



A CLARION CALL FOR CLIMATE JUSTICE

The human rights cost of the 2022 floods

A Clarion Call for Climate Justice

The human rights cost of the 2022 floods



Human Rights Commission of Pakistan

© 2023 Human Rights Commission of Pakistan

All rights reserved. Any part of this publication may be reproduced by duly acknowledging the source.

Every effort has been made to ensure the accuracy of the contents of this publication. The Human Rights Commission of Pakistan takes no responsibility for any unintentional omissions.

ISBN 978-627-7602- 12-3

Printed by Visionaries Division
90A Airlines Housing Society
Khayaban-e-Jinnah, Lahore

Cover design image credits

Foreign Policy (<https://foreignpolicy.com/2022/09/01/pakistan-flooding-crisis-climate-change-governance/>)

Punjab Government Flood Relief (<https://floodrelief2022.punjab.gov.pk/>)

The Times (<https://www.thetimes.co.uk/article/britons-raise-pound5m-to-help-flood-victims-in-pakistan-8mjzj2v8hrl>)

Human Rights Commission of Pakistan

Aiwan-e-Jamhoor

107 Tipu Block, New Garden Town

Lahore 54600

T: +92 42 3583 8341, 3586 4994, 3586 9969

E: hrcp@hrcp-web.org

www.hrcp-web.org

Contents

1	Introduction	5
2	The Making of a Crisis	6
3	The Human Rights Cost of the 2022 Floods.....	12
4	Moving Towards Climate Justice.....	26
5	Recommendations.....	32

Acknowledgements

The Human Rights Commission of Pakistan would like to thank Afia Salam for preparing this report as well as all those who took part in the organisation's roundtable on climate justice in Islamabad and provided valuable insights and recommendations. We would also like to thank Akbar Notezai, Imran Gabol, Israruddin Israr, Zia-ur-Rehman, Mohammad Hussain Khan, Aurangzaib Khan and Dr Hunain for preparing the case studies based on their observations from the field, and Niaz Ahmad Khan and Imdadullah Khoso for the images we have used. We are grateful to the project team for reviewing, editing and composing this publication.

1 Introduction

The impact of the 2022 floods in Pakistan cannot be understated. According to the country's National Disaster Management Authority (NDMA), a total of 1,739 lives were lost, 12,867 people were injured and over 33 million people were affected.¹ With a third of the country submerged under water, citizens in 90 districts hit by the calamity were left homeless. Over 1.7 million houses were destroyed by torrential rains, glacial lake outburst floods (GLOFs) and the flooding of the Indus River and its tributaries.² The havoc wreaked by these floods have also laid bare the socioeconomic fault lines in Pakistan, exacerbating the effects of runaway inflation, an energy crisis and massive food insecurity. These factors, combined with recurring climate emergencies, such as heatwaves, smog and droughts on an already struggling population, leave little room for relief and rehabilitation.

This situation underscores just how integral environmental rights are to the realisation of fundamental human rights, such as the rights to life, health, food, water and sanitation. Without a safe, clean, healthy and sustainable environment, people (particularly vulnerable groups) cannot live at a level commensurate with the minimum standards of human dignity. This is why a new social contract must be envisioned, one rooted in climate justice – the concept that climate change is an ethical, legal and political issue rather than solely environmental.³ The disproportionately adverse effects of climate change on the fundamental rights of the most vulnerable communities in Pakistan must be acknowledged and the state's responsibility to these communities fulfilled by building a more resilient system of governance that puts climate science first.

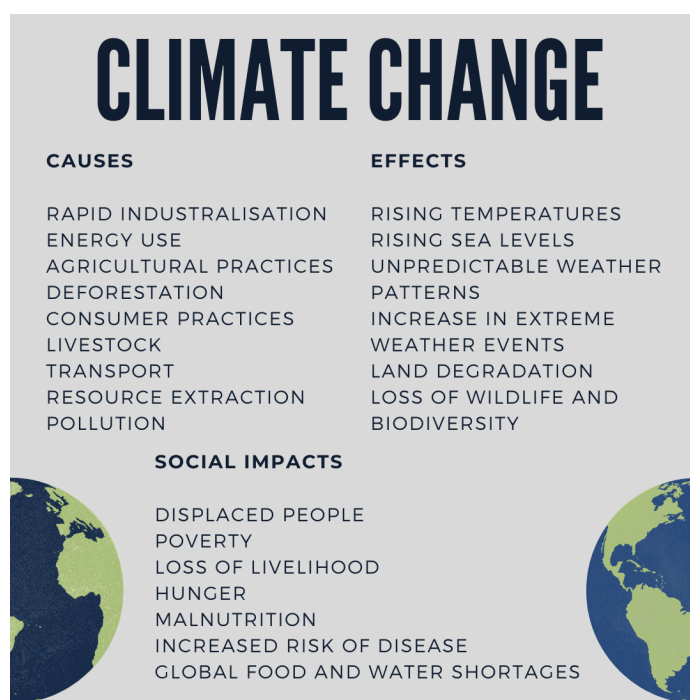
This study examines the impact of the floods from three perspectives: the right to health, the right to shelter and the right to livelihood. It also analyses the policies and (in)action that have led to Pakistan bearing the brunt of the impact of climate change despite contributing less to global emissions than other countries.⁴ It draws on expert analysis from a high-profile roundtable held by the Human Rights Commission of Pakistan (HRCP) in December 2022. The study is complemented by case studies of flood-affected persons and relief workers from different parts of Pakistan who were interviewed by six teams of human rights workers and journalists during a series of fact-finding missions conducted in September 2022.

While Pakistan has every right to demand climate reparations, it must also look within and articulate a strategy to ensure that its most vulnerable groups receive climate justice, and to secure all people's rights to shelter, health and livelihood amid the climate crisis. Both state and society must recognise that the climate crisis is not a comfortably distant prospect – it is happening here and it is happening now.

