, https://humanitarianoutcomes.org/sites/default/files/publications/pakistan_floods_1122.pdf, p.8.

402 ACAPS, *Humanitarian Access Overview* (previously cited), p.28.

While the scale of the 2022 floods was significant enough for the government to relax some restrictions, the same has not been the case during the smaller-scale 2024 floods, as NGOs said they continued to face bureaucratic hurdles that hindered rapid reactions. Tanveer Ahmed, Executive Director of HANDS, described how often his organization could not operate freely if the PDMA had not formally declared an emergency. During floods in parts of Sindh in 2024, for example, the PDMA did not declare an emergency, and local governments were reluctant to let HANDS operate in flood-affected areas or to issue NOCs:

“If there is no [PDMA] announcement, they don’t allow [you to operate]. Especially in 2024, they didn’t allow us [to operate] and most of the time we have to use our own influence or NOCs [left over from] 2022 to do this job. Everywhere the NOC is required, every district.”⁴⁰³

One person involved in the flood response in KP in April 2024 said that an international NGO he had worked for was forced to cancel a flood-related project:

“The project coordinator said the government is not willing to give us an NOC, they had the funds but due to the NOC they were unable to work... They said there were a lot of difficulties [working in KP], and that the project was taking too much time. It was easier for them to work in other [provinces].”⁴⁰⁴

Restricting the access of NGOs or other groups, particularly during emergencies when state resources are stretched thin, risks depriving people of life-saving assistance, further exacerbating preexisting inequalities between regions. Balochistan for example has the highest incidence of poverty,⁴⁰⁵ the lowest rates of primary education completion,⁴⁰⁶ and some of the poorest health outcomes in the country.⁴⁰⁷ As noted in the Methodology, Amnesty International was unable to visit Balochistan because of the risks posed by violence between separatist fighters and police. Humanitarian actors, including those working for national organizations, expressed frustration that Balochistan was often not prioritized due to significant security and logistical restrictions.⁴⁰⁸

403 Remote interview with Tanveer Ahmed, Executive Director of HANDS, 5 December 2024.

404 Remote interview with an NGO worker from Khyber Pakhtunkhwa, Pakistan, 31 October 2024.

405 The News, “Geneva conference: Donors pledge over \$10.5bn for Pakistan: Pakistan has secured total pledges of \$10.57 billion from multilateral and bilateral creditors for reconstruction in flood-affected areas in Pakistan during the International Conference on Climate Resistant Pakistan held in Geneva”, 10 January 2023, <https://www.thenews.com.pk/print/1028927-geneva-conference-donors-pledge-over-105bn-for-pakistan>; Pakistan Institute of Development Economics (PIDE), *Multidimensional Poverty in Pakistan*, 2024, <https://www.undp.org/sites/g/files/zskgke326/files/migration/pk/MPI-4pager.pdf>

406 Pakistan, National Institute of Population Studies, *Demographic and Health Survey: 2017-18*, January 2019, <https://dhsprogram.com/pubs/pdf/FR354/FR354.pdf>, p. 30.

407 Pakistan, National Institute of Population Studies, *Demographic and Health Survey: 2017-18* (previously cited), p. 182.

408 Remote interview with a person working for a humanitarian organization in Balochistan, 10 December 2024.

4.5 WEAK INTERNATIONAL RESPONSE

A disaster the scale of the 2022 floods would likely not have happened were it not for rising global temperatures.⁴⁰⁹ Despite the link to global climate change, the international response to the floods was extremely slow at the start. An initial UN appeal in August 2022 called for just US\$160 million; that was revised upwards to US\$816 million in October 2022.⁴¹⁰

In many cases, local activists and volunteers picked up the slack. Maryam Jamali, a high school student at the time, described how she used platforms like Twitter (now X) and Go Fund Me to raise awareness about the dire situation in her village of 4,000 people in Balochistan. Having experienced the floods of 2010, she thought the humanitarian response would be as robust in 2022:

“But this time there were no NGOs, there was no response from the government, the PDMA, the NDMA, nobody... With time as the crisis unfolded, I realized nobody was coming to help us. What I thought would be temporary relief was permanent relief... I thought, let me try to provide a bit of support to my village, and then people will come and help.”⁴¹¹

What began as an effort to help people in her village quickly expanded to other districts, not only in Balochistan but in Sindh as well. The organization founded as a result of her efforts, Madat Pakistan, is now working on long-term flood rehabilitation in several districts.

As time passed, there appeared to be greater recognition internationally of the severe and long-lasting impact of the 2022 floods. In January 2023, international donors pledged over US\$10.5 billion towards Pakistan’s flood response, though this was still well short of Pakistan’s own assessment of the needs, which was US\$16.3 billion.⁴¹² The biggest contributions came from the Islamic Development Bank Group (US\$4.2 billion), the World Bank (US\$2.7 billion), the Asian Development Bank (US\$1.5 billion), the Asian Infrastructure Investment Bank (US\$1 billion), and Saudi Arabia (US\$1 billion).⁴¹³ However, the vast majority of this spending was not in the form of unconditional aid; Pakistan’s Finance Minister Ishaq Dar told news outlets that 90% of the funds were loans.⁴¹⁴ And much of it was not new funding, but loans that

409 Friederike E L Otto and others, “Climate change increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan”, 17 March 2023, Environmental Research: Climate, Volume 2, Issue 2, <https://iopscience.iop.org/article/10.1088/2752-5295/acbfd5/meta#fnref-erclacbfd5bib75>

410 UN OCHA, *Pakistan 2022 Floods Response Plan: 01 Sep 2022 - 28 Feb 2023*, 30 August 2022, <https://pakistan.un.org/en/197499-2022-pakistan-floods-response-plan-frp>; UN OCHA, *Revised Pakistan 2022 Floods Response Plan Final Report*, 15 December 2023, <https://www.unocha.org/publications/report/pakistan/revised-pakistan-2022-floods-response-plan-final-report-issued-15-dec-2023>

411 Remote interview with Maryam Jamali, 13 December 2024.

412 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment*, October 2022 (previously cited).

413 Brookings, “Responding to Pakistan floods”, 10 February 2023, <https://www.brookings.edu/articles/pakistan-floods>

414 Dawn, “Almost 90pc of Geneva pledges are project loans, Dar reveals”, 11 January 2023, <https://www.dawn.com/news/1731101>

were already pledged by international financial institutions and would be repurposed or pushed forward to meet the flood-related needs.⁴¹⁵

At COP29, which met in November 2024 in Azerbaijan, many lower-income countries called for at least US\$1.3 trillion in annual public grant-equivalent financing to help them adapt to climate change and recover from the loss and damage inflicted by it.⁴¹⁶ In the deal reached, high-income historical emitters agreed to mobilize a fraction of that amount – US\$300 billion – annually by 2035, which can be in the form of loans. Staying on this course of under-funding for adaptation and loss and damage risks trapping lower-income countries in a cycle of indebtedness at a time when they are seeking to take urgent climate action.⁴¹⁷ Without greater adaptation assistance, countries like Pakistan may lack sufficient resources to take important action such as enhancing water management systems or investing more in cooling centres. Without adequate finance to address existing and future loss and damage, climate-impacted countries will struggle to help their populations recover from climate-related disasters.

UN Secretary-General Antonio Guterres, marking the one-year anniversary of the 2022 floods, said:

“Billions were pledged – but the vast majority was in loans. And Pakistan is still waiting for much of the funding, and delays are undermining people’s efforts to rebuild their lives... Pakistan needs and deserves massive support from the international community... [It] is the litmus test for climate justice.”⁴¹⁸

415 Brookings, “Responding to Pakistan floods” (previously cited).

416 Amnesty International Canada, “COP29: Climate finance target is a blueprint for deepening inequalities, violating human rights”, 27 November 2024, <https://amnesty.ca/human-rights-news/cop29-climate-finance-target-a-blueprint-for-violating-human-rights/>. For more on “loss and damage”, please see the textbox on p. 99 below.

417 Amnesty International Canada, “COP29: Climate finance target is a blueprint for deepening inequalities, violating human rights” (previously cited).

418 United Nations Secretary-General, “Secretary-General’s remarks at the Informal Briefing to the General Assembly one year on from the 2022 Pakistan Floods: Resolution 77/1 on Progress in Relief, Rehabilitation, Reconstruction and Prevention [as delivered]” (previously cited).

5 ECONOMIC COLLAPSE

The 2022 floods took a devastating toll on the livelihoods of those affected, wiping out millions of acres of crops and destroying livestock, housing and infrastructure. People described selling their assets, often at deflated prices, and taking on credit so that they could afford food. This left them with significantly diminished capacity to cope with disasters in the future, such as when flooding struck just two years later in 2024.

Pakistan spends about 0.5% of its GDP on social assistance.⁴¹⁹ Existing social support schemes lack the flexibility to effectively help those impacted by climate disasters.⁴²⁰ During the 2022 floods, the government reportedly distributed PKR 25,000 (US\$109) in cash assistance to over two million flood-affected households,⁴²¹ and announced it would do so again to families affected by flooding in 2024.⁴²² However, many people interviewed by Amnesty International in flood-affected areas said they had not received such support.

Many people also lost their homes during the 2022 floods. Together with backing from international donors, the Sindh government pledged to rebuild 2.1 million houses.⁴²³ However, Amnesty International and other human rights organizations have found that many people were passed over for housing compensation, or struggled to navigate the application process.

The 2022 floods also left two million children without access to education for months, as schools were destroyed and roads blocked.⁴²⁴ In 2024, the education of at least 230,000 children in Sindh province

419 World Bank, Public Spending on Social Assistance Programs (% of GDP), <https://www.worldbank.org/en/data/datatopics/aspire/country/pakistan> (accessed 15 January 2025).

420 ILO, *A social protection profile of Pakistan* (previously cited), p. 8.

421 UN OCHA, *Revised Pakistan 2022 Floods Response Plan: 01 Sep 2022 – 31 May 2023*, 4 October 2022, <https://www.unocha.org/publications/report/pakistan/revised-pakistan-2022-floods-response-plan-01-sep-2022-31-may-2023-04-oct-2022>, p. 10.

422 Pakistan, Benazir Income Support Programme (BISP), “BISP Ehsaas Flood Relief Cash Program 2024 New Registration”, <https://bisp.com.pk/bisp-ehsaas-flood-relief-cash-program-new-registration> (accessed 15 January 2025).

423 Pakistan, Sindh Floods Emergency Housing Reconstruction Project, *Environmental & Social Management Framework*, March 2024, <https://www.adb.org/sites/default/files/project-documents/57323/57323-001-esms-en.pdf>, p. 24.

424 UNICEF, “Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods – UNICEF”, 3 November 2022, <https://www.unicef.org/rosa/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floods>

was disrupted again due to flooding.⁴²⁵ Even temporary school closures can have long-lasting impacts, as children who drop out of school may be unlikely to return. The World Bank found that the number of children out of school in Pakistan increased by five million after Covid-19 and the 2022 floods.⁴²⁶

Heatwaves do not destroy housing or schools, but in order for people to stay safe, they have to be able to stay indoors, negotiate different working hours, or take time off. In Pakistan, where over 70% of people work in the informal sector, this is simply not the reality, as many daily wage earners cannot afford not to work.⁴²⁷ People are therefore often forced to make a choice between working in dangerous, sometimes life-threatening conditions and not having enough to feed their families. This is particularly true for older people, given their heightened vulnerability to extreme heat, and the lack of universal old-age pensions in Pakistan. Extreme heat disrupts not just work, but also education: in Punjab for example, more than half of the schoolchildren in the province (26 million students) were unable to attend school for a week in May 2024 due to extreme heat.⁴²⁸

As a party to the ICESCR, Pakistan must uphold the right to an adequate standard of living, the right to social security, and the right to education,⁴²⁹ particularly in the face of the growing number of climate disasters. The Pakistan Constitution calls on the State to “secure the well-being of the people, irrespective of sex, caste, creed or race, by raising their standard of living,” and to “provide for all citizens, within the available resources of the country, facilities for work and adequate livelihood with reasonable rest and leisure.”⁴³⁰

5.1 LOSS OF LIVELIHOOD

FLOODS: DESTROYED CROPS, LIVESTOCK

In 2022, 4.4 million acres of crops were destroyed by flooding in Pakistan, with most of the damage occurring in Sindh (72%) and Balochistan (21%).⁴³¹ The worst damage was done to cotton, dates, sugarcane, and rice, which are usually harvested close to the monsoon season (from June to September). In many areas, the fact that floodwaters did not retreat for months meant that autumn or winter crops such as wheat could not be planted either, wiping out a whole year’s earnings.⁴³² Around one million farm

425 UNICEF, “Education on hold for 230,000 children in Pakistan’s flood-affected Sindh”, 11 September 2024, <https://www.unicef.org/press-releases/education-hold-230000-children-pakistans-flood-affected-sindh>

426 Amna Memon and Yoko Okura, “Strengthening Pakistan’s readiness for the next crisis”, 28 January 2024, World Bank, <https://blogs.worldbank.org/en/endpovertyinsouthasia/strengthening-pakistan-s-readiness-for-the-next-crisis>

427 ILO, *A social protection profile of Pakistan* (previously cited), p. 5.

428 Save the Children, “More Than Half of Pakistan’s School-Age Children Will be Out of School Due to Extreme Heat”, <https://www.savethechildren.org/us/about-us/media-and-news/2024-press-releases/pakistan-children-out-of-school-due-to-extreme-heat>

429 ICESCR, Articles 9, 11, & 13.

430 Pakistan Constitution, Part II: Fundamental Rights and Principles of Policy, Article 38a-b.

431 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment* (previously cited), p. 59.

432 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment* (previously cited), pp. 39, 46.

animals are estimated to have died during the floods.⁴³³ In total, losses of crops and livestock cost an estimated US\$3.7 billion.⁴³⁴ Many people told Amnesty International that they had been forced into debt, often to their landlords, to pay for the losses, or sometimes left their families and homes to seek daily wage labour in the cities.