2 The Making of a Crisis

In 2022, Pakistan experienced a series of climate-change related events that quickly became a climate disaster. At the end of March 2022, an intense heat wave began in the southern part of the country, affecting cities such as Dadu and Sukkur in Sindh, Dera Ghazi Khan and Sargodha in Punjab, and Sibbi in Balochistan; temperatures of over 50 degrees were also reported in Jacobabad in May.⁵ This meant that Pakistan skipped spring after winter,⁶ resulting in water shortages, compromised crop yields such as mango production and shortfalls in wheat targets.⁷ This heatwave was also the predictive indicator of a heavier-than-normal monsoon forecast due to the vast volume of water evaporation that took place, and amplified the melting of the glaciers. Starting mid-June, the excess moisture sucked up by the atmosphere due to the heatwave was then offloaded in areas outside the 'normal monsoons' region, specifically Balochistan and Sindh. These shifts in the patterns and geographic location of the monsoon were all indicative of extreme weather events related to climate change⁸ (Figure 1).

Figure 1: Causes, effects and impact of climate change



Source: Adapted from Global Giving.

The South Asian Monsoon Forecasting Forum⁹ met in April 2022 and predicted that these shifts would lead to a disastrous climate event in July; this proved true when a GLOF took place in Gilgit-Baltistan's Shishper Glacier. GLOFs are sudden events that can release millions of cubic metres of water and debris, leading to loss of life, property and livelihoods among remote and impoverished mountain communities.¹⁰ Over 7.1 million people in Gilgit-Baltistan and Khyber Pakhtunkhwa (KP) were estimated to be vulnerable to this GLOF and subsequent flooding, with 26.7 percent and 22 percent of the population lying below the poverty line.¹¹

In the third and fourth weeks of July, the monsoon shifts further made their presence felt when two precipitation-bearing weather systems – the monsoon rains from eastern and south-eastern regions during the summer, and precipitation from the Mediterranean Sea during the winter – collided over the non-monsoon regions of the Koh-e-Sulaiman and Balochistan mountain

ranges¹² and became a 'monsoon on steroids' in the words of the UN Secretary-General Antonio Guterres.¹³ In other words, the GLOF combined with multiple tracks of monsoon depression, hitting Sindh and Balochistan from July to August, and then heavy rainfall (not associated with the monsoon shifts) again in KP and north-western Balochistan during August.¹⁴ The waters cascading down from these regions washed away vast swathes of areas from Taunsa, Dera Ghazi Khan, Rojhan, Rajanpur, Kashmore, Jaffarabad, Jhal Magsi and places along coastal Balochistan and adjoining districts, killing people and livestock, washing away houses, fields, roads, bridges, dams, weirs, retention walls, schools and hospitals, and displacing millions.¹⁵

Survivors from the districts bordering Sindh waded through chest-deep water, carrying what little they could, and moved towards the Sukkur district.¹⁶ People in the coastal districts were hampered by the almost-complete damage to the road and bridge networks and moved to wherever they could find high ground. Come August, however, there was no respite from the elements as they, along with residents of Sindh, experienced continuous torrential rainfall which, according to the Pakistan Met Department, broke all previous records.¹⁷

The geography of the region exacerbated the situation as water from the incessant rain added to the water accumulated in the plains of Sindh and the increased volume of water inundated large swathes of the province, affecting not only settlements in the low-lying areas but also those which hitherto had not been designated as such. The torrential rain damaged buildings and the accumulated water damaged most houses, schools, health units and related infrastructure to the extent that it became dangerous to take shelter in them.



Survivors moved to wherever they could find high ground

The carrying capacity of two of the major drains in Sindh, such as the incomplete right bank outfall drain and the technically faulty left bank outfall drain, proved woefully inadequate and the backflow inundated many more areas.¹⁸ With the gradient to the sea being barely 10 degrees, the accumulated water was not able to drain on its own into the river and this changed the topography of the central part of Sindh.

The delayed decisions to provide cuts and breaches to relieve the pressure of the water are also widely considered to be less motivated by engineering purposes and more by political factors. This may well be why water continued to inundate parts of Khairpur, Johi, Jhuddo, and Khairpur Nathan Shah even five months after the deluge.

Caught off guard

Johi, Dadu. At midnight on 30 August 2022, Shabbir Khoso and his family were jolted awake by the sound of an explosion. A room had collapsed in their house.

'We were not warned by the government that the floodwater levels would rise so rapidly in our village. Almost all the households in our village of Wada Khan Khoso Goth have lost their belongings,' said Khoso, a 51-year-old farmer. 'Luckily, no one was in the room at that time,' he said, surveying the debris.

Dadu is one of the most affected districts in Pakistan from the recent rains and floods, along with hundreds of villages in Johi, Khairpur Nathan Shah, and Mehar tehsils, which turned into virtual islands. Even by mid-September 2022, the water in these areas lay 8 to 10 feet deep. Government officials say it may take three to six months to drain the water. Boats used for fishing in nearby districts are being used as passenger boats in the submerged districts.

On a visit to Khoso's village via boat in mid-September, he and other residents reported that they did not receive any early flood warnings which could have prevented the widespread loss of lives, property, crops and infrastructure.

'I was terrified that we would drown and our bodies would surface in Manchar Lake,' said Mustafa Lond, a resident of a nearby village in Johi tehsil. He was staying alone at his residence to safeguard his valuables, cattle and solar panels.

'Some villagers, who are part of our extended family, gathered by some houses built at an elevation. We could not get there because of the water. We saved our lives by placing *charpais* (woven beds) one on top of each other and hoisting ourselves onto the structure,' said Lond.

Lond planned to evacuate his family as the water rose but there was no boat to rescue them. 'We were left to fend for ourselves,' He says.

Over the past two decades, Dadu has suffered a series of floods, unlevelled rains and droughts, emerging as one of the most climate crisis-affected regions in the country. In such situations, early weather-risk alerts can save lives.

Mushtaq Ali, a former councillor from Johi, said that it was the government's primary responsibility to make sure that citizens in an area were aware of potential or imminent natural weather threats.

'It gives people a chance to prepare or escape,' said Ali, 'But our government has not learned any lessons from past floods, even after that of 2010.'

In Gilgit-Baltistan, the robust implementation of an early warning system managed to avert the loss of life during the GLOF from the Shishper Glacier in May, allowing people enough time to evacuate.

Similarly, flood warning systems installed by the provincial government in seven locations on the rivers of KP have also worked efficiently, as part of the monsoon contingency plan developed in consultation with key stakeholders.

The province of Sindh did not fare as well.

District officials also admitted to the importance of early warning systems to notify the public of expected flash floods and the failure of embankment defences. 'We know that it is a difficult task to undertake in remote areas within our limited means, but it can save the lives and properties of people to a great degree,' said a district official in Dadu district, who agreed to speak on the condition of anonymity.

'The sensitization of the Sindh government on climate change adaptability is instrumental to disaster risk mitigation,' the official said. He said he hoped that the recent floods would force the government to invest in sophisticated warning systems.

While public focus has been on the rural areas, small towns and peripheral urban areas, bigger cities were also badly affected. Lack of urban planning, municipal failure to keep the drains clear of obstructions, and an appalling failure at solid waste management compounded the problems caused by the unprecedented volume of rain received.

The immediate response

While the meteorology and geology departments played their part, the initial response was slow because the damage was indiscriminate and accessibility difficult due to the collapsed infrastructure. However, when the full scale of the disaster unfolded, and the human impact became apparent, government agencies especially set up for the purpose, such as the NDMA, were found wanting.

Established under the NDMA Act of 2010, the NDMA is the executive arm of the National Disaster Management Commission. The Provincial Disaster Management Authorities (PDMAs), the executive arm of the Provincial Disaster Management Commissions, and the District Disaster Management Authorities (DDMAs) implement the NDMA's instructions at the provincial and district levels.¹⁹

However, the preparedness and delivery systems for disaster management at a local or community level are not clearly laid out. According to a study conducted by World Weather Attribution, 'in an era of community-based disaster risk management (CBDRM) and participatory disaster risk assessments (PDRA), Pakistan's disaster risk paradigm is centralised with limited avenues for hazard or vulnerability mapping to take place at local levels.'²⁰ The study points towards the DDMAs' and PDMAs' limited efficacy since issues such as 'low capacity and limited resource allocation, limited technical expertise in the public sector in a new area, and weak partnerships and convening power with other public sector entities' persist. As a result, these institutions were woefully underprepared, and the government took until August to declare a national emergency.²¹

As soon as the scale of the disaster became apparent, the government called for assistance from other countries and donor and relief agencies. Other than state institutions such as the NDMA, the district administrations, armed forces and paramilitary personnel, philanthropists, individuals as well as charity organisations, civil society and community based organisations also mobilised whatever human and material resource they could muster and became front-line responders for rescue and relief services, which were taking place in tandem.

UN intervention

The United Nations secretary-general visited Pakistan in September 2022 and, horrified at the scale and extent of the damage, issued a flash appeal for humanitarian assistance, which within a few days was enhanced. The UN cluster in Pakistan also swung into action and mobilised their respective partners and approached their partners for donations in cash and kind. These included the United Nations Population Fund (UNFPA), the World Food Programme (WFP), UNICEF and the International Organization for Migration, with the United Nations Office for the Coordination of Humanitarian Affairs playing the convening role, and the United Nations resident coordinator providing oversight of operations.

Damage assessment

While financial assistance from friendly countries was received after initial media coverage reports displayed the full scale of the damage, the scale of the disaster clearly indicated that mere delivery of assistance in various forms would not be enough to protect Pakistan against the long-

term effects of this disaster. Drawing on the NDMA’s final situational report from November 2022, the impact of the floods are illustrated in Tables 1-3.

Table 1: Cumulative flood-related deaths and injuries, 14 June to 18 November 2022

Province/region	Deaths				Injured			
	Males	Females	Children	Total	Males	Females	Children	Total
AJK	31	17	0	48	15	9	0	24
Balochistan	149	80	107	336	97	40	50	187
Gilgit-Baltistan	5	12	6	23	3	0	3	6
ICT	1	0	0	1	0	0	0	0
KP	151	42	116	309	157	79	134	370
Punjab	92	51	80	223	2,173	1,113	572	3,858
Sindh	310	151	338	799	2,964	2,211	3,247	8,422
Total	739	353	647	1,739	5,409	3,452	4,006	12,867

Source: NDMA Floods 2022 SITREP. National Disaster Management Authority. (n.d.). Retrieved 1 February 2023, from <http://web.ndma.gov.pk/>

Table 2: Cumulative flood-related damage to infrastructure, 14 June to 18 November 2022

Province/region	Roads (km)	Bridges	Houses			Livestock
			PD	FD	Total	
AJK	19	33	228	327	555	792
Balochistan	2,222	58	125,837	115,822	241,659	500,000 (est.)
Gilgit-Baltistan	33	61	1,126	667	1,793	609
ICT	-	-	-	-	-	-
KP	1,575	107	53,939	37,525	91,464	21,328
Punjab	877	15	42,127	25,854	67,981	205,106
Sindh	8,389	165	1,168,210	716,819	1,885,029	436,435
Total	13,115	439	1,391,467	897,014	2,288,481	1,164,270

PD = plotted development, FD = flatted development.

Source: NDMA Floods 2022 SITREP. National Disaster Management Authority. (n.d.). Retrieved 1 February 2023, from <http://web.ndma.gov.pk/>

Table 3: Calamity-hit districts and affected populations

Province/region	Calamity-hit notified districts	Affected population
AJK	5	53,700
Balochistan	32	9,182,616
Gilgit-Baltistan	9	51,500
KP	17	4,350,490
Punjab	3	4,844,253
Sindh	24	14,563,770
Total	90	33,046,329

Source: NDMA Floods 2022 SITREP. National Disaster Management Authority. (n.d.). Retrieved 1 February 2023, from <http://web.ndma.gov.pk/>

Alongside the immediate relief and rescue efforts, multilateral agencies started a sectoral raid assessment to assess the damage and estimate the amount of resources required for recovery. Aid agencies, financial institutions and the UN also combined their resources to gather

information. A definitive, consolidated report was compiled that presents a complete needs assessment for damage and recovery (Table 4), and the UN suggested the formation of a donor group at the International Conference on Climate Resilient Pakistan to raise over USD16 billion.²² While this target was not met, over USD8 billion was generated.²³