Nawo Kolhi, 54, whose village in Badin district was totally inundated during the 2022 said:

“We lost almost 25 animals, including goats, water buffaloes and cows... Our land was under water for almost four months after we returned [from displacement] to our village. There was no land for farming, organizations came and gave us rations, we were totally dependent on them.”⁴³⁵

Those who had sufficient time to move their livestock still lost many to disease and starvation: one man said that his village owned about 250 animals before the 2022 floods, but lost 80 after the families living there were displaced.⁴³⁶ Where the flooding arrived without warning, families had no time to organize transport for their livestock, many of which drowned. One community leader in a village in Dadu district said: “We lost all of our personal belongings, all our livestock... We are situated in a low-lying area and our village was completely flooded.”⁴³⁷

In 2024, while the floods were less widespread by comparison, they nonetheless had a devastating impact on affected communities. In Sindh alone, approximately 500,000 acres of crops were destroyed.⁴³⁸ Families, many of whom had just rebuilt their livelihoods after the 2022 floods, were pushed into economic crisis yet again, forcing them to turn to debt or daily wage labour in the cities to compensate for lost income from crops.⁴³⁹

For example, Ali Hassan Sumejo, 22, lost most of his belongings when a canal near his village in Badin district burst its banks after heavy rains in August 2024. Two out of three rooms in his house were destroyed and the family was displaced to a nearby road. He said he had lost 25 kilograms (kg) of stored wheat, 8 acres of rice fields, as well as one buffalo and two goats to the floods. Usually by September he would be preparing to sow wheat for the following year. But with the land unlikely to be dry in time to do that, he was unsure whether he would be able to pay back the PKR 150,000 (US\$540) that he owed his landlord for seeds, fertilizer and other equipment:

433 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment* (previously cited), p. 17.

434 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment* (previously cited), p. 14.

435 Interview with Nawo Kohli, 17 April 2024, Shadi Large, Sindh, Pakistan.

436 Interview with Abdul Hadi Rahoo, 18 April 2024, Mohammad Khan Rahoo, Sindh, Pakistan.

437 Interview with Ali Akbar Mallah, 20 April 2024, Haji Khair Din Mallah, Sindh, Pakistan.

438 The International News, “Sindh loses crops worth Rs87bn: agriculture minister”, 3 September 2024, <https://www.thenews.com.pk/print/1226408-sindh-loses-crops-worth-rs87bn-agriculture-minister>

439 New York Times, “Battered by Floods and Trapped in Debt, Pakistani Farmers Struggle to Survive”, 1 October 2022, <https://www.nytimes.com/2022/10/01/world/asia/pakistan-flood-farmers.html>

“We are denied any financial help. Even the landlord says: ‘I’m just like you now, I’ve lost my land and my investments. So go find labour work... It’s a very difficult time, sometimes we get just one meal per day and sometimes we have no food at all.’”⁴⁴⁰

Gulu Bheel, in his late 50s, said: “I received no help from the landlord... I normally worked for him and was provided [food] rations in return. When the land flooded he openly told us: ‘Do not expect anything from me. The land is flooded, I cannot support you.’”⁴⁴¹ Gulu’s primary income after the floods came from his son, who had left the village to work in construction in Karachi, but that income was unpredictable because he did not find work every day.

Shafi Mohammed Nohani, 52, a landowner in Badin district, explained that he grows roughly 64,000 kg of rice each year, which he said was worth about PKR 5 million (US\$18,250). All of this was lost when his 12 acres of land was flooded in 2024. Nohani said: “Rice is the most profitable crop of the year. Now it is definitely a difficult time.”⁴⁴²

Many of those affected by the flooding said they had been forced to sell their assets, including personal transport and livestock, to be able to afford food or shelter.⁴⁴³ Some described receiving deflated prices for those items, which they attributed to a glut due to many people selling during the floods. Shafi, above, said:

“Everything I had was invested into the crop. We need to clear [that debt] as no one will lend to us for another crop [season]... I have sold four or five sheep, my extended family have sold almost 20 sheep. With the money I bought wheat and other stock [supplies]... The kids go to school by foot, it is about 7-8 kilometres so takes around an hour. Before the floods we used a motorbike but since the flood... we sold it.”⁴⁴⁴

HEATWAVES: DANGEROUS WORKING CONDITIONS

As noted above, the informal workforce accounts for more than 70% of Pakistan’s economy.⁴⁴⁵ Almost all of the people interviewed by Amnesty International worked in the informal economy. Most of them worked at least six, and sometimes seven, days per week. Their wages were not sufficient to sustain them taking significant time off work due to extreme heat, illness, or any other reason. In many cases, not going to work meant not being able to eat.

Hamza Baloch, 60, is a daily wage labourer at Karachi’s port. Each day, he waits for ships to unload containers of goods that he can then deliver with a hand-pushed cart to shopkeepers at the market two

440 Interview with Ali Hassan Sumejo, 28 September 2024, Ali Bux Sumejo, Sindh, Pakistan.

441 Interview with Gulu Bheel, 27 September 2024, Khair Muhammad Nohani, Sindh, Pakistan.

442 Interview with Shafi Mohammed Nohani, 27 September 2024, Khair Muhammad Nohani, Sindh, Pakistan.

443 Interview with Ameer Bux and Haiyani Samina, 18 April 2024, Mohammad Khan Rahoo, Sindh, Pakistan.

444 Interview with Shafi Mohammed Nohani, 27 September 2024, Khair Muhammad Nohani, Sindh, Pakistan.

445 ILO, *A social protection profile of Pakistan* (previously cited), p. 5.

kilometres away. He often carries more than 300 kg of goods, and makes the journey back and forth two or three times a day. While he was aware that older people could be badly affected by the heat, he had no choice but to continue working:

“Because of my age it’s not easy to do this job now. But if I don’t work I’ll have to sit hungry.”⁴⁴⁶



©↑ Hamza Baloch, 60, working outdoors in Karachi during record heat in October 2024.
© Shakil Adil / Amnesty International

For some older people, continuing to work was a necessity. Others said that while their children would support them in their older age, they continued to work because contributing to their families’ income was important to them and made them feel valued. Hawa Kashkheli, 69, who has picked cotton for a living since she was a child, was no longer able to do such physically

gruelling work, particularly in extreme heat. But her duties still included looking after her grandchildren, taking care of livestock, and all cooking and other domestic chores for her family. She said:

“I have strength and as long as I have strength I will work. If I’m not working and just sitting idly on this *charpai*, my sons and my family will not help me... Everything is [about] money.”⁴⁴⁷



©↑ A 62-year-old cotton-picker, Hawa, at the banana fields outside her home in village Matiari, Sindh.
© Khaula Jamil / Amnesty International.

446 Interview with Hamza Baloch, 16 January 2025, Karachi, Sindh, Pakistan.

447 Interview with Hawa Kashkheli, 1 October 2024, Mohammad Ibrahim Kashkheli, Sindh, Pakistan.

LOSS AND DAMAGE

“Loss and damage” refers to the human rights harms that result from climate change that cannot be prevented by action taken by states to mitigate emissions. “Loss and damage” encompasses both economic and non-economic losses and damages.

Under international human rights law, communities and individuals that have experienced human rights violations are entitled to effective remedies.⁴⁴⁸ The UN Basic Principles and Guidelines on the Right to Remedy and Reparation define substantive redress as consisting of restitution, compensation, rehabilitation, satisfaction, and guarantees of non-repetition.⁴⁴⁹

Restitution can be defined as restoring the victim to the original situation before the violation of international human rights law occurred. In the context of climate-related loss and damage, this could mean either restoring the actual situation where possible (e.g. rebuilding destroyed infrastructure in case of a disaster) or assisting victims in achieving a situation that is similar to the previous one (e.g. planned relocation in the context of slow-onset events that render an area uninhabitable). Compensation, or monetary reparation, is often used when restitution is found to be impossible.

Climate justice cannot be achieved without adequate remedy for unavoidable loss and damage. However, over the three decades since the adoption of the UNFCCC, the largest cumulative emitters have sought to evade and dilute their legal obligations under human rights law to respect the right to remedy in the context of climate harm, including under the climate convention. While the Paris Agreement established loss and damage as a third pillar of climate action,⁴⁵⁰ states with the highest cumulative emissions insisted on excluding any additional legal basis for liability in the decision adopting the agreement.⁴⁵¹ While the inclusion of this article may limit the interpretation of the loss and damage clause of the Paris Agreement, it does not limit the application of long-standing state obligations under international law, including the obligations to ensure access to effective remedy, which includes compensation.

The steps states have taken under the UNFCCC to address loss and damage thus far, including the establishment of a Fund for Responding to Loss and Damage, funded by voluntary contributions, are therefore woefully insufficient and fail to meet polluting states’ obligations to provide remedy for the human rights harms they have caused. It is crucial for states to ensure that any future steps taken under the UNFCCC address these shortcomings are based on the polluter pays principle, while

448 Amnesty International and the Center for International Environmental Law, *Climate-related human rights harm and the right to effective remedy*, 13 February 2024 (Index: IOR 40/7717/2024), <https://www.amnesty.org/en/documents/ior40/7717/2024/en/>

449 United Nations General Assembly (2005), “Resolution 60/147 - UN Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law”, <https://www.ohchr.org/sites/default/files/2021-08/N0549642.pdf>

450 Paris Agreement, Article 8.

451 The decision adopting the Paris Agreement stated that parties “[Agree] that Article 8 of the Agreement does not involve or provide a basis for any liability or compensation” (1/CP.21, §51).

considering complementary and comprehensive actions at the local, national, regional and global level to realize effective remedy for the loss and damage suffered by those affected by the climate crisis. These responses should be community-led, informed by the active, meaningful and safe participation of affected persons, and should take into account intersectionality and historical and structural discrimination.

5.2 INADEQUATE SOCIAL PROTECTION

Extreme weather events, which are exacerbated by climate change, disproportionately impact low-income households. Families living in poverty are more likely to be impacted directly by disasters, and also have the fewest resources available to tide them through any resulting economic losses.⁴⁵² Social protection programmes are essential to support people who have lost livelihoods and income including as a result of extreme weather events.⁴⁵³ However, measures such as unemployment insurance or social insurance often exclude workers in the informal sector.⁴⁵⁴ Only about 20% of Pakistan's population is covered by social assistance, compared with more than 40% in nearby Nepal or Bangladesh, for example.⁴⁵⁵

As described above, people in Pakistan described negative coping strategies in response to the financial shock of flooding or heatwaves, such as limiting food intake, selling valuable assets, and working in dangerous conditions. Pakistan has developed some financial assistance programmes in response to flooding, which are described below. However, the same cannot be said of heatwaves, for which there is no provision of income support for people who are unable to work or who suffer sickness due to extreme heat.⁴⁵⁶ The situation is particularly difficult for older people, who are not protected by universal pensions and many of whom are thus forced to work until they are no longer physically able to do so.

Pakistan spends about 0.5% of its GDP on social assistance.⁴⁵⁷ The largest social protection scheme in Pakistan is the Benazir Income Support Programme, or BISP, which gives out monthly cash payments to women living below a certain level of income.⁴⁵⁸ As of 2022, nine million families were receiving these

452 World Bank, *Adaptive Social Protection: Building Resilience to Shocks*, 2020, <https://documents1.worldbank.org/curated/en/579641590038388922/pdf/Adaptive-Social-Protection-Building-Resilience-to-Shocks.pdf>

453 World Bank, *Adaptive Social Protection* (previously cited), p. 6. This report primarily refers to "social protection," which is an umbrella term encompassing policies and programmes aimed at preventing or mitigating poverty; this includes both social insurance (contributory systems, such as for example contributory pension plans) as well as social assistance (which is non-contributory). For more information see: ILO, Social protection, <https://www.ilo.org/topics-and-sectors/social-protection>

454 ILO, *A social protection profile of Pakistan* (previously cited), p. 5.

455 World Bank, *The Evolution of Benazir Income Support Programme's Delivery Systems*, 2024, <https://documents1.worldbank.org/curated/en/099022924085074880/pdf/P17986812db6c301f1afee12f2ecbee7a73.pdf>, p. 20.

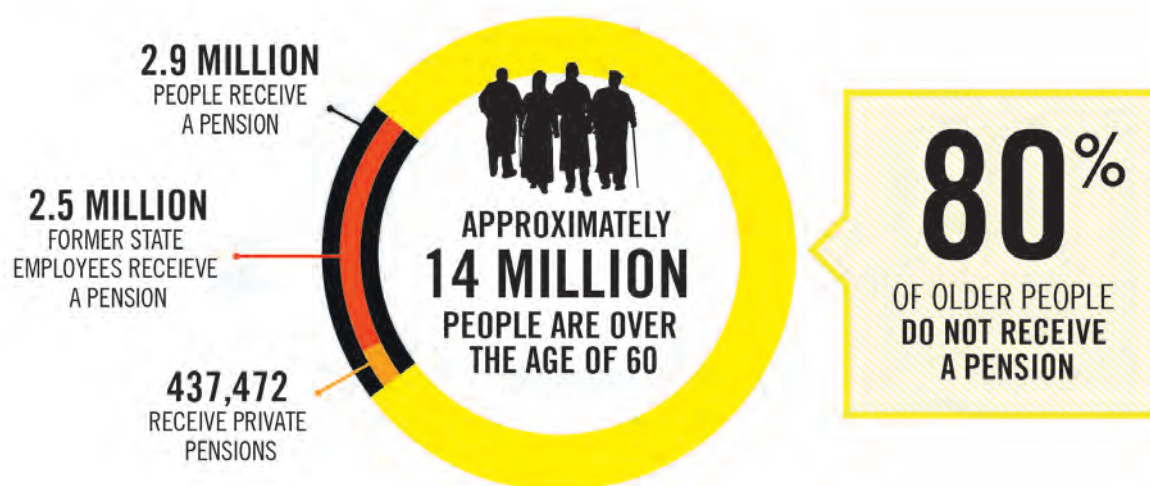
456 Amnesty International, *A burning emergency: Extreme heat and the right to health in Pakistan* (previously cited).

457 World Bank, Public Spending on Social Assistance Programs (% of GDP) (previously cited).

458 World Bank, Public Spending on Social Assistance Programs (% of GDP) (previously cited).

payments, or about 4% of the population.⁴⁵⁹ Many interviewees told Amnesty International either that they did not receive BISP payments, or that these payments were inadequate to help them meaningfully recover from a climate disaster.⁴⁶⁰

People in Pakistan who receive an old age pension



BISP payments, like other social security schemes in Pakistan, are made on the basis of a national poverty database called the National Socio-Economic Registry. During one-off emergencies, like the Covid-19 pandemic or climate disasters, this kind of database often proves less useful due to the rapidly changing economic situation, as families previously considered financially stable can quickly slip into poverty.⁴⁶¹ Several flood survivors told Amnesty International that they had previously been well-off by local standards but fell into poverty due to the flood. For example, 52-year-old farmer Shafi Mohammed Nohani owned his own land, unlike many of his neighbours, but floods in August 2024 devastated the entire community:

“The peasants that work on my land, we have joined them [in being displaced]. There is now no difference between peasants and landowners. The flood has affected everyone, Muslims and Hindus, everyone is the same.”⁴⁶²

The government of Pakistan has made some efforts to make social protection schemes more adaptive to emergencies, including climate emergencies. The government is in the process of reforming the National

⁴⁵⁹ While notable as one of the largest social protection programmes in South Asia, BISP has been criticized for several gaps, such as failing to reach more marginalized communities in places like Balochistan, and failing to increase payments in line with inflation, which has resulted in the loss of real purchasing power. Pakistan’s government has taken steps to remedy some of these issues, including by increasing payments to 10% of consumption (though this still falls short of the 15% the World Bank says would be required to meaningfully alleviate poverty). For more information see: World Bank, *The Evolution of Benazir Income Support Programme’s Delivery Systems* (previously cited). According to the ILO, BISP and other protection schemes in Pakistan have fairly high rates of exclusion, meaning that they do not capture some of the poorest people in the country. See: ILO, *A social protection profile of Pakistan* (previously cited), p. 8.