Table 4: Damage, loss and needs by region

Region	Damage		Loss		Needs	
	PKR bn	USD mn	PKR bn	USD mn	PKR bn	USD mn
Balochistan	349	1,625	541	2,516	491	2,286
KP	201	935	141	658	168	780
Punjab	111	515	122	566	160	746
Sindh	1,948	9,068	2,444	11,376	1,688	7,860
Cross-provincial	587	2,731	14	67	975	4,540
Special regions	7	32	11	49	10	48
Total	3,202	14,906	3,272	15,233	3,493	16,261

Source: Ministry of Planning, Development and Special Initiatives, Government of Pakistan. (n.d.). *Pakistan floods 2022 Post-disaster needs assessment*. Retrieved 25 January 2023, from <https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf>

The Ministry of Planning, Development and Special Initiatives also prepared a framework document titled the Resilient Recovery, Rehabilitation and Reconstruction Framework (4RF) which presented how funds pledged through this conference would be channelled into repairing, restoring and reviving the various sectors impacted by the floods.²⁴

3 The Human Rights Cost of the 2022 Floods

The impact of the floods revealed a multitude of issues, especially given the disproportionate effect such disasters have on already vulnerable groups. While those below the poverty line form the largest subset among the vulnerable, elderly persons, women (especially young girls and pregnant women), children, the sick and persons with disabilities are all affected.

In a country that has been hovering in the top ten bracket on the Climate Risk Index, there has been no proper mapping of hotspots and a lack of early warning systems.²⁵ Most communities also lack the training necessary when it comes to disaster risk reduction and disaster management, such as designated shelters and practice drills. Moreover, Pakistan is prone to hydro disasters more than any other type of disaster. The absence of such services, despite significant investments in setting up institutions, is a violation of the rights to life, safety, health, housing, education and means of livelihood for disaster-hit communities.

The right to life and safety

According to the NDMA, 1,739 people, most of them likely from marginalised groups, lost their lives in the floods.²⁶ While the magnitude of this disaster was unprecedented, a better disaster management system could have saved more lives with early warning systems and early evacuations.



The scale of destruction to buildings meant that many survivors were forced to sit out in the open

In the early days of the floods, people were forced to flee their houses and leave for higher ground, moving to roads, bridges and embankments of rivers and canals. Sitting out in the open

without even a tarpaulin over their heads increased the vulnerability of those displaced, particularly women who had become separated from their own families and clans when moving towards higher ground. This separation became a source of great stress for them since they were not used to being in close proximity to strangers, and without their social safety nets, found it difficult to even go out to relieve themselves. More alarmingly, several instances of harassment and sexual abuse were reported as unscrupulous men lured women away on the pretext of having access to relief and rations.²⁷

The right to health

The accumulated water triggered an outbreak of various illnesses. With high temperatures, a general lack of hygiene, and rotting corpses of dead livestock and waterlogged vegetation all around, flood victims faced a health emergency. Most contracted skin diseases from wading or even swimming through the waters, and the close proximity to each other when seeking shelter from the flood-hit areas meant that this communicable disease spread rapidly.²⁸

Stagnant water also became a breeding ground for mosquitoes, both malaria and dengue. With primary and tertiary health infrastructure in shambles, the number of deaths started to rise.²⁹ There was a scramble to provide mosquito nets to flood victims as they were willing to live without tents but not without nets for themselves – they also required nets for any animals from their livestock they had been able to rescue.



Stagnant water also became a breeding ground for mosquitoes, both malaria and dengue

Waterborne diseases posed a significant threat to health as the stagnant water, filled with contaminants such as human and animal excreta, mixed with the damaged water supply schemes and bores.³⁰ In the absence of adequate water purification tablets and filters, or the means to boil water before drinking, people started to suffer from gastroenteritis and, in some areas, even cholera.

Treating the sick in Hyderabad's tent cities

For a young physician like Dr Saba Dahiri in Hyderabad's tent city, counselling patients was far more crucial than providing them with symptomatic treatment. The settlement shelters a large number of flood victims, predominantly from areas other than Hyderabad.

'I have had to tell patients they do not require intravenous injections, but they insist on these,' Dahiri observed, alluding to the indiscriminate use of such drips by healthcare workers in rural areas.

Hyderabad hosted at least 4,100 internally displaced persons (IDPs) in one of Sindh's largest IDP relief camps, with around another 1,000 residing in buildings elsewhere across the city, according to the district administration. The camp has now been wound up by authorities as families increasingly flock back to their localities, bearing ration bags and availing the facility of transport in some cases.

'Patients claimed they felt energised after receiving a drip,' recalled Dahiri. She stated that the IDPs did not initially suffer ailments. Later, however, major health risks unfolded with the outbreak of malaria amid severe dehydration.

'Counselling them was indeed a difficult job at that point in time,' she continued, 'But once convinced, they followed our advice.' Dahiri added that, if the patient was an expecting mother, extra care was required. 'With 88 expecting mothers among the IDP families, at least seven babies were delivered, including one childbirth in the tent city,' she confirmed.

Dahiri's colleague, senior paediatrician Dr Ziauddin, pointed out that commercially prepared food had caused gastro-related issues among the evacuees. 'The IDPs hailed in large part from rural areas, where they are not accustomed to convenience foods. They typically have meals comprising *lassi* (a yoghurt-based drink) and plain rice,' said Ziauddin. The spice proportions in the food also induced great discomfort. 'We had no option but to keep dispensing the same emergency food,' he admitted.

Ziauddin raised another important point. 'It was fortunate that Hyderabad did not confront a rain calamity of this scale,' he reflected. 'Whatever burden of emergency there was, it was controlled sufficiently by the third week of August. We began receiving an influx of IDPs soon after floods struck upper Sindh, particularly from the hardest-hit areas of Dadu and Jamshoro,' he added.

'Imagine,' he remarked, 'if Hyderabad had had to grapple with the strain of its own locally affected population, coupled with that of other districts.'

'We experienced some difficulties at the outset, as health and administration officials attempted to streamline the arrangements,' said Ziauddin. 'Once the groundwork was completed, we began to feel at home, even within the tent city [while treating patients].' He explained that people belonging to rural areas habitually wake up early. 'Whenever I visited the IDP camp, I found patients ready in queue promptly at 9 AM. This made it easier to attend to them and return to the hospital in time.'