⁴⁶⁰ Interviews, April – October 2024.

⁴⁶¹ ILO, *A social protection profile of Pakistan* (previously cited), p. 8.

⁴⁶² Interview with Shafi Mohammed Nohani, 27 September 2024, Khair Muhammad Nohani, Sindh, Pakistan.

Socio-Economic Registry to make it more flexible, allowing people to update their information more frequently so as to better reflect their economic status.⁴⁶³ In addition, it launched the *Ehsaas* Emergency Cash Transfer Programme, which was created to provide emergency cash assistance, beginning with one-time payments to those affected by lockdowns during the Covid-19 pandemic.⁴⁶⁴ In the wake of the 2022 floods, the Pakistan government reportedly distributed PKR 25,000 (US\$109 at that time) in cash assistance to over two million flood-affected households.⁴⁶⁵ More recently, in 2024, the authorities announced the *Ehsaas* Programme would provide one-time cash assistance of PKR 25,000 (US\$90) to families affected by the 2024 floods.⁴⁶⁶

While these efforts to expand the social safety net in Pakistan are commendable, interviews on the ground suggest that they are not enough to meet real needs. First of all, *Ehsaas* cash transfers depend on a person being registered with NADRA, risking the exclusion of those populations more likely to be unregistered including women, older persons, and refugees. And even those who are registered with NADRA do not always receive payments: in the wake of the September 2024 floods in Sindh, for example, none of the 36 people interviewed by Amnesty International from affected areas said they had received such payments.⁴⁶⁷ Humanitarian actors confirmed that despite public announcements, they were not aware of any relief assistance being distributed in September 2024 in Sindh.⁴⁶⁸ In Khyber Pakhtunkhwa, where Amnesty International conducted remote interviews with volunteers and people affected by floods in 2024, many also said they had not received financial support. One health worker participating in the flood response as a volunteer said:

“Very few families received cash assistance from the government, and that cash assistance was so low and inadequate, you cannot build a single wall with it. Nobody has received more than PKR 20,000 [US\$72]... Very few affected families were registered [with the local government] so it wasn’t comprehensive, I do not know on what basis [the list of recipients] was prepared. Out of 30 houses in a village [that were destroyed], hardly 10 to 12 of them received cash assistance, the rest were ignored.”⁴⁶⁹

According to a report from 47 rural districts of Pakistan by the IPC, which analyses food security globally, as of May 2024, 74% of households required food or cash assistance, and 46% required support in the form of agricultural products like fertilizer, seeds or pesticides.⁴⁷⁰ According to the IPC, NGOs and

463 World Bank, *The Evolution of Benazir Income Support Programme’s Delivery Systems* (previously cited): “To identify and enroll eligible families, BISP relies heavily on the NSER. After remaining static for five years, the NSER started its update in 2016 but due to multiple delays, was only able to complete it in 2021. BISP has established 647 facilitation centers across Pakistan where people can register and update their information in NSER,” p. 20.

464 ILO, *A social protection profile of Pakistan* (previously cited), p. 34.

465 OCHA, *Revised Pakistan 2022 Floods Response Plan: 01 Sep 2022 – 31 May 2023* (previously cited), p. 10.

466 Pakistan, BISP, “BISP Ehsaas Flood Relief Cash Program 2024 New Registration” (previously cited).

467 Amnesty International interviews, September-December 2024.

468 Remote interview with Tanveer Ahmed, Executive Director of HANDS, 5 December 2024.

469 Remote interview with a volunteer from Charsadda, Khyber Pakhtunkhwa province, 31 October 2024.

470 IPC, *IPC Acute Food Insecurity Analysis March – November 2024* (previously cited), p. 8.

UN organizations were providing support in these districts, but it was insufficient: less than 25% of the population in these areas had received cash or food assistance of any kind.⁴⁷¹

Existing cash assistance programmes also do not consider climate disasters like extreme heat. As noted elsewhere in this report, much of the public health advice on avoiding exposure to heat depends on whether people can afford to stay indoors or negotiate different working hours. In Pakistan, there is no provision for income support for people who are unable to work normal hours or who suffer sickness due to extreme heat.



©↑ An older man, 65, working outdoors in Karachi during record heat in October. © Shakil Adil / Amnesty International

Such public health advice also presupposes that people can afford adequate water, healthcare and cooling mechanisms, which was often not the case.⁴⁷² For example, 70-year-old Parveen Bibi, who is unable to work due to limited mobility and diabetes, struggled to afford her electricity bill on the PKR 15,000 (US\$54) monthly pension she received from her husband's employer. In September 2024, her electricity bill was PKR 6,500. Even then, the electricity was off for many hours a day due to load-shedding. She said:

“They can cut [the electricity] any time. And yet we pay heavy bills. Rich people have alternative power systems... But the poor, where should we go?”⁴⁷³

471 IPC, *IPC Acute Food Insecurity Analysis March – November 2024* (previously cited), p. 10.

472 Amnesty International, *A burning emergency: Extreme heat and the right to health in Pakistan* (previously cited).

473 Interview with Parveen Bibi, 2 October 2024, Karachi, Sindh, Pakistan.

There are no universal support schemes for people who cannot work due to older age or disability in Pakistan. According to HelpAge International, there are only two older age pension schemes in Pakistan: one is for government employees, which reaches just 7-10% of older people in the country; the second is a contributory scheme for people in the private sector.⁴⁷⁴ In total, approximately 80% of people of retirement age in Pakistan do not have access to any kind of pension.⁴⁷⁵ Amnesty International interviewed only three people who had access to an old-age pension.⁴⁷⁶

Similarly, people with disabilities largely lack access to any kind of support. According to government sources, people who are registered as having a disability should receive certain healthcare and rehabilitation benefits, have access to jobs protected by quotas, and get discounts on public transportation.⁴⁷⁷ While some government sources indicate that people with a disability certificate can also receive financial benefits, disability rights activists disputed the real availability of such funds.⁴⁷⁸ “There is no such thing as social protection in Pakistan,” said Muhammad Akram, the Director of Danishkadah, a representative organization of deaf people based in Karachi.⁴⁷⁹

RIGHT TO ADEQUATE STANDARD OF LIVING

Article 11 of the ICESCR, to which Pakistan is a party, recognizes the right of everyone to an adequate standard of living, including adequate food, clothing and housing, and to the continuous improvement of living conditions.⁴⁸⁰ Article 9 of the ICESCR recognizes the right to social security.⁴⁸¹ This right includes the right to access and maintain benefits to secure protection from a range of adverse circumstances, including a lack of work-related income, unaffordable access to healthcare and insufficient family support.⁴⁸² Providing social protection is particularly vital during climate emergencies, allowing people to rebuild after a natural disaster, or giving them the financial cushion necessary to take time off work during a period of intense heat.⁴⁸³ Social protection for all can serve as a form of climate adaptation in that it can substantially reduce the adverse effects of climate change on livelihoods.⁴⁸⁴

474 HelpAge International, « Four pension reforms that could improve older people's life in Pakistan », 18 February 2021, <https://www.helpage.org/blog/four-pension-reforms-that-could-improve-older-peoples-life-in-pakistan/>

475 ILO, *A social protection profile of Pakistan* (previously cited), p. 39.

476 Amnesty International interviews, September-December 2024.

477 Pakistan, Ministry of Human Rights, Human rights information resources portal (undated), https://portal.mohr.gov.pk/media_library/new-crpd-disability-certificate-benefits-english/ (accessed 15 January 2025).

478 Pakistan, Punjab Social Welfare & Bait-ul-maal Department, Assessment & Rehabilitation of Persons with Disabilities, https://swd.punjab.gov.pk/disabled-assessment_and_rehabilitation (accessed 15 January 2025).

479 Interview with Muhammad Akram, Director of Danishkadah, 14 April 2024.

480 ICESCR, Article 11.

481 ICESCR, Article 9.

482 UN CESCR, General Comment 19: The right to social security (Article 9), 4 February 2008, UN Doc. E/C.12/GC/19, para. 2.

483 The World Bank, *Social Dimensions of Climate Change, Equity and Vulnerability in a warming world*, 2010, <https://openknowledge.worldbank.org/server/api/core/bitstreams/57ef7f5d-df55-552f-91b8-843eb7b286a3/content>

484 UNFCCC, Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its fifth session, held in the United Arab Emirates from 30 November to 13 December 2023, 15 March 2024, UN Doc: FCCC/PA/CMA/2023/16/Add.1.

Pakistan does not have a comprehensive or universal social protection system, nor are its existing systems particularly adaptive to climate-related shocks. Even older people and people with disabilities, who are particularly at risk due to extreme weather conditions, have no protection in such circumstances.

The Committee on Economic, Social and Cultural Rights (CESCR), which is charged with providing an authoritative interpretation of the rights contained in the Covenant and monitors the ICESCR's implementation, has said that state parties should provide pensions to all older persons of prescribed retirement age, including those who have not completed a qualifying period of contribution.⁴⁸⁵ For older people, the right to social security is integral to realizing the right to an adequate standard of living. According to CESCR, cash or other benefits “must be adequate in amount and duration in order that everyone may realize his or her rights to family protection and assistance, an adequate standard of living and adequate access to health care”.⁴⁸⁶

5.3 DELAYED HOUSING COMPENSATION



©↑ Houses destroyed by the 2024 flooding in Badin district, Sindh. © Shakil Adil / Amnesty International

485 UN CESCR, General Comment 6: The Economic, Social, and Cultural Rights of Older Persons, 8 December 1995, UN Doc. E/1996/22, para. 30.

486 UN CESCR, General Comment 19: The right to social security (Art. 9) (previously cited), para. 22.

Flooding brought widespread destruction to housing in Pakistan. The damage was particularly extensive in rural parts of Sindh, with the province accounting for 83% of all damaged or destroyed houses.⁴⁸⁷ Together with backing from international donors like the World Bank and the Asian Development Bank, the Sindh provincial government has pledged to rebuild 2.1 million houses destroyed in the 2022 disaster.⁴⁸⁸ The project, which will be implemented by NGOs in 24 out of 30 districts of Sindh, is budgeted at \$1.5 billion.⁴⁸⁹ According to Syed Murad Ali Shah, Chief Minister of Sindh, 100,000 houses had already been built and 525,000 were under construction as of June 2024.⁴⁹⁰

However, many families told Amnesty International that they had been passed over by the reconstruction programme or struggled to navigate the process for actually receiving the funds. In September 2022, the Sindh government announced that it would conduct a survey of damaged property in the province with the help of district administrations, the NDMA, the PDMA, and the army.⁴⁹¹ While some people interviewed by Amnesty International said their houses had been registered by the survey teams in 2022, others said that they had been passed over for reasons that were not always clear to them, and were unable to subsequently register their property as being damaged. According to Abdul Hadi Rahoo, 51:

“The army came to do a survey in our village. In total seven or eight houses [in our village] were fully destroyed... [of those] they selected only two or three houses... I spent almost PKR 450,000 [US\$1,614] to reconstruct my house.”⁴⁹²

Javed Soz, director of the non-profit organization Sindh Housing Community Foundation, said that many people had been left out of the survey:

“The initiative is based on a survey launched by the Revenue Department and conducted by the military. They were very hurried in conducting that survey, and there is no formal mechanism to include [affected people] after the survey was finished.”⁴⁹³

Those who were deemed eligible should receive PKR 300,000 (US\$1,069) in four instalments.⁴⁹⁴ However, before the first instalment, interviewees said, they were required to build the foundation of their houses; only once the foundation was built and quality of the construction verified could they receive further

487 World Bank, *Pakistan Floods 2022: Post-Disaster Needs Assessment* (previously cited), p. 51.

488 Pakistan, Sindh Floods Emergency Housing Reconstruction Project, *Environmental & Social Management* (previously cited), p. 24.

489 Early Warning Systems, Sindh Floods Housing Reconstruction Project (WB-P180008) (updated 24 February 2023), <https://ewdata.rightsindevelopment.org/projects/p180008-sindh-floods-housing-reconstruction-project>. See also: Pakistan, Sindh Floods Emergency Housing Reconstruction Project, *Environmental & Social Management* (previously cited), p. 3.

490 Dawn, “Sindh govt building 2.1m houses for flood-hit people”, 7 June 2024, <https://www.dawn.com/news/1838222>

491 Business Recorder, “Flood-hit areas: Sindh govt to launch damage assessment survey”, 23 September 2022, <https://www.brecorder.com/news/40199128/flood-hit-areas-sindh-govt-to-launch-damage-assessment-survey>

492 Interview with Abdul Hadi Rahoo, 18 April 2024, Mohammad Khan Rahoo, Sindh, Pakistan.

493 Interview with Javed Soz, director of the Sindh Housing Community Foundation, 18 April 2024, Hyderabad, Sindh, Pakistan.

494 Pakistan, Sindh Floods Emergency Housing Reconstruction Project, *Environmental & Social Management* (previously cited), p. 16.

instalments.⁴⁹⁵ Recipients said they also needed to have a bank account in order to receive the funds. Some interviewees said that even though their houses were registered as damaged, they struggled to actually receive the funds, particularly when they were not literate and did not already have bank accounts.