He noted that children in some families were serviced with recommended vaccines in line with their immunisation schedules. 'We cannot say that everything was ideal, but we tried our best to provide them with the best possible services in the camp,' he said.

Dr Parveen Ejaz, another onsite medical specialist, drew attention to the rise in dehydration cases, amplified by heat and humidity. 'We made sure to keep ORS solutions on hand to prevent dehydration among the IDPs,' she said. Insofar as expecting mothers were concerned, Ejaz indicated certain instances where expecting mothers had been unable to visit gynaecologists, even in their own areas, for their first antenatal appointment. 'They were able to avail this opportunity, in unique circumstances, for antenatal care here in the camp,' she said.

Women's health

Limited access to reproductive healthcare was another issue that emerged, requiring urgent action. Some of the early tabulation by UNFPA in the first month after the floods showed that, of the 33 million people affected, there were more than 1.6 million women of reproductive age affected at the time. An estimated 128,000 of these women, aged 15 to 50, were pregnant, and 42,000 births were expected in the next three months.³¹ In the camps set up by the government, and some of the bigger relief facilities organised with other agencies, full-fledged clinics were made functional but traditional cultural barriers created the biggest hurdle in allowing these women access to reproductive help. Many women reported feeling an acute sense of loss of dignity, given the unavoidable proximity to strangers, when needing to access reproductive healthcare.³²



Women reported feeling an acute sense of loss of dignity, given the unavoidable proximity to strangers

Women also suffered a disproportionate impact on their health due to period poverty and lack of menstrual hygiene products. Since there was very little involvement of women in official state relief agencies to cater to such specific needs, feminine hygiene products were not made a part of relief packages.³³ There was even resistance to the insistent advocacy for inclusion of hygiene kits in relief packages sent by civil society members.

The role of addressing 'period poverty' fell to civil society organisations and volunteers. They sourced not just commercial products by approaching relevant companies, but also made and taught others to make sanitary products from cloth to circumvent problems regarding the use and safe disposal of commercial products.

The Swat diaries: Providing relief against the odds

'Hunger and disease due to poverty already exist here; the floods have exacerbated the situation.'

— Hunain, a young doctor, who got on a helicopter to Utror in Kalam and later trekked to Gabral to provide emergency medical care after the flood.

Day 1

1:30 PM. 28 August 2022. It was the fourth day of the flood. My husband came home, looking upset and saying there were no doctors for people in Utror and Gabral and nobody was willing to go. He said the area was disconnected from the city, roads were destroyed and there was no electricity. There was also no certainty that I might return home safely.

I contemplated for a minute and told him I would go. He asked me if I was sure and I was. We had 45 minutes to reach the airport. My husband went to the pharmacy to get the necessary medicines. I packed quickly and we rushed to the airport and managed to get to the helicopter in time. I left behind my two children—a four-year-old girl and a year-and-a-half-old boy.

As I looked down, I saw broken roads, destroyed houses and a raging flood. The engineer in the helicopter asked me, 'Doctor, are you sure of what you are doing and where you are going?' I replied, 'Yes, these people can't reach me and since they need me, I have to reach out to them and I am not looking back.'

4:00 PM. We landed in Utror, a village completely cut off from every facility. We were received by a local medical practitioner. The helicopter went back while we went to the local dispensary.

We examined about 400 patients. I saw all the female patients. What surprised me was that almost every second woman was pregnant. The average family size, they told me, was eight. Most of them were anaemic, malnourished and depressed. These women took care of huge families and also worked in the fields during the day. Now they were seeking shelter along with their children. A single lady health visitor was taking care of a population of 6,000 with a high rate of pregnancy.

These women were living in small houses and those relatives whose houses had been damaged by the flood were living with them. With three to four families living in a single house, contagious diseases were rampant, especially respiratory tract infections and skin diseases.

After we finished with the camp, I was taken up to the house where I was supposed to stay. It was a small room with no electricity, a small bed and a tiny washroom. I was not in contact with my family. The bed was uncomfortable but I tried to sleep. I kept hearing the cries of the women of the family, asking God for help. Their house was at risk of being submerged by floodwater and the men kept an eye on the river so they could vacate the place in time. Hearing all this made my hair stand on end.

Somehow, day 1 ended, even if it meant staying awake all night.

Day 2

After breakfast, I went to the hospital again, where I examined 150 female patients and conducted two local procedures. One was a retro auricular abscess treatment, which I had to drain with a local shaving blade as there was no surgical blade available. The other was the debridement of a wound on the arm of an old man.

After my hospital work, I asked a local practitioner to take me for a walk near the river where the houses were still in danger of being flooded. I saw people working along the river to change the course of the river. I was told that the river had changed course following the flood. That was how so many houses had been swept away. I asked them what caused the flood. They said it had rained incessantly for 16 whole days. On the seventeenth day, the flood claimed their fields, animals and homes.

I met a few girls who started crying. They recalled that, when they were told about the flood, they tried to save their valuables. But they barely managed to save their own lives and they lost everything.

Again, at night, I went to my little bed to sleep but these stories haunted me. That, combined with the fear that the place might be washed away, meant I could not get any sleep.

Day 3

It was a sunny day. The fear of flooding had receded, but the damage caused by the floods was still evident. We were told that a helicopter would come to Gabral that day and I had to reach it in time.

Gabral is about two hours away from Utror under normal conditions. But all the routes were destroyed by the flood, so we had to explore new routes on foot. People warned me that I should not go as it was a tough route, especially for women.

But I had to go, and so, we started our journey—sometimes up mountainsides, sometimes through muddy fields, at other times through rivers. The routes were dangerous and risky and I slipped several times. One time, a nail pierced my shoe. I pulled it out and went on, as we had no time to lose.

We reached Gabral to find a helicopter that had landed about 2–3 km away. We shouted at it, threw clothes for the crew to see us but to no avail. However, I realised Gabral was a beautiful valley. I saw lots of camps there.