As of April 2024, Nooram Mallah, 37, was still living in an abandoned building where she and her family had fled two years earlier, during the 2022 floods. The building's roof and walls were collapsing, so the family only sheltered there when it rained. Otherwise, they slept outside.⁴⁹⁶ Nooram said:

"We haven't received anything yet [from the government], but our name has been listed [as being eligible]. We don't have a bank account, they haven't instructed us to open a bank account... It's the responsibility of the government to help the poor people... We should be helped to reconstruct our houses."⁴⁹⁷

Some people were still living in tents two years after the 2022 floods. For example, Khatoon Chandio, 66, who lived in a tent with her adopted grandchild after fleeing her home two years earlier, said: "The government survey did not visit me... Other people in the village have been given financial help, but we have not received anything."⁴⁹⁸

Other human rights bodies have similarly found that the 2022 reconstruction efforts are inadequate. A group of experts from South Asians for Human Rights (SAHR), a regional network of human rights defenders, visited Sindh province in January 2025 and found that many people had not received compensation for housing destroyed in 2022, and were therefore still living in tents or other temporary accommodations. They said that when people did receive funds to rebuild their homes, due to inflation the current funds were not enough to meet real costs. In summary, the group found that their on-the-ground visits "contradict the provincial government's claim of launching one of the world's largest housing projects in history for flood affectees".⁴⁹⁹

In Punjab, where many people also lost property to the floods, the government said it was unable to compensate anyone for lost housing. Zaheer Liaqat Baig, the Administrative Director of Punjab PDMA, said: "People in these districts are living in dangerous areas. They live in flood plains, and this [affects] the population [during floods]."⁵⁰⁰ He said that while the Punjab government was unable to provide compensation for housing lost during the 2022 floods, it planned to take preventive action to prevent wide-scale future damage:

495 Amnesty International interviews, April-December 2024. See also: The Friday Times, "Sindh Launches World's Largest Housing Rehabilitation Project", 12 June 2024, <https://thefridaytimes.com/12-Jun-2024/sindh-launches-world-s-largest-housing-rehabilitation-project>

496 Interview with Nooram Mallah, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

497 Interview with Nooram Mallah, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

498 Interview with Khatoon Chandio, 19 April 2024, Banghar Khoso, Sindh, Pakistan.

499 Dawn, "Rights body raises concerns over Sindh gov't's flood rehabilitation efforts", 11 January 2025, <https://www.dawn.com/news/1884463>

500 Interview with Zaheer Liaqat Baig, the Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Sindh, Pakistan.

“We were not able to do proper rehabilitation due to budget constraints. However, we are working on the relocation of people to save funds in the future. If we spend some money now, and move them to safer areas, it should save PDMA money in the long term.”⁵⁰¹

Unlike in 2022, Amnesty International could not find any indication of government programmes announced online for housing reconstruction in 2024. In Sindh, for example, none of the 36 people interviewed received or knew of any compensation that they would receive for housing damaged by the September 2024 floods. In Khyber Pakhtunkhwa province, only one out of six people interviewed who had lost their homes in floods in April 2024 had received compensation. Some said this was because the local government focused on a very small area as being affected by the disaster, when the flood zone was actually much larger. Abdul Rauf Khan, whose home in Charsadda district was destroyed by flooding, said he had not received any compensation as of November 2024: “We received [no] assistance... Our names are not included in any list.”⁵⁰²

In other cases, residents reported being initially included in the compensation process by government officials, only to have their names subsequently removed. Nawab Khan said that despite being in severe financial crisis he began repairing his home after the floodwater receded, as he was not confident he would be included in any compensation schemes.⁵⁰³ He said:

“Revenue officials have prepared a list but since we do not enjoy a friendly relationship with landlords our name is not included. Although the damage assessment committee came and noted our names, our names were then removed.”⁵⁰⁴

Jameelan Nour Mohammed, 41, said that her family had taken out a loan from a bank to rebuild their house in Badin district after it was destroyed during the 2022 floods. While her family had managed to pay off the loan, she said they did not plan to take out another one after her house was damaged again in the 2024 floods. “[When] my house fell down in 2022,” she said, “we rebuilt it for PKR 200,000 [US\$718]. There is no money left to rebuild again. Why should I build it again and again if the floods will come again in a year?”⁵⁰⁵

501 Interview with Zaheer Liaqat Baig, the Administrative Director of Punjab PDMA, 11 November 2024, Lahore, Sindh, Pakistan.

502 Phone interview with Abdul Rauf Khan, 01 November 2024, Charsadda, Khyber Pakhtunkhwa, Pakistan.

503 Phone interview with Nawab Khan, 01 November 2024, Charsadda, Khyber Pakhtunkhwa, Pakistan.

504 Phone interview with Nawab Khan, 01 November 2024, Charsadda, Khyber Pakhtunkhwa, Pakistan.

505 Interview with Jameelan Nour Mohammed, 27 September 2024, Tarai, Sindh, Pakistan.

RIGHT TO ADEQUATE HOUSING

CESCR defines adequate housing as housing that provides residents with, among other things, “facilities essential for health, security, comfort and nutrition” including safe drinking water, energy, heating, and lighting, as well as protection from cold, damp, heat, rain, wind and other threats to health.⁵⁰⁶ It should also be affordable, meaning that “tenants should be protected by appropriate means against unreasonable rent levels or rent increases”.⁵⁰⁷

According to the UN Special Rapporteur on the Right to Housing, States have an obligation to “[take] measures to prevent foreseeable harm by climate change”, and “to provide an effective remedy in cases of violations of the right to adequate housing, including violations deriving from their failure to adopt adaptation measures and to avoid and reduce the effects of climate change”.⁵⁰⁸ Insurance schemes, while a common way of compensating for property lost due to natural disasters, are virtually non-existent in many developing countries, including in Pakistan.⁵⁰⁹

5.4 INTERRUPTED EDUCATION

Flooding and other climate disasters have interrupted the education of hundreds of thousands of children in Pakistan. During the 2022 floods, UNICEF estimated that 27,000 schools were damaged or destroyed, leaving two million children without access to education for months.⁵¹⁰ As of mid-September 2024, the education of at least 230,000 children in Sindh was disrupted due to damage caused by flooding in the province.⁵¹¹ Extreme heat regularly results in school closures that affect millions of children.⁵¹² Poor air quality, which is largely the result of burning fossil fuels and which is made worse by global warming, has forced schools to close in cities like Lahore.⁵¹³

School closures can have a long-lasting impact on education levels, as children who drop out of schools may be unlikely to return and may face pressure, particularly in the case of flood-induced poverty, to work for the family rather than continuing their education. The World Bank found that prior to the Covid-19 pandemic and the 2022 floods, 20.3 million children in Pakistan were out of school. That number rose by

506 CESCR General Comment 4, The Right to Adequate Housing (Article 11), 13 December 1991, UN Doc: E/1992/23, para. 8.

507 CESCR General Comment 4 (previously cited), para. 8.

508 UN Special Rapporteur on the right to adequate housing, *Report: Towards a just transformation: climate crisis and the right to housing*, 23 December 2022, UN Doc.: A/HRC/52/2, paras 7-8.

509 UN Office for Disaster Risk Reduction (UNDRR), *Global Assessment Report on Disaster Risk Reduction*, 2022, <https://www.undrr.org/media/79595/download?startDownload=20241113>, pp. 32-33.

510 UNICEF, “Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods” (previously cited).

511 UNICEF, “Education on hold for 230,000 children in Pakistan’s flood-affected Sindh” (previously cited).

512 Save the Children, “More Than Half of Pakistan’s School-Age Children Will be Out of School Due to Extreme Heat” (previously cited).

513 Dawn, “Punjab govt orders closure of all schools as province tackles hazardous air quality”, 12 November 2024, <https://www.dawn.com/news/1871888/punjab-govt-orders-closure-of-all-schools-as-province-tackles-hazardous-air-quality>

25%, to 25.4 million, in 2023.⁵¹⁴ That means that approximately one-third of Pakistan's 71 million school-age children are not in school.⁵¹⁵

Amnesty International spoke to several children who were unable to reach their schools due to climate emergencies, particularly in the case of flooding. For example, Aisha Channa, 11, said that while her school was open as of late September 2024, she had been unable to attend for over two months because the usual route she took to school was submerged under water. She said: "First we walked by foot, now there is no path, only water... All the children have already gotten their books for the fourth grade, but I haven't. I don't know when I'll be able to go back."⁵¹⁶



↑ Aisha Channa, 11, was unable to attend school for a few months due to flooding in 2024. © Shakil Adil / Amnesty International

Azam Channa, 10, said that while his school was closed for nearly two months, he had helped his uncle tending animals in the field. During that time, he had no way of reaching an open school and no ability to keep up with schoolwork. He said: "There are many boys who don't want to go to school. I want to become something... I want to do something for myself."⁵¹⁷ At the time of speaking to Amnesty International in late September, his school had just reopened and Azam planned to return in the coming days.

The CRC, to which Pakistan is a party, requires that states make primary education compulsory, available and free to all, and secondary education should be available and accessible to all.⁵¹⁸ The Committee on the Rights of the Child has stressed that after severe weather events, "States should ensure physical access to schools, especially for children in remote or rural communities, or consider alternative teaching methods, such as mobile educational facilities and distance learning".⁵¹⁹ Unfortunately, Amnesty International did not observe any alternative teaching methods in place during the floods of 2024, and did not receive reports of such from 2022.

514 Amna Memon and Yoko Okura, "Strengthening Pakistan's readiness for the next crisis".

515 PAK Alliance for Maths and Sciences, The Missing Third of Pakistan, 2021, <https://mathsandscience.pk/publications/the-missing-third>

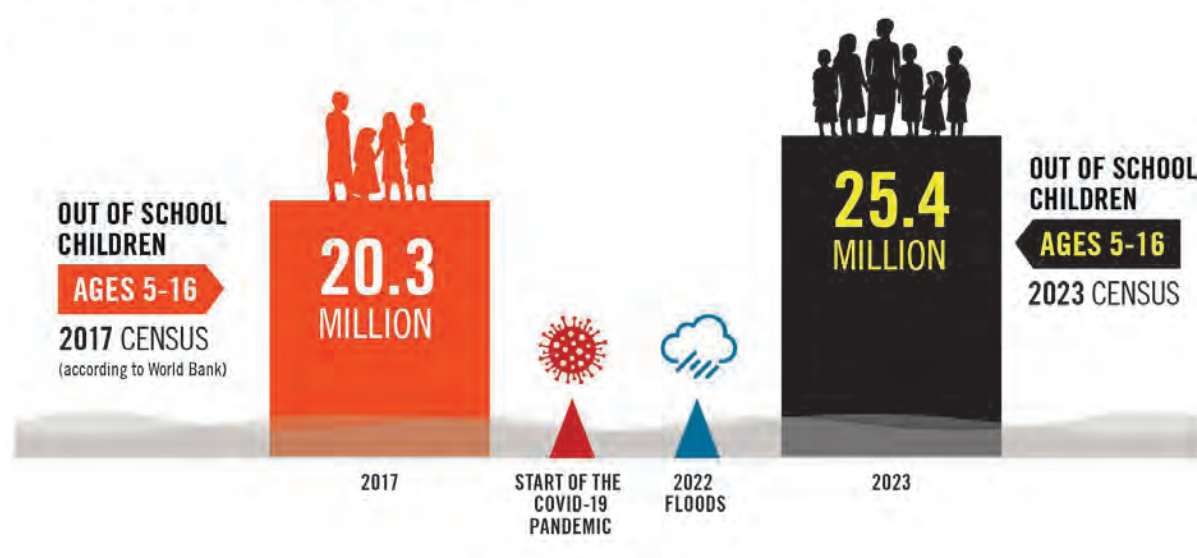
516 Interview with Aisha Channa, 29 September 2024, Sommar Channo, Sindh, Pakistan.

517 Interview with Azam Channa, 29 September 2024, Chapar Jamali, Sindh, Pakistan.

518 CRC, Article 28.

519 UN Committee on the Rights of the Child, General Comment 26 on children's rights and the environment, with a special focus on climate change, 22 August 2023, UN Doc.: United Nations CRC/C/GC/26, para. 56

Number of out of school children in Pakistan



In addition to economic pressure to work, some children – particularly girls – may face economic pressure to marry once they drop out of school. Some news outlets have reported that child marriages increased after 2022 in flood-affected areas of Pakistan, as families attempted to reduce their financial strain by marrying off girls.⁵²⁰ While Amnesty International did not document any such cases in Pakistan, studies from other communities in South Asia have shown that child marriages increase in the wake of flooding or other climate disasters.⁵²¹ Both the Committee on the Rights of the Child and CEDAW consider child marriage to be a form of forced marriage, “given that one and/or both parties have not expressed full, free and informed consent”, while also acknowledging that “marriage of a mature, capable child below 18 years of age may be allowed in exceptional circumstances.”⁵²²

Religious schools or madrassas were also impacted by the floods, although less information was publicly available about those facilities. Hafiz Rabnawaz Chang, a cleric who runs a small madrassa in a village in Badin district, said that many of his students had been displaced:

“My [madrassa] is closed now because people are displaced and have left their homes. I don’t get a salary, I just get donations from the villagers, but now their own crops are under water [so I don’t get paid].”⁵²³

520 The Express Tribune, “Extreme weather fuels child marriages”, 17 August 2024, <https://tribune.com.pk/story/2488705/extreme-weather-fuels-child-marriages>; DW, “Extreme weather drives surge in Pakistan child marriages”, 9 March 2024, <https://www.dw.com/en/extreme-weather-drives-surge-in-pakistan-child-marriages/a-70112459>

521 Khandaker Jafor Ahmed and others, “The nexus between extreme weather events, sexual violence, and early marriage: a study of vulnerable populations in Bangladesh”, 30 January 2019, *Population and the Environment*, Volume 40, <https://link.springer.com/article/10.1007/s11111-019-0312-3>

522 UN CEDAW and CRC Committee, Joint General Recommendation 31 on harmful practice, 14 November 2014, UN Doc.: CEDAW/C/GC/31-CRC/C/GC/18

523 Interview with Hafiz Rabnawaz Chang, 28 September 2024, Haji Soomar Chang, Sindh, Pakistan.

6 LEGAL ANALYSIS

6.1 CLIMATE CHANGE AND HUMAN RIGHTS

ALL STATES

In 2023, Pakistan was responsible for 1.02% of global greenhouse gas emissions, a miniscule fraction of what is contributed by high-income countries in the G20.⁵²⁴ Despite this, Pakistan is the fifth-most vulnerable country to climate change-induced disasters in the world.⁵²⁵ This follows a broader pattern of climate injustice, whereby the countries that contribute the least to climate change are often the ones most disproportionately impacted by it. The failure to protect children, older people and other at-risk groups from climate-related disasters is therefore first and foremost a global human rights failure and a massive climate injustice that needs to be remedied.

Most states across the world have agreed to be bound by a range of international human rights instruments. This includes the International Covenant on Civil and Political Rights (ICCPR), which safeguards the right to life.⁵²⁶ The Human Rights Committee, which is the authoritative body on the ICCPR, has said that environmental degradation and climate change “constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life”.⁵²⁷ Most states in the world have also ratified the ICESCR, which includes the right to the highest attainable standard of physical and mental health.⁵²⁸ In resolutions adopted in October 2021 and July 2022 respectively, the UN Human Rights Council and UN General Assembly recognized the stand-alone human right to a clean, healthy and sustainable environment.⁵²⁹ As is clearly evident from the findings of this report, climate

⁵²⁴ European Commission, EDGAR - Emissions Database for Global Atmospheric Research: GHG emissions of all world countries 2023 Report, https://edgar.jrc.ec.europa.eu/report_2023#emissions_table (accessed on 25 October 2024).

⁵²⁵ Germanwatch, Global Climate Risk Index 2021 (previously cited), p. 13.

⁵²⁶ ICCPR, Article 6.

⁵²⁷ UN Human Rights Committee, General Comment 36: Article 6: right to life, 3 September 2019, UN Doc. CCPR/C/GC/36, para. 62.

⁵²⁸ ICESCR, Article 12; UN CESCR, General Comment 14 (previously cited).

⁵²⁹ UN Human Rights Council, Resolution 48/13. The human right to a clean, healthy and sustainable environment, adopted on 8 October 2021, UN Doc. A/HRC/RES/48/13. See also: UN General Assembly (UNGA), Resolution 76/300. The human right to a clean, healthy and sustainable environment, adopted on 28 July 2022, UN Doc. A/RES/76/300.

change-related disasters threaten the right to life, the right to health, and the right to a healthy environment of many people around the world, particularly young children and older adults.

The harm created by climate change is foreseeable. All states therefore have the obligation, under international human rights law, to minimize the harmful effects of climate change on human rights. This includes taking all adequate steps, to the full extent of their abilities, to phase out fossil fuel extraction, production and use within the shortest possible timeframe, both nationally and through international co-operation and in a manner compatible with the imperative of keeping the global average temperature rise as low as possible, and no higher than 1.5°C above pre-industrial levels.⁵³⁰ High-income historical emitters, including those countries in the G20 and fossil fuel-producing states, must go further and faster than others in this regard.⁵³¹ Countries that continue to extract and burn fossil fuels have an obligation to stop doing so in order to protect not only their own populations, but also people outside their territories.⁵³²

Not only are countries that are responsible for the majority of greenhouse gas emissions failing to phase out fossil fuels fast enough, they are also not providing enough financial and other support to lower-income countries to help them adapt to climate change.⁵³³ To reduce deaths during floods, Pakistan needs hundreds of millions of dollars of investment into its irrigation and drainage systems.⁵³⁴ More robust responses to heatwaves and droughts will similarly require investment. However, as noted above, the vast majority of funding that has come to Pakistan in response to the 2022 floods was structured as loans, not humanitarian aid. Global public adaptation assistance, the kind Pakistan needs in order to invest in climate-resilient infrastructure, increased from US\$22 billion in 2021 to US\$27.5 billion in 2022, but it still lags significantly behind the real need of US\$215 to US\$387 billion per year.⁵³⁵ The majority of public adaptation finance (62%) is structured as loans rather than grants.⁵³⁶ The Pakistan government's servicing of debt, particularly to the IMF, already consumes a significant proportion of the country's budget.⁵³⁷

530 UNFCCC 1, Article 3 (1).

531 UNFCCC 1, Article 3 (1).

532 For an explanation of this position and relevant international human rights law, refer to: 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,

533 Based on the principle of common but differentiated responsibilities and respective capabilities under environmental law and the duty of international co-operation under human rights law, all states in a position to do so must provide financial resources, capacity-building and technology transfer to developing countries according to their capacity, capability and respective responsibility in causing climate change. See for example: UNGA, "Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment," (previously cited), 1 February 2016, UN Doc. A/HRC/31/52, para. 46; UNGA, "International solidarity and climate change: Report of the Independent Expert on human rights and international solidarity", 1 April 2020, UN Doc. A/HRC/44/44, para. 8.

534 Dawn, "LBOD: A development disaster that haunts Badin, two decades after its inception", 25 February 2023, <https://www.dawn.com/news/1737278>

535 UN Environment Programme (UNEP), *Adaptation Gap Report 2024*, 7 November 2024, <https://www.unep.org/resources/adaptation-gap-report-2024>

536 UNEP, *Adaptation Gap Report 2024* (previously cited), p. 42.

537 U.S. Institutes of Peace, "Will the IMF's \$7 billion Bailout Stabilize Pakistan's Economy?", September 2024, <https://www.usip.org/publications/2024/09/will-imfs-7-billion-bailout-stabilize-pakistans-economy>

The failure of states at COP29 in November 2024 to commit to providing sufficient financing to help lower-income countries adapt to (and recover from loss and damage caused by) climate change further exacerbated these trends.⁵³⁸

PAKISTAN'S OBLIGATIONS

Pakistan, as a party to the ICCPR, has an obligation to protect the right to life.⁵³⁹ According to the Human Rights Committee, which is charged with interpreting the ICCPR, states must proactively safeguard the right to life: “The obligation of States parties to respect and ensure the right to life extends to reasonably foreseeable threats and life-threatening situations that can result in loss of life”.⁵⁴⁰ In the case of flooding or heatwaves, therefore, which create foreseeable threats to the lives of people in Pakistan, the government has a corresponding obligation to put measures in place to protect the right to life of those affected. This includes early warnings, evacuations, distribution of preventive health measures such as mosquito nets or potable water, ongoing access to healthcare and the timely distribution of humanitarian aid. As this report shows, while Pakistan has made some progress on early warning systems, the other measures listed above remain largely unimproved, leaving the lives of many people at risk.

In addition to protecting the right to life, Pakistan has ratified a range of international human rights instruments that require it to respect, protect and fulfil economic and social rights, including ICESCR, CEDAW, the CRC, and the CRPD.⁵⁴¹

ICESCR requires all state parties to uphold the highest attainable standard of physical and mental health.⁵⁴² The right to health extends to the protection of the underlying determinants of health, such as food and nutrition, housing, access to safe and potable water and adequate sanitation, safe and healthy working conditions, and a healthy environment.⁵⁴³ The right to health requires that healthcare facilities, goods and services be sufficiently available and accessible. Accessibility means that these goods and services must be accessible to all, especially the most marginalized sections of the population, in law and in practice, without discrimination on any prohibited grounds.⁵⁴⁴ It also means that such services should be economically affordable, including for socially disadvantaged groups, and that “poorer households should not be disproportionately burdened with health expenses as compared to richer households.”⁵⁴⁵ Finally, the right to safe working conditions includes the “prevention and reduction of the population’s exposure to... other detrimental environmental conditions that directly or indirectly impact upon human health”.⁵⁴⁶

538 Amnesty International Canada, “COP29: Climate finance target is a blueprint for deepening inequalities, violating human rights”, 27 November 2024, <https://amnesty.ca/human-rights-news/cop29-climate-finance-target-a-blueprint-for-violating-human-rights>

539 ICCPR, Article 6.

540 UN Human Rights Committee, General Comment 36.

541 ICESCR, CEDAW Article 13, CRC Article 4, and CRPD Article 4.

542 ICESCR, Article 12.

543 UN CESCR General Comment 14 (previously cited), para. 11.

544 UN CESCR General Comment 14 (previously cited), para. 12b.

545 UN CESCR General Comment 14 (previously cited), para. 12b.

546 ICESCR, Article 7b; UN CESCR General Comment 14 (previously cited), para 15.

Under ICESCR, Pakistan must guarantee the right to social security.⁵⁴⁷ This includes the right to access and maintain benefits to secure protection from a lack of work-related income caused by sickness, disability, employment injury, unemployment, old age, and unaffordable access to healthcare. CESCR makes clear that social security systems should cover all workers, including part-time workers, casual workers, seasonal workers, the self-employed, and those working in the informal economy. CESCR has clarified that benefits should be provided to cover periods of loss of earnings by persons who are requested not to report for work during a public health or other emergency.⁵⁴⁸ This includes people who are advised to not work due to extreme weather, such as during a heatwave. Similarly, “attention should be given to ensuring that the social security system can respond in times of emergency, for example during and after natural disasters, armed conflict and crop failure”.⁵⁴⁹

As noted above, Pakistan must also guarantee the right to adequate housing.⁵⁵⁰ As is shown in this report, and by the reporting of other human rights groups, many people impacted by the 2022 and 2024 floods have not received compensation for damaged or destroyed housing, and are still living in temporary accommodations, including tents.

As noted above, resolutions adopted by the UN Human Rights Council and the UN General Assembly have recognized the human right to a clean, healthy and sustainable environment,⁵⁵¹ underscoring that damaging the environment affects a range of other rights, including the right to health. In October 2024, Pakistan passed an amendment to its constitution that, among other things, established the right to “clean, healthy and sustainable environment” in Article 9a.⁵⁵² The Constitution of Pakistan recognizes several other economic and social rights in its chapter on Principles of Policy, though these principles are not justiciable.⁵⁵³ These include “provisions for securing just and humane conditions of work”, and under Article 38, provision of “basic necessities of life, such as food, clothing, housing, education and medical relief, for all such citizens, irrespective of sex, caste, creed or race, as are permanently or temporarily unable to earn their livelihood on account of infirmity, sickness or unemployment”.⁵⁵⁴ The Principles of Policy in the Constitution, when read together with Pakistan’s international legal obligations, create a persuasive domestic obligation to guarantee the right to health, food, housing, work and social security. The Supreme Court has also held that the rights to life and dignity include the right to a healthy environment.⁵⁵⁵

547 ICESCR, Article 9.

548 UN CESCR, General Comment 19 (previously cited).

549 UN CESCR, General Comment 19 (previously cited).

550 ICESCR, Article 11.

551 UN Human Rights Council, Resolution 48/13 (previously cited); UNGA Resolution 76/300 (previously cited).

552 Pakistan Constitution, Article 9a. See also: Dawn, “What is the 26th Constitutional Amendment?”, 20 October 2024, <https://www.dawn.com/news/1866480>

553 Amnesty International, *A burning emergency: Extreme heat and the right to health in Pakistan* (previously cited).

554 National Assembly of Pakistan, “The Constitution of the Islamic Republic of Pakistan”, 12 April 1973, Articles 37 & 38.

555 ESCR-Net, “Ms. Shehla Zia v. WAPDA, PLD 1994 SC 693”, 12 February 1994, <https://www.escr-net.org/caselaw/2015/ms-shehla-zia-wapda-pld-1994-sc-693>

6.2 AT-RISK GROUPS AND CLIMATE EMERGENCIES

CHILDREN

Under the CRC, which Pakistan has ratified, all children have the right to the highest attainable standard of health without discrimination.⁵⁵⁶ Specifically, states should pursue implementation of this right by taking measures to reduce infant and child mortality; ensure that all children have access to healthcare, particularly primary healthcare; combat disease and malnutrition, including “through the provision of adequate nutritious food and clean drinking-water, taking into consideration the dangers and risks of environmental pollution”; ensure pre-natal and post-natal care for mothers; and ensure that parents and children are informed about child health and have access to preventive care.⁵⁵⁷ All children have an inherent right to life, along with the essential rights to survival and development.⁵⁵⁸ To ensure that they can exercise their rights, children must be registered immediately after birth.⁵⁵⁹ This registration not only officially recognizes their existence but also enables them to access vital services such as healthcare, education and social support.

As this report has shown, climate change clearly has a distinct and disproportionate impact on children, particularly very young children, undermining their health as well as their future opportunities. Climate change-related disasters also threaten the access that children in Pakistan have to healthcare and education. Climate change-related economic disruption in families may force children to drop out of school and join the labour market or marry early, clearly impacting their right to be protected from economic and other forms of exploitation as per the CRC.⁵⁶⁰ In 2023, the Committee on the Rights of the Child published General Comment No. 26 on children’s rights and the environment with a special focus on climate change, in which it stressed the impact of climate change on children’s rights, including their right to health. The CRC emphasized the importance of data collection in fully understanding and responding to the unique needs of children:

“The availability of high-quality data is crucial for adequate protection against climate and environmental health risks. States should assess the... health effects of environmental harm, including the causes of mortality and morbidity, while taking into consideration the entire life course of children and the vulnerabilities and inequalities that they face at each stage.”⁵⁶¹

The CRC also requires states to make primary education compulsory and available free to all, and secondary education must be available and accessible to all children.⁵⁶² In the parts of Pakistan that Amnesty International visited, particularly rural areas, many children were not in school. In Pakistan, 36%

556 CRC, Article 24.

557 CRC Article 24.

558 CRC, Article 6.

559 CRC, Article 7.

560 CRC, Articles 32 & 36.

561 UN Committee on the Rights of the Child, General Comment 26 (previously cited).

562 CRC, Article 28.

of children of primary schooling age are out of school.⁵⁶³ As seen in this report, climate change-related disasters, particularly cyclical flooding, prevent children from going to school, whether because roads are closed, schools damaged, or because families are forced to cut back on expenses including transportation costs. In its General Comment on climate change, the Committee on the Rights of the Child stressed that after severe weather events, “States should ensure physical access to schools, especially for children in remote or rural communities, or consider alternative teaching methods, such as mobile educational facilities and distance learning. Underserved communities should be prioritized for the climate-proofing and renovation of schools.”⁵⁶⁴

The Committee has also called on states to provide children and their families with poverty-alleviation programmes, particularly in areas that are most vulnerable to environmental risks.⁵⁶⁵

OLDER PEOPLE

For every year that the world fails to take action on climate change, tens of thousands of older people will prematurely lose their lives. *The Lancet*, a leading medical journal, found in its 2023 Countdown on Health and Climate Change that heat-related deaths amongst people over 65 increased by 85% between the 1991-2000 and 2013-2022 periods.⁵⁶⁶ This report and many others underscore the risks to older people from other climate change-induced disasters, such as floods. Despite the disproportionate impact that climate change has on older people, their deaths are often seen as inevitable, the erosion of their health natural, and their rights unessential.

In recent years, the disproportionate impact of climate change on older people has received growing attention from some human rights bodies. The European Court of Human Rights ruled on a landmark case in April 2024 about older women and climate change, *Verein KlimaSeniorinnen v. Switzerland*. The Court ruled that the Swiss government had an obligation to mitigate greenhouse gas emissions in line with its international commitments. It recognized that the group of older women who brought the complaint “[belonged] to some of the most vulnerable groups in relation to the harmful effects of climate change on physical and mental health”.⁵⁶⁷ Several other cases now being brought to the European Court also focus on the impact climate change has on older persons.⁵⁶⁸ Despite this progress, older people remain invisible in many of the global debates being had about climate change.

563 Pakistan Institute of Education, *Pakistan Education Statistics 2021-2022: Highlights Report*, <https://pie.gov.pk/SiteImage/Downloads/PES%20Highlights%202021-22%20New.pdf>

564 UN Committee on the Rights of the Child, General Comment 26 (previously cited), para. 56.

565 UN Committee on the Rights of the Child, General Comment 26 (previously cited), para. 47.

566 Marina Romanello and others, “The 2023 report of the *Lancet Countdown on health and climate change*” (previously cited).

567 European Court of Human Rights (ECtHR), *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland*, Application 53600/20, Grand Chamber judgement, 9 April 2024, [https://hudoc.echr.coe.int/eng/##{%22itemid%22:\[%22001-233206%22\]}](https://hudoc.echr.coe.int/eng/##{%22itemid%22:[%22001-233206%22]}), para. 530.