There were about 10 to 15 houses; all the others had been swept away by the flood. Three to four families were residing in each camp, with an average of eight children per family. It was astonishing to see how they survived in the open air. The camps were not even proper tents but were made from cloth and stocks.

People in Gabral were worse off than the people of Utror. Big families who had nothing to eat. They were drinking black tea and their children were crying out of hunger. We gave them some relief goods but they were barely enough for one camp. A little child was shivering with a fever. He had pneumonia because of the cold, so we gave him medicines and told his mother to keep him warm. But there was no way they could do that, they were barely surviving.

I must have examined 100 patients there. In one house, there were almost 35 women. Of those, one woman who had active tuberculosis was infecting the whole house as there was no awareness of disease at all. Seeing the situation in Gabral made my heart ache. It is flat land with no houses. People are living in the open air in the cold, with no facilities, food, shelter, medicines or electricity.

Taking the same tough route, we returned to Utror. It was almost dark and I was exhausted. I fell asleep and did not wake up till the morning.

Day 4

The woman in the house told me that they were running out of provisions. They needed food urgently. There was one well that was still safe; everywhere, the floods had contaminated the water. They needed food, shelter and medicine.

We gave a lot of medicines to the local dispensary and to all those patients we had examined. We also gave them clothes and money but it was not enough.

On the fourth day, we were told that a helicopter was coming to Utror to rescue us. We brought with us four pregnant women and a patient suffering trauma. We took them straight to the hospital in Saidu Sharif. I was thrilled to finally see my children again.

The writer is a general surgeon and associate professor at the Saidu College of Dentistry.

Mental health

Another neglected issue that has emerged is the mental and emotional health of flood victims.³⁴ The trauma of seeing their homes, livestock and life savings gone in a flash, and losing their loved ones, has taken a great toll on their mental health, especially on women whose social networks were disrupted after migrating from their hometowns. The inability to process the shock and grief has plunged a large number of them into deep depression. For instance, aid workers and volunteers reported that many children have expressed a fear of the sound of gushing water. Young girls also showed signs of stress living out in the open or even in tents. The trauma of these children needs to be addressed by child psychology specialists or processed

in a healthy, stress-free environment by reconstructing an educational network as soon as possible.

While the rest of the state's response to this issue remains to be seen, the Government of Sindh has at least set up a mental health authority that deputes doctors to assess and refer patients that need medical interventions at flood relief camps to tertiary care hospitals.³⁵

'I keep reliving the incident': Trauma after the flood

Thirty-two-year-old Romana hails from a working-class family in a remote area of Gilgit-Baltistan. She fled her house with two of her three children when flash floods hit her village after heavy rains in August 2022. 'I was screaming for my son, who was not at home at the time. Everyone around me was shouting and running for their lives. The last thing I remember is my home in muddy black water. Dozens of houses in our neighbourhood drowned in front of us, but we were helpless. We couldn't save any of our belongings. I lost consciousness and came to an IDP camp. An hour later, I discovered my son had survived, thank God. But I keep reliving the incident.'

Gilgit-Baltistan is no stranger to extreme weather events—including snowstorms, heat waves, flash floods, and glacial lake outburst floods—and its vulnerability to these has been compounded by accelerating climate change. The recent record rains between June and August 2022 have left hundreds of families in the area homeless. Besides the physical and financial losses that people have had to contend with, survivors have to deal with the mental trauma that is scarcely documented.

In Gilgit-Baltistan, where civil society activists have already identified a link between mental health and the reported rise in suicide, there are no mechanisms or services that cater to the trauma of internally displaced persons.

Romana says she cannot sleep: she has constant nightmares of the flood. 'Even when I hear the sound of a vehicle, I find myself growing anxious and looking for a way to escape. My appetite has shrunk. I feel as though I don't need to eat. I can't bring myself to care about my children. I feel guilty, wondering if I am being punished by unseen forces.'

Romana's husband used to run a small shop in the village until it was swept away by the flood. Although the family survived, they have been living in an IDP camp for the last two months, despite promises of rehabilitation by the government.

Dr Farzana Ali, the only psychiatrist deputed to a district headquarter hospital in Gilgit-Baltistan, explains that exposure to a traumatic event such as this can give rise to several psychological disorders, including depression, anxiety, adjustment disorders, sleep disorders, and behavioural problems, which leaves them more vulnerable to substance abuse and suicide attempts. Specifically, she says, post-traumatic stress disorder (PTSD) is linked to a catastrophic or life-threatening incident. 'Patients suffer persistent and vivid flashbacks or recurring dreams. They may be unable to recall parts of the event altogether and find it impossible to function normally.' She estimates that 8–13 percent of males and 20–30 percent of females are vulnerable to PTSD. In 40 percent of cases, she says, the illness can become chronic.

PTSD is treatable through cognitive behavioural therapy, eye-movement desensitization and reprocessing, and pharmaceutical drugs on the prescription of authorized doctors. However, Gilgit-Baltistan's poorly equipped hospitals can do little to help PTSD survivors without a concerted effort by the government to establish a mental health infrastructure, including mobile services that can reach and service IDP camps.

Until then, women like Romana will likely bear the scars of their trauma for years.

** Names changed to protect people's anonymity.*

Nutritional needs

Food security was directly affected when assets such as livestock and poultry were washed away, crops, cash and food destroyed, and water sources contaminated. According to the WFP's estimates in October 2022, the number of flood victims requiring emergency food assistance is expected to increase to 14.6 million people from December to March 2023.³⁶

The right to livelihood

Asset security

A near-breakdown of law and order occurred in many places: assets, fixtures and even livestock were stolen from houses that had been damaged. This was a major reason that people who stayed back in their crumbling homes, surrounded by flood water, were killed: they feared losing their assets if they left.³⁷

Rebuilding when the water recedes or is cleared out through pumping means having to start from scratch, which requires a bigger chunk of financial assistance. Desperate to save these assets, many flood victims risked their lives or their family members' lives to stay behind, and could not be rescued in time.