568 For example, *Greenpeace Nordic and Others v. Norway* (2021), which among its plaintiffs includes a group representing older people in Norway.

In Pakistan, some efforts have been made to improve the situation of older people. Most provinces have bills legislating on the rights of older people which, among other things, promise to improve living conditions and access to healthcare for older people.⁵⁶⁹ Some, like a bill pending in Punjab province, would create Citizen Welfare Councils that could then distribute financial assistance to help older people to pay for healthcare.⁵⁷⁰

Despite these efforts, older people are very much neglected in Pakistan's policy landscape. For example, most of the data the government collects on health focuses on child and maternal health. While data on child and maternal health is undoubtedly essential, it is unacceptable to exclude people over the age of 50 from health data collection in the country.⁵⁷¹ Particularly in light of the Trump administration's termination of USAID's Demographic Health Survey, which provided the primary source of detailed and disaggregated health data on Pakistan, the government of Pakistan must step up to ensure ongoing and inclusive data collection. As stated by the UN Independent Expert on the rights of older persons:

“To date, there is a serious gap in the data available to capture the lived realities of older persons and the enjoyment of their human rights. This lack of significant data and information on older persons is, in itself, an alarming sign of exclusion and renders meaningful policymaking and normative action practically impossible.”⁵⁷²

Groups like HelpAge International have pointed out that the absence of data collection extends beyond the health sector. For example, because women over 50 years old are excluded from questions about domestic violence in Pakistan, there is no information about how older women (or men) might be experiencing violence or abuse.⁵⁷³ In a report on climate-change induced disasters, the Independent Expert urged countries to improve data collection on older persons, explaining that “data on older persons is a prerequisite for effective disaster risk reduction”.⁵⁷⁴

In addition to their absence in data collection, older people face discrimination and exclusion when they encounter a healthcare system that does not prioritize people deemed ‘unproductive’ by societal standards. As seen in Chapter 3 “Healthcare Breakdown”, older people face significant barriers to accessing healthcare: they are not always admitted to hospitals in a timely manner, and when their care requires resources – for transportation, medication and treatment – many families are unable or unwilling to prioritize their health. This clearly contravenes older persons’ right to health given that health facilities,

569 Social Protection Resource Centre, *Legislation for older people in Pakistan*, 2022, <https://www.sprc.org.pk/wp-content/uploads/2022/03/SPRC-POLICY-BRIEF-updated.pdf>

570 Dawn, “Punjab government to enact law on senior citizens welfare”, 2 January 2025, <https://www.dawn.com/news/1882486/punjab-government-to-enact-law-on-senior-citizens-welfare>

571 UN Independent Expert on the enjoyment of all human rights by older persons, Report: *Human rights of older persons: the data gap* (previously cited).

572 UN Independent Expert on the enjoyment of all human rights by older persons, Report: *Human rights of older persons: the data gap* (previously cited), para. 19.

573 HelpAge International, *How data systems leave older people behind*, 2017, <https://www.helpage.org/silo/files/how-data-systems-leave-older-people-behind.pdf>

574 UN Independent Expert on the enjoyment of all human rights by older persons, Report: *Human rights of older persons in the context of climate change-induced disasters*, 25 July 2023, UN Doc.: A/78/226.

goods and services must be accessible to all without discrimination.⁵⁷⁵ Accessibility means that services must be available to all on a non-discriminatory basis, and that they be affordable for disadvantaged groups and physically accessible.⁵⁷⁶

Older people are further marginalized by their lack of income. In order to comply with international law, all state parties should provide pensions to older people of prescribed retirement age, including those who have not completed a qualifying period of contribution.⁵⁷⁷ Despite this obligation, worldwide more than 20% of people over retirement age – or at least 165 million people – do not receive a pension, according to the ILO.⁵⁷⁸ In low- and middle-income countries like Pakistan this issue is particularly acute, and more so for women, who are less likely to have worked in formal employment. According to HelpAge International, just 8.1% of women in low- and middle-income countries who are currently of working age are covered by any kind of pension scheme, compared to 20.8% of men.⁵⁷⁹ As has been shown in this report, when older people lack access to income, they are often unable to pay for essential health services or to avoid working in conditions that are dangerous for their health.

The Universal Declaration of Human Rights, the ICCPR, and ICESCR all fail to specifically prohibit discrimination on the basis of age. Both the ICCPR and ICESCR, for example, prohibit discrimination on the basis of “race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status”.⁵⁸⁰ While CESCR has said that age-based discrimination is included under “other status”⁵⁸¹ and CESCR General Comment 6 highlights some of the rights of older people, the lack of explicit reference to age discrimination in the ICESCR itself has meant that rights in older age are not fully recognized or reported on.⁵⁸² This is particularly important when it comes to areas where older people face widespread discrimination, including healthcare.

Unlike in the case of other groups including children, women, people with disabilities and racial minorities, there is not yet any international treaty dedicated to protecting the rights of older persons. The UN High Commissioner on Human Rights concluded in a 2022 report that “the fragmentation of existing norms and procedures and their conceptual and operational limitations have resulted in an overall failure to provide adequate recognition and protection of the human rights of older persons at the international level”.⁵⁸³

575 UN CESCR General Comment 14 (previously cited).

576 UN CESCR General Comment 14 (previously cited).

577 UN CESCR General Comment 6 (previously cited), para. 30.

578 ILO, *World Social Protection report 2024-26: Universal social protection for climate action and a just transition*, 2024, https://www.ilo.org/sites/default/files/2024-09/SOCPRO_WSPR_2024_Executive_Summary_EN_Web.pdf

579 HelpAge International, *Investing in equality: Addressing the funding gap for older women*, 2024, <https://www.helpage.org/wp-content/uploads/2024/09/Investing-in-Equality.pdf>

580 Amnesty International, *Why we need a UN convention on the rights of older persons*, 1 July 2024 (Index: ACT 30/8189/2024), <https://www.amnesty.org/en/documents/act30/8189/2024/en/>

581 CESCR, General Comment 20 on Non-discrimination in economic, social and cultural rights, 2 July 2009, UN Doc.: E/C.12/GC/20.

582 UN CESCR General Comment 6 (previously cited).

583 UN High Commissioner for Human Rights (OHCHR), *Report: Normative standards and obligations under international law in relation to the promotion and protection of the human rights of older persons*, 28 January 2022, UN Doc.: A/HRC/49/70, para. 54.

As the evidence in this report shows, older persons are often seen as disposable, and their rights – including the most fundamental, such as their rights to life and health – as unimportant. This starts with their invisibility in data collection, and trickles into all aspects of life, from how seriously their health is treated at a doctor’s office to whether they may be forced to work in conditions that are dangerous enough to kill them. In pursuit of a UN convention on the rights of older persons, which would help advance norms and practices around the world, member states at the Human Rights Council should actively and constructively contribute to the intergovernmental working group dedicated to drafting such a treaty, which was created by the Human Rights Council in April 2025.⁵⁸⁴ Without a UN convention, norms protecting older people will remain vague and fragmented, and their rights inadequately protected.

584 UN Human Rights Council, Resolution 58/13. Open-ended intergovernmental working group on the elaboration of a legally binding instrument on the promotion and protection of the human rights of older persons, adopted on 3 April 2025, UN Doc. A/HRC/58/L.24.Rev.1.

7 RECOMMENDATIONS

ALL AUTHORITIES IN PAKISTAN:

- Ensure comprehensive, disaggregated data collection on mortality and morbidity during climate-related emergencies, and ensure that this data is shared between all relevant government agencies and with the public;
- Enhance death registration by reducing barriers to registration; this can be achieved by waiving fees and removing logistical barriers, including those posed by lack of transport and illiteracy; consider using existing health worker infrastructure to improve death registration rates, akin to what has been done to improve birth registration rates in Pakistan;
- Ensure that older people are among those prioritized in data collection related to health, mortality, and/or climate change, and that data collection does not include arbitrary age cut-offs;
- Ensure that all people whose housing was destroyed or damaged during the 2022 or 2024 floods receive adequate compensation to reconstruct their homes, including by reopening applications to existing programmes such as the Sindh Emergency Housing Reconstruction Project;
- End restrictive policies that bar or limit the operation of NGOs in order to enhance disaster responses and climate resilience efforts.

TO PAKISTAN'S DISASTER MANAGEMENT AUTHORITIES:

- Properly fund disaster management authorities at the district level, ensuring that local authorities have dedicated full-time staff and resources to respond more effectively to climate-related disasters;
- Ensure that all provinces and districts have multi-hazard risk assessments in place, and that these assessments are accurate and regularly updated;
- Ensure that extreme heat is treated as a climate disaster by authorities at all levels of governance; ensure that corresponding resources are available to allow district and provincial authorities to respond to heatwaves, including with both advisories and preventive measures such as cooling centres;

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- Increase the number of cooling centres per population during heatwaves;
 - Formally declare an emergency in response to a climate disaster in a timely fashion so as to ensure a quick and robust humanitarian response;
 - Continue to increase investment in early warning systems for disaster responses, making use of accessible technology and diverse methods of communications to ensure that all at-risk groups, including older people, people with disabilities, women and children, are reached;
 - Ensure timely evacuation of people from disaster-prone areas, and ensure that all those who want to reach displacement camps are assisted to do so; ensure that older people, people with disabilities and children are among those groups prioritized in evacuation efforts;
 - Ensure that displacement camps are available outside of major cities, and that people living in remote and rural areas have access to them;
 - Ensure that people in displacement camps have access to adequate shelter, healthcare, food and clean potable water, and that conditions are sanitary; accommodations must be appropriate, accessible and safe for older persons, persons with disabilities and children, and must be appropriately tailored to the needs of women and girls;
 - Ensure that people in displacement settings have access to healthcare and medications, including for conditions that particularly impact older people and children; ensure that preventive health items such as mosquito nets and potable water are distributed before a disaster.

TO PAKISTAN'S MINISTRY OF HEALTH

- Increase health spending so that the percentage of spending per GDP is aligned with international best practices and allows for people to fulfil their right to health;
- Ensure that primary and secondary healthcare staff are aware of how to treat those impacted by climate-related disasters, including extreme heat; ensure that primary and secondary healthcare facilities have sufficient medication and equipment to respond to increases in the patient load;
- Take concrete, time-bound steps toward fulfilling existing commitments in the National Adaptation Plan to adapt Pakistan's healthcare system to climate change by strengthening the capacity of healthcare bodies at all levels of government;
- Improve data collection on mortality, particularly as it relates to climate change and at-risk groups; ensure better data-sharing with other parts of government and with the public;

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- Take steps to improve the access of young children and older people to healthcare, including by developing protocols to prevent discrimination against these groups within the healthcare system, and enhancing the affordability of care including by funding transportation, medication, or other costs;
 - Include older people and people with disabilities in the National Health Vision of Pakistan as among those groups requiring particular attention in policymaking; elaborate in the next National Health Vision specific ways Pakistan's healthcare sector is being made more resilient to climate change.
 - Ensure that healthcare facilities that are rebuilt after a flood or other climate disaster are rebuilt so as to protect them from future floods, and other extreme weather events.

TO PAKISTAN'S EMPLOYEE OLD-AGE BENEFITS INSTITUTE:

- Expand existing pension coverage to create a universal old-age pension system, such that all people of retirement age have an adequate standard of living and are not forced to work during extreme heat or other dangerous conditions.

TO PAKISTAN'S MINISTRY FOR POVERTY ALLEVIATION AND SOCIAL SAFETY:

- Urgently enhance existing social protection programmes and increase expenditure on them to ensure that everyone who needs it has access to social protection. Revise existing social protection strategies and plans in Pakistan, to move away from narrow poverty targeting, and towards universal social protection. Where the government is unable to meet the funding requirements, it should request specific international assistance to this end as a priority;
- Ensure that all people have access to social protection, removing discriminatory barriers that prevent certain groups including women, refugees, and older people from accessing social protection due to a lack of documentation or other factors;
- Ensure that social protection is sufficiently flexible to meet a sudden change in people's socioeconomic situation due to climate change-related events, such as flooding or droughts;
- Ensure that all people, including those who work in the informal sector, are adequately protected against loss of income if they are unable to work during periods of extreme heat;
- Ensure that all places of work adequately respond to periods of extreme heat including by adapting work hours and methods, and ensuring access to cooling technologies and protective equipment where applicable;
- Ensure adequate financial support and social protection for families impacted by climate disasters to guarantee that all children can enjoy their economic and social rights, including their rights to health, food, adequate standard of living, and education, thereby preventing child labour and child marriage.

TO PAKISTAN'S MINISTRY OF INTERIOR:

- Remove barriers, including so-called “No Objection Certificates” (NOCs) and other requirements, that prevent international and national organizations from operating quickly in response to climate emergencies, or which prevent them in non-emergency times from enhancing climate resilience in Pakistan.

TO PAKISTAN'S CLIMATE CHANGE MINISTRY:

- In line with Pakistan's existing commitments under its Nationally Determined Contribution, develop a Pakistan Cooling Action Plan (PCAP) which would identify key cooling needs and prioritize initiatives to address current and future demands while minimizing environmental impact;
- When developing any plans relating to climate adaptation and preparation for climate disasters, ensure the meaningful participation of representatives of those groups at higher risk including older people, people with disabilities, children and women.

TO PAKISTAN'S EDUCATION MINISTRY:

- In line with recommendations by the UN Committee on the Rights of the Child, ensure physical access to schools, especially for children in remote or rural communities, during flooding or other climate-related emergencies; consider alternative teaching methods, such as mobile educational facilities and distance learning;
- Ensure that schools that are rebuilt after a flood or other climate disaster are rebuilt so as to protect them from future floods;
- Integrate education and the needs of children into national disaster management and post-disaster rehabilitation;
- Take steps to encourage children who have missed school due to climate change-related disasters to rejoin through awareness-raising and other programmes.

TO ALL STATES – ESPECIALLY COUNTRIES WITH HIGH HISTORIC EMISSIONS:

- Rapidly and equitably phase out all fossil fuel extraction, production and use and shift towards renewable energy for all produced in a manner consistent with human rights as quickly as possible, based on a state's capacities and responsibility for emissions;
- Cease all new oil, gas, and coal exploration and development and stop financing fossil fuel projects domestically and abroad;
- Rapidly provide adequate, new, additional and predictable finance – primarily in the form of grant equivalent public finance – to support lower-income countries in reducing emissions, adapting to

climate change, ensuring just transitions away from fossil fuels in all sectors, and addressing loss and damage.