Agriculture and livestock losses

With Pakistan predominantly being an agrarian economy, the biggest impact of the floods has been that the standing crop was washed away.³⁸ Shifts in weather patterns earlier in the year had already compromised the yield and quality of wheat, but the country then faced a wheat shortfall due to inequities in water distribution: in April, when the southern part of Pakistan had completed the wheat cycle and the land was being prepared for the next crop, the water was not allowed to flow to these lands as it was being stored in the dams. The fact that there was plenty of opportunity for these dams to be filled by the forecasted glacial melt and increased volume of rain was overlooked.

This resulted in farmers suffering losses that were exacerbated by the deluge that wiped out the wheat and cotton crop, triggering fears of food and economic insecurity. The loss of the date crop in Sindh's Khairpur district, one of the hardest hit, brought similar difficulties.³⁹ While the water has started receding slowly, the loss of the topsoil, as well as the degradation of the soil due to waterlogging, has grave implications for the next season. In districts, especially in Sindh where at least three agricultural districts remain under water, the process of recovery is still uncertain.⁴⁰

When recovery and assistance packages were announced by the government, such as the Kisaan Package, there was widespread criticism from the agricultural community about the disparity in offering loans to farmers and subsidies to large agribusinesses such as pesticide and fertiliser manufacturers.⁴¹ Many medium to small farmers are already caught in a debt trap and this would further compromise their ability to recover their losses if they are burdened with loans.

Buried livelihoods in Punjab

30 kilometres from Basti Gaadi's *kachhi* canal in Dera Ghazi Khan, Shehzad Hameed Lund narrates the story of how his family and other residents of their village lost everything in the flood: they not only lost their homes, but also their cattle and crops.

Roads and other infrastructure were swept away in the torrent of water coming from the Koh-i-Suleman mountain range. This water carried with it sand, silt and other sediments. Shehzad states that most of the land where they had cultivated cotton, rice, sesame, pulses, beans and sugarcane are now submerged under three to four feet of sand due to the floodwater.

'I have not seen such water carrying sand, silt and other sediments destroy crops like this before. In the past, floodwater stood at four to five feet, and it would drain after a month. But this time, the land and crops were buried under sand. Even my tractor, which was parked under the shed, was covered in so much sand that we could not drive it. Some of the houses in the village were buried under the sand as well, up till their *roshandan* [skylights].'

The sand left behind by the floodwater has damaged the land's arability—Shehzad and his family cannot cultivate crops on it for the next 10 to 15 years. The water also eroded the land significantly, leaving five- to six-foot trenches in its wake, forming small channels and eroding away the topsoil. Shehzad says, 'Our crops include cotton, rice, fodder, vegetables and beans, and span thousands of acres. Now, almost all those crops have been washed away, and the land is buried under the sand. The fields where rice was sown has been devastated. We will have to work hard to develop this land into agricultural land.'

Different crops have been cultivated on 375,171 acres in districts Dera Ghazi Khan and Rajanpur over the years. Farmers in these districts report widespread devastation of crops due to the floods, with cotton fields spanning 176,012 acres completely destroyed in both districts, as well as 53,532 acres of paddy, 21,784 acres of sesame and pulses, 28,272 acres of sugarcane, and 77,556 acres of fodder. The floods also demolished around 24,794 houses in 179 villages.⁴²

In Dera Ghazi Khan, 342 villages and 80 union councils have been submerged, directly affecting 699,502 people, and damaging over 1.4 million acres of agricultural land and 58,593 houses. Rajanpur fares no better, with 158 villages submerged, affecting nearly 100,000 people and damaging 309,000 acres of agricultural land. Taking the accumulated impact of the floods in these districts together, 458 schools, 18 hospitals, 912,423 acres of land and 36,000 houses are damaged, and 60 people have lost their lives.⁴³

As of now, the government has established 27 relief camps, 48 medical and 55 veterinary camps and 564 health teams to provide health facilities to the people.⁴⁴ In Rajanpur, 438 rescuers using 81 boats are also actively providing aid in the affected areas. However, Shehzad points to the loss in land, houses and cattle that his village has sustained, saying that they cannot recover from these losses without help from the government. Long-term rehabilitation must also be facilitated and, according to Shehzad, the government should provide subsidies on fertilisers and diesel, waive water tax and tube-well electricity bills, and provide seeds free of cost to help them continue farming.

Sindh's summer of misery

Nawabshah, Sindh. September 2022. Aamir Khaskheli is worried about his future. The recent torrential rains and flood have not only damaged his house, but also inundated his five-acre farmland where the cotton crop stood, ready to harvest.

'The rain was unlike anything I have seen in my life. It pounded our area for over 50 hours and destroyed everything, including the cotton fields on the verge of harvest season,' says Khaskheli, a 44-year-old farmworker from Sathh Meel in Nawabshah, one of the largest cotton-producing districts in Sindh.

He is one of the millions of tenant farmers who have been affected, losing swathes of agricultural lands to the record-shattering floods that swept across Pakistan. He owes PKR120,000 to his landlord whose field he cultivates every year as part of the sharecropping system that prevails in much of rural Pakistan.

'Now I have to pay it back,' says Khaskheli, who depends solely on his income from farming to feed his family of five.

In Sindh, farmers ordinarily grow two kinds of produce. Every autumn, they harvest cotton or rice, and around late October or November, they begin planting wheat. According to the Sindh Abadgar Board, a body of agricultural landowners based in Hyderabad, 70 percent of the summer (*kharif*) crops prepared for harvest were wiped out; 90 percent of cotton, dates, onions, tomatoes and other vegetables were washed away between July and August 2022. Banana orchards in the area sustained considerable damage. The body also feared that the standard acreage of wheat would not be achieved.

'Cotton is our cash crop. The money we get after selling the crop and paying off our loans is used to pay bills for healthcare and electricity, and to buy other essential commodities,' says Khaskheli. Wheat, on the other hand, is their staple food. 'We use it for the entire year,' he says.

But he will be unable to till wheat this year, since the deluge water will take months to recede. 'Our wheat crops are in ruins too,' said Khaskheli, whose land remained submerged in four to five feet of water in mid-September. Farmers' leaders say that the widespread devastation of crops has cost them millions of rupees.

'The majority of farmers have been pushed into chronic poverty. Farm labourers are already reeling under debt with loans acquired from landlords, or from high-interest rate sellers offering farm inputs such as seeds, pesticides, and fertilisers,' says Akram Khaskheli, leader of the Hari Welfare Association, a farmers' rights collective in Nawabshah.