- Massively scale up funding for adaptation to address the adaptation finance gap
- Phase out all tax incentives and subsidies for fossil fuel production. In doing so, ensure any changes to taxation and subsidies do not disproportionately impact people with lower incomes by conducting human rights impact assessments and introducing appropriate social protection mechanisms to compensate as necessary;
- Support timely debt relief for all countries, including Pakistan, in and at risk of debt distress, including consideration of debt restructuring and/or cancellation ensuring that:
 - Loan agreements provide for the suspension of payments in times of crises, including unnatural climate related disasters, and other disasters and economic crises.
 - Debt agreements do not undermine governments' ability to meet their economic, social and cultural rights obligations, including in relation to the climate crisis.
 - The terms of bilateral, multilateral and private sovereign lending are transparent and available for, and subject to, public scrutiny.

TO INTERNATIONAL DONORS:

- Include older people and children among those groups prioritized in development or funding for climate disaster responses;
- Ensure that any data collection collected during climate disasters, or data collected in countries impacted by climate change such as Pakistan, is disaggregated by age and does not exclude older people, people with disabilities, or any other at-risk groups.

TO THE UNITED STATES:

- Reinstate the Demographic Health Survey (DHS) programme, given its essential role in facilitating health data collection in low- and middle-income countries;
- Ensure the inclusion of older people in a reinstated DHS programme, or any other data collection programmes that may replace it.

TO HUMANITARIAN ACTORS:

- Ensure that older people and children are among those prioritized in evacuation efforts, that temporary accommodations in displacement are accessible and tailored to their needs, and that they receive food, medicines and other supplies that are adequate for their needs and conditions;

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- Ensure that older people have meaningful opportunities to participate in all facets of disaster preparedness, response and recovery, and any data collection or programming meaningfully includes them;
 - In responding to climate change-related disasters, prioritize the best interests of the child in all decisions and actions concerning children.

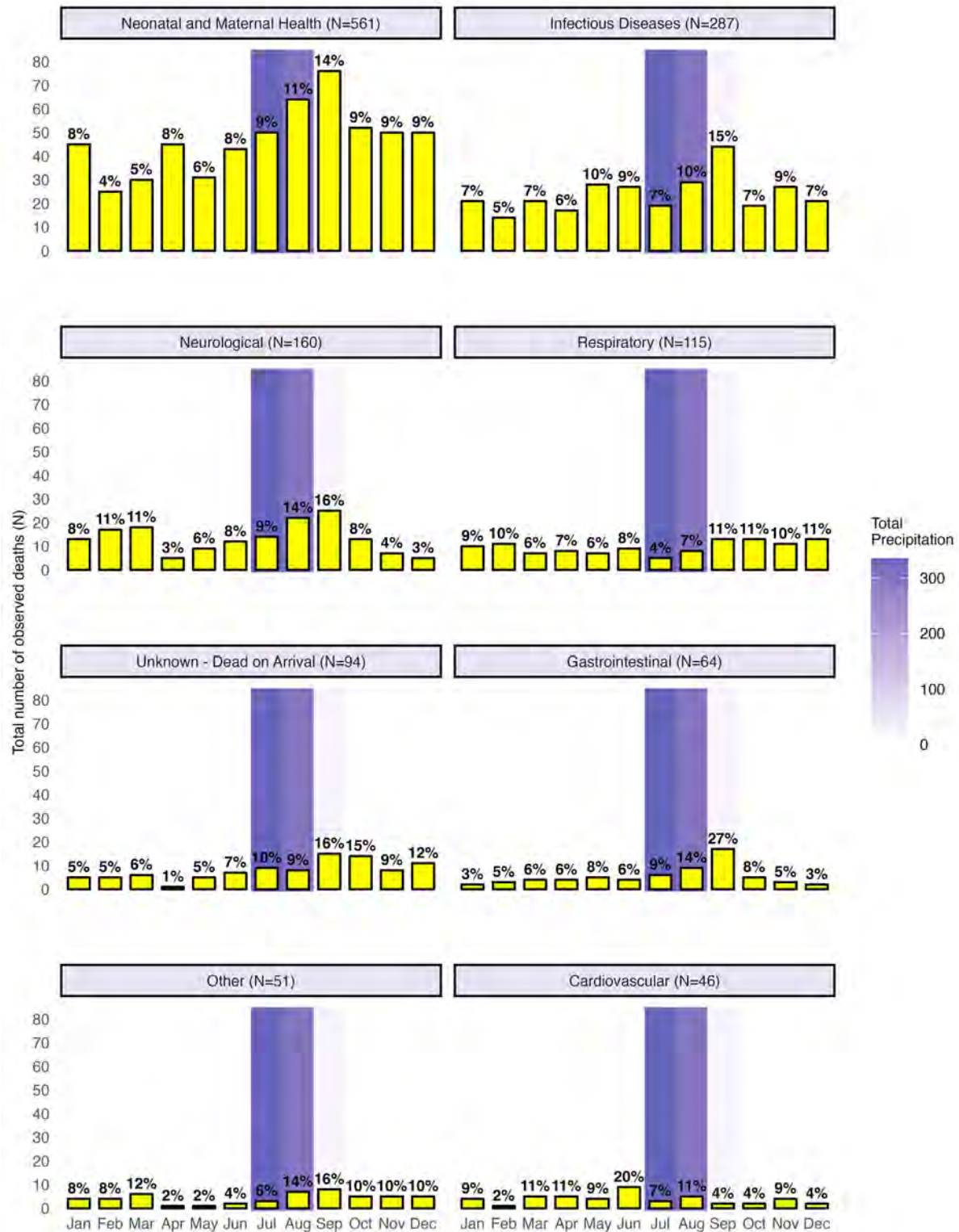
TO MEMBER STATES OF THE UNITED NATIONS:

- Ensure that the Human Rights Council advances discussions, including with concrete timelines and proposals for a draft, on a global treaty on the rights of older people, in close consultation with civil society organizations and groups representing older persons;
- Ensure that any resolution or statement on the climate crisis adopted at the General Assembly, the Security Council, and the Human Rights Council s highlights the situation of young children and older adults;
- Make recommendations to states undergoing their Universal Periodic Review, as well as relevant treaty body reviews, to protect the rights of older persons affected by climate change, including by advancing discussions on a global treaty on the rights of older people.
- In responding to climate change-related disasters, prioritize the best interests of the child in all decisions and actions concerning children.

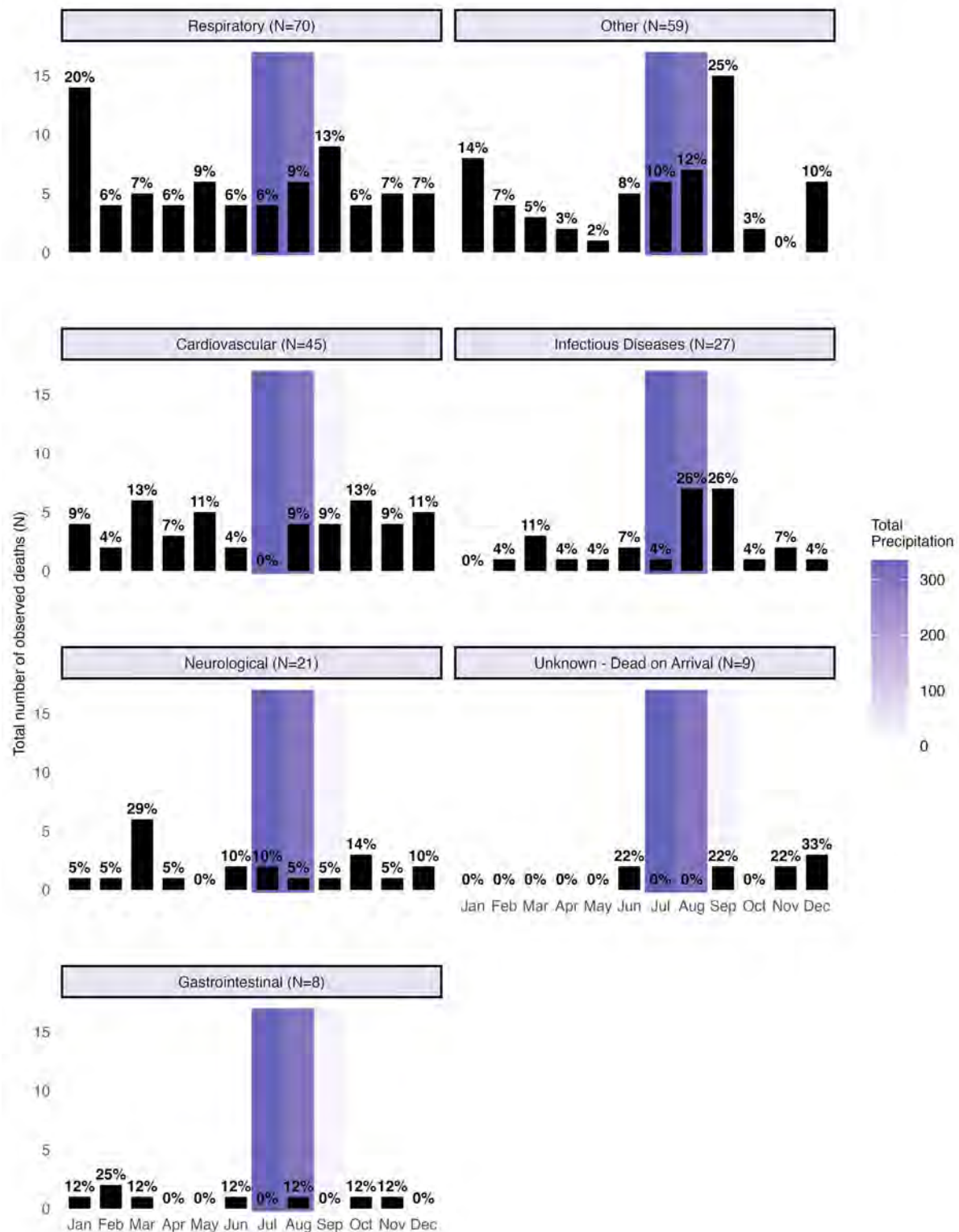
APPENDIX

The main report presented the IHHN data on observed deaths at the Badin hospital for select age groups and causes of death in relation to total monthly precipitation in a condensed format (see Figures 3 and 4 above). In this appendix, we provide a more in-depth view into the IHHN data regarding the observed temporal distribution of different causes of death among children aged zero to five years, as well as people aged 50 years or older, as recorded at IHHN's Badin and Muzaffargarh facilities, and how this relates to total monthly precipitation in these locations (see Appendix Figures 1 through 4 below). We also provide a breakdown of the observed temporal distribution of different causes of death for these age groups according to death records at the Muzaffargarh hospital in relation to the average monthly temperature in this location in Appendix Figures 5 and 6.

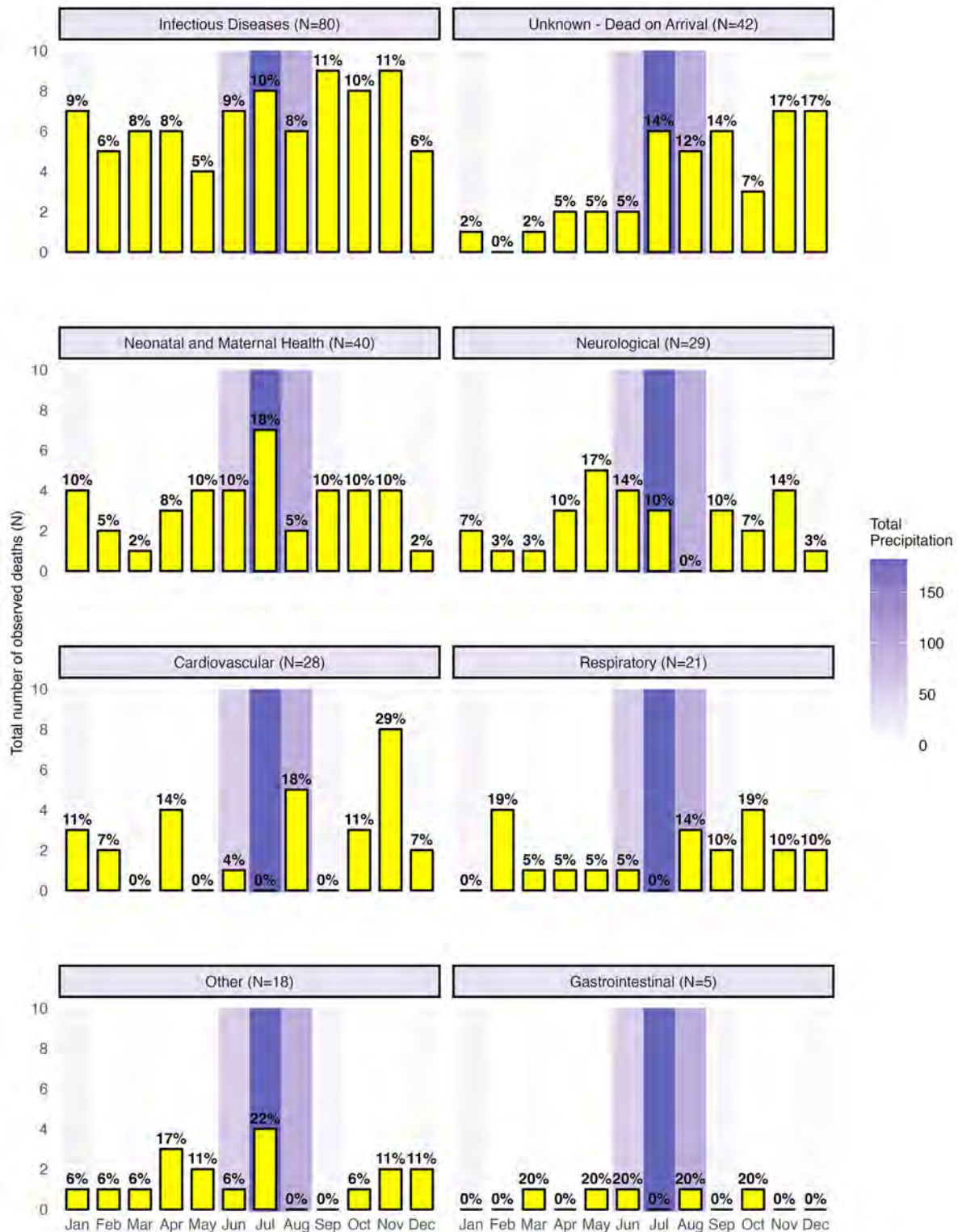
© Appendix Figure 1. These bar graphs show the total number of observed deaths among children aged 0-5 years at the IHNN Badin facility each month in 2022 for different causes of death, ordered from most frequent to least frequent cause of death. The total number of deaths (N) attributed to each cause of death is given in the title of each graph. The height of each bar indicates the observed number of deaths each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimetres) that occurred each month, highlighting the extreme amounts of rainfall that led to flooding in July and August.