He says that the big landowners will likely survive the floods, but tens of thousands of smaller landowners and farmers, most of whom are trapped in forced labour through debt bondage, face immense hardship. He also says that the farmers are unlikely to receive any assistance from the government.

Aamir Khaskheli now plans to migrate permanently to Karachi or Hyderabad, two of Sindh's major urban centres, to find a job. 'Farming has become more and more difficult by the day because of the uncertainty of climate. Sometimes, there will be 50 hours' worth of continuous rain showers, or there will be a dry spell for years,' he says.

'The rising temperatures have also added to our miseries,' says Khaskheli. In April 2018, Nawabshah witnessed a record-high temperature of 50.2 degrees Celsius—the highest temperature ever recorded in the world for that month.⁴⁵

'I can earn more money by driving a rickshaw in Karachi than farming,' he concludes.

** Names changed to protect people's anonymity.*

The right to education

The floods damaged nearly 27,000 schools and severely disrupted the country's educational infrastructure.⁴⁶ Schools that were left standing were converted into temporary shelters, preventing children from resuming their education even in places where the water has receded.

While alternative learning systems have been put in place at formal campsites,⁴⁷ this is only a short-term solution. Displaced persons who had moved to safer areas or had sent their women and children there, ran into problems when trying to get their children admitted to schools as they did not have the necessary registration documents.

Opportunities for sports and recreational activities for children also became severely limited along with their access to formal education. Sites where children were camped did not provide any such outlets and instead cloistered families together for the sake of their safety. These factors imply that children are one of the most neglected segments of the population affected by the floods.

The right to housing

The restoration of damaged infrastructure is the most difficult, time-consuming and expensive task, and yet the most urgent when it comes to rehabilitation. Approximately 780,000 houses were destroyed in 94 calamity-hit districts, and more than 1.27 million houses were partially damaged. Housing in Sindh has been the worst affected among all the provinces, accounting for 83 percent of total housing damages. Overall, Pakistan has sustained PKR1,200 billion in damages to housing, and PKR137 billion in house losses.⁴⁸ The houses that have suffered the most damage are those owned by impoverished families, specifically poor small farmers in rural areas and low-income workers in small towns, who cannot afford good construction in a safe location.



The remnants of people's crumbled homes in a village in KP

This is where the lack of climate justice unpacks itself in all its intensity: the domino effects of the loss of housing are increased exposure to the elements, bringing health hazards, and loss of access to potable water and sanitation. Most of the flood-affected people were already living on meagre incomes with little or no savings to cushion them against such shocks, so the prospect of rebuilding seems remote to them. In areas where water has started to recede and the remnants of their crumbled homes are visible, many are living there by pitching their tents on their plot so it is not taken over by unscrupulous elements who profit off other people's misery. However, they still have no access to water, sanitation and health facilities, and have to heed the call of nature in adjoining plots, with women venturing out only after dark due to lack of privacy.⁴⁹ Flood victims who have managed to get out of the flooded areas have moved to towns to seek shelter with their relatives, mostly daily-wage workers or domestic workers earning low incomes. Focused on survival after losing their means of livelihood, their stay with relatives has added to the economic vulnerability of their hosts as well.



Most flood survivors were already living on meagre incomes with little or no savings to cushion them against such shocks

In disaster response management, the reconstruction phase comes lower down the priority list and costs the most. In the case of a disaster of the magnitude Pakistan is grappling with, which requires relief over a long stretch of time, donor fatigue sets in by the time this important long-term phase is activated. The needs assessment figures are indicative of how difficult it is to come up with the kind of financial resources required to rebuild. Here too, the task has been kickstarted through private donations, but the target has barely been met. Almost six months after the floods, there are still millions under open skies. With the onset of winter, there is a sense of urgency in providing flood victims with a roof over their heads and a space they can call their own. Most interventions can, at best, fall under the category of shelter rather than proper housing.

Homeless in Nushki

Like others in Balochistan, it had been Yousaf Mengal's dream to live with his family in a house of his own. He had worked hard his entire life to make his dream come true, even working at a scrap shop at one point in Nushki, a district 140 km southwest of Quetta, bordering Afghanistan.

Ten years ago, Yousaf opened his own business in a bazaar in Nushki. He was the sole breadwinner of a large family that included two brothers with disabilities, a sister and six children of his own. He started selling old shoes on a push cart, which is how he kept his family fed. However, this was barely enough to pay rent and subsist at the same time. As it got more and more difficult to make ends meet, he became a daily-wage labourer, constructing mud houses in and around Nushki.

'After working for over ten years, I was finally able to build a mud house of my own in Qaziabad in Nushki,' he reminisces. 'It had just become ready [when the rains hit]. My entire family, including my children, had moved there.'

The 2,000-square-foot house had two rooms, a kitchen and four walls. Yousaf had been gifted the land by a local notable, Haji Badal Khan in Qaziabad, where there are mostly mud and concrete houses.

Unfortunately, Nushki was one of the first places in the province to be hit by the torrential rains and floods. 'The rains did not abate,' Yousaf recalls, 'so we prayed. Maybe the prayers worked, because at least no one from my family was injured. As for the house, the rains and floods turned it into rubble. Luckily, I had already shifted my children elsewhere. If I hadn't, we would have been buried under the rubble.'

'Do you know how much time it took us to build that house?' After a brief pause, he responds to his own question ruefully, 'One year!'

According to the district administration of Nushki, the floods and torrential rains have damaged 3,500 houses. Adding to that, the number of houses damaged in the entire province have exceeded 100,000. What is even more unfortunate is that these figures do not just represent the number of houses affected, but the number of families. Yousaf's family is just one of hundreds of thousands of families who have been left homeless.

After the floods wreaked havoc in his province, Yousaf was provided food rations and a tent by the PDMA. He says he could not live with his family in the tent, so he moved to the same house he had rented before his own house was built.

'I pay PKR5,000 for it every month,' he says, concluding his story. 'Once again, I have started selling old shoes like I used to ten years ago. Once again, I live in the same house. I stand