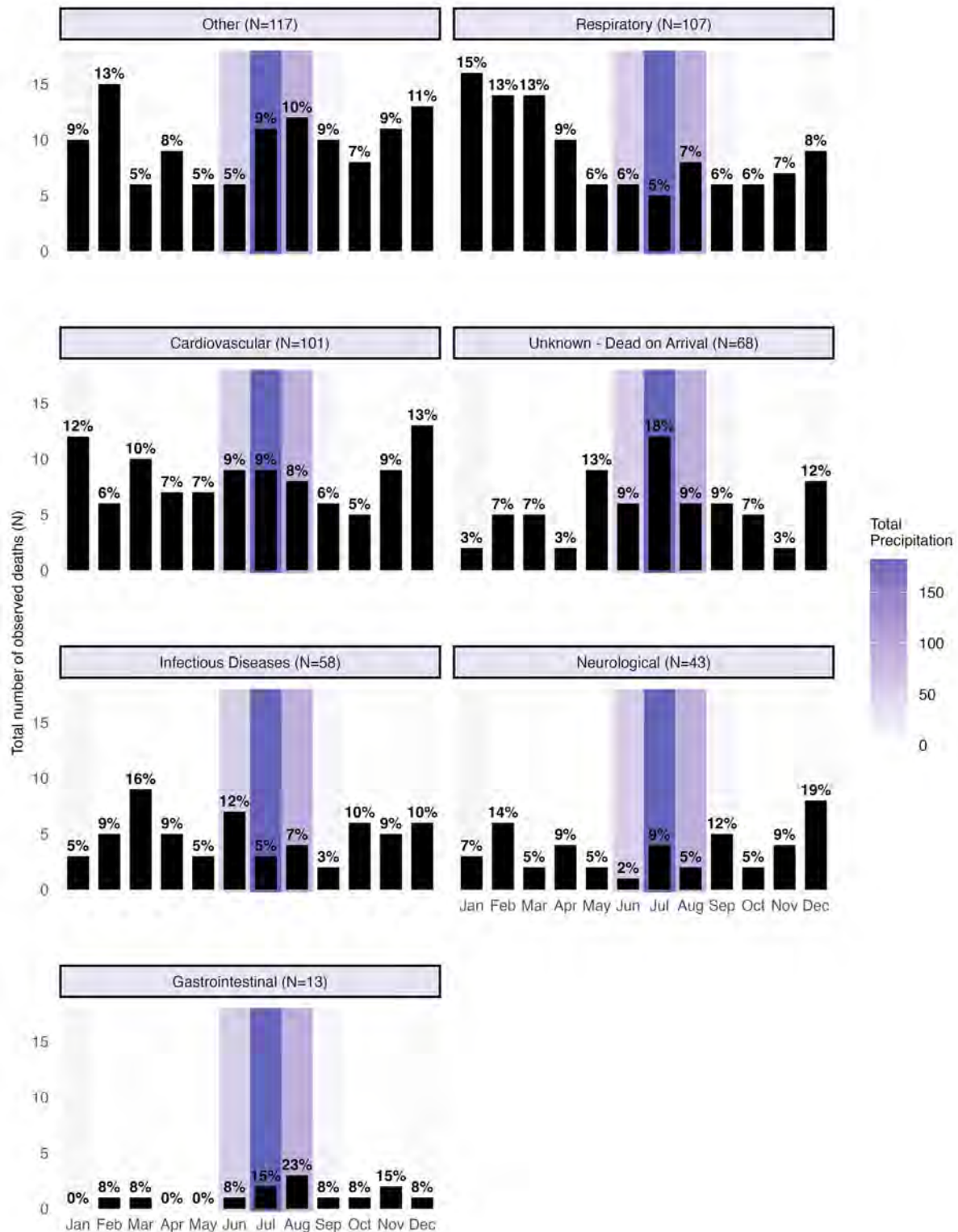
Appendix Figure 2. These bar graphs show the total number of observed deaths among people aged 50 years or older at the IHHN Badin facility each month in 2022 for different causes of death, ordered from most frequent to least frequent cause of death. The total number of deaths (N) attributed to each cause of death is given in the title of each graph. The height of each bar indicates the observed number of deaths each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimetres) that occurred each month, highlighting the extreme amounts of rainfall that led to flooding in July and August.



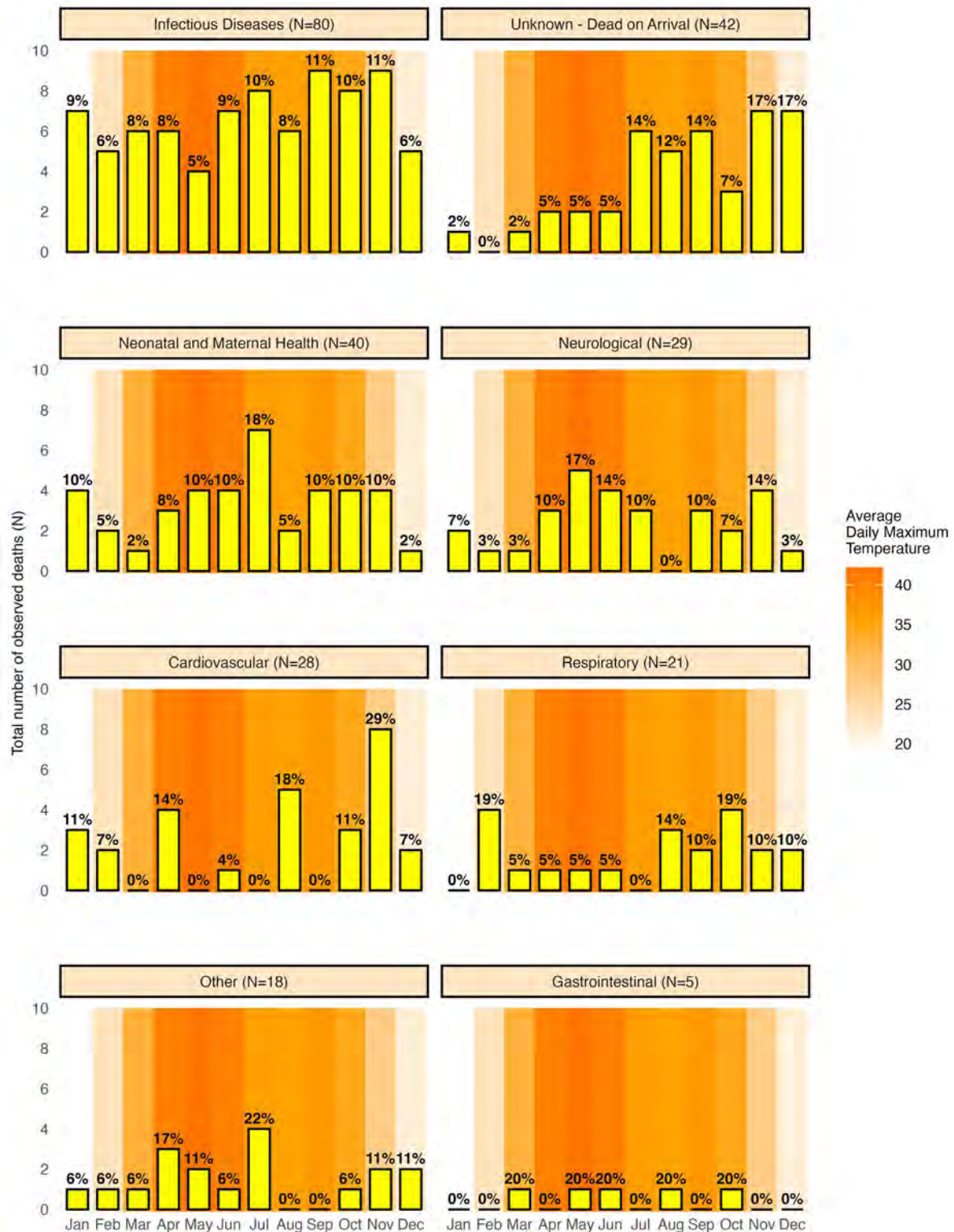
Appendix Figure 3. These bar graphs show the total number of observed deaths among children aged 0-5 years at the IHNN Muzaffargarh facility each month in 2022 for different causes of death, ordered from most frequent to least frequent cause of death. The total number of deaths (N) attributed to each cause of death is given in the title of each graph. The height of each bar indicates the observed number of deaths each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimetres) that occurred each month, highlighting the amounts of rainfall that led to flooding in July and August.



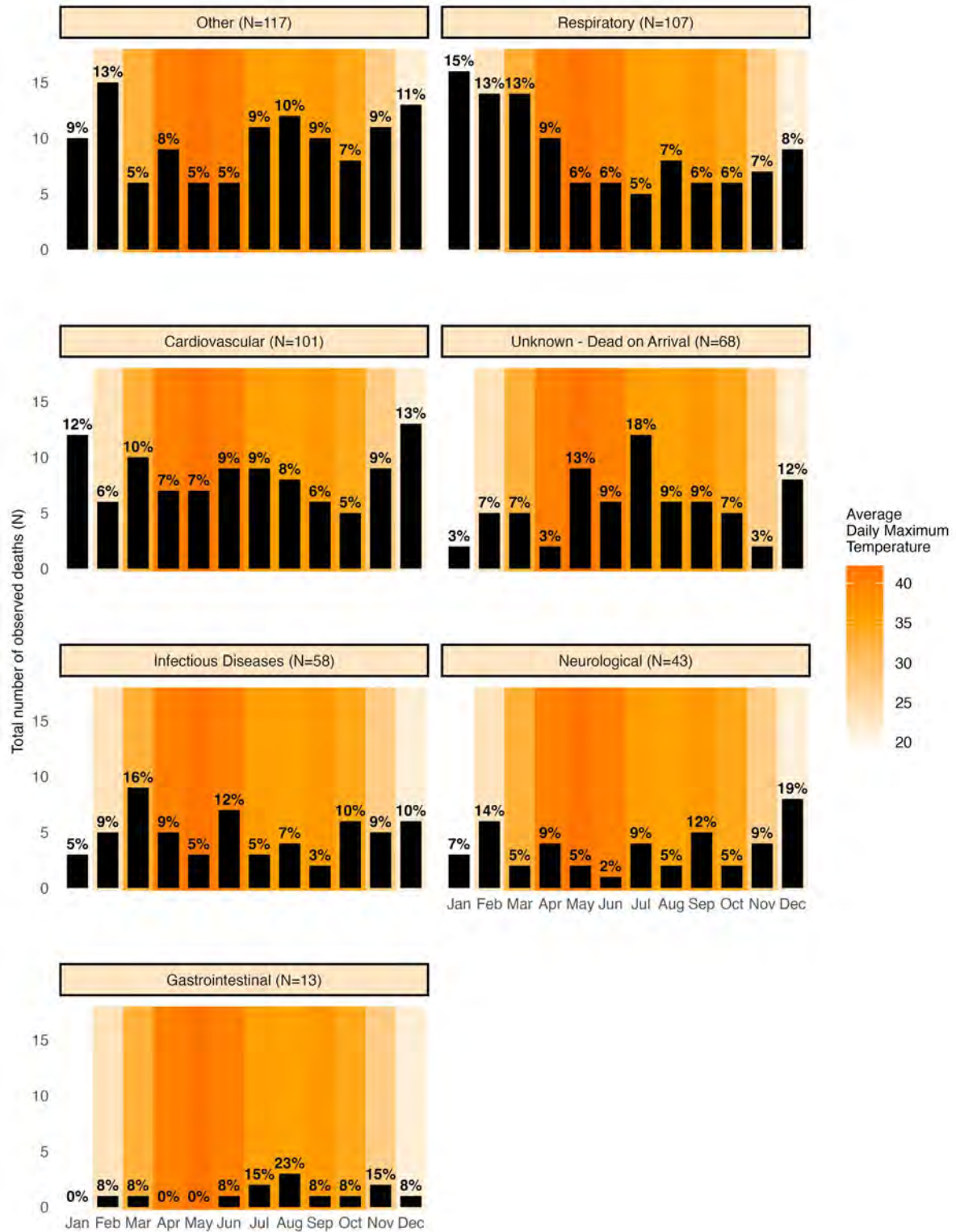
Appendix Figure 4. These bar graphs show the total number of observed deaths among people aged 50 years or older at the IHHN Muzaffargarh facility each month in 2022 for different causes of death, ordered from most frequent to least frequent cause of death. The total number of deaths (N) attributed to each cause of death is given in the title of each graph. The height of each bar indicates the observed number of deaths each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to the total amount of precipitation (in millimetres) that occurred each month, highlighting the amounts of rainfall that led to flooding in July and August.



Appendix Figure 5. These bar graphs show the total number of observed deaths among children aged 0-5 years at the IHHN Muzaffargarh facility each month in 2022 for different causes of death, ordered from most frequent to least frequent cause of death. The total number of deaths (N) attributed to each cause of death is given in the title of each graph. The height of each bar indicates the observed number of deaths each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to that month's average daily maximum temperature (in degree Celsius), highlighting the months that experienced very high temperatures (April-June).



©↓ Appendix Figure 6. These bar graphs show the total number of observed deaths among people aged 50 years or older at the IHHN Muzaffargarh facility each month in 2022 for different causes of death, ordered from most frequent to least frequent cause of death. The total number of deaths (N) attributed to each cause of death is given in the title of each graph. The height of each bar indicates the observed number of deaths each month. The percentage of observed deaths per month is shown at the top of each bar. The background of each bar is shaded according to that month's average daily maximum temperature (in degree Celsius), highlighting the months that experienced very high temperatures (April-June).



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UNCOUNTED

INVISIBLE DEATHS OF OLDER PEOPLE AND CHILDREN DURING CLIMATE DISASTERS IN PAKISTAN

Pakistan contributes just over 1% of global greenhouse gas emissions and yet is the fifth-most vulnerable country to climate disasters in the world. In 2022, record heatwaves and heavy monsoon rains led to massive floods that affected 33 million people and displaced 8 million. Officially, 1,739 lives were lost during the flooding, though the true toll is likely much higher. Similar extreme rainfall and heat returned in 2024, again putting lives at risk.

This report is a collaboration between Indus Health & Hospital Network (IHHN) and Amnesty International to understand the health impacts of flooding and heatwaves. It combines IHHN's analysis of deaths at three hospitals with 210 interviews by Amnesty International, including with affected families, healthcare workers, NGO staff, and government officials. The report examines how inadequate disaster responses make it difficult for people to access healthcare, leading to preventable deaths. It highlights the particular risks older people and children face, and that many deaths likely linked to these events are not officially recorded as such, leading to a significant undercount in official death tolls.

Pakistan must increase health sector spending to protect the right to life and health, ensuring more effective responses through better data collection that includes all groups, especially older people and children. However, global action is also crucial. The most direct way for countries to protect the rights of millions is to stop extracting and burning fossil fuels.

Index: ASA 33/9007/2025
May 2025

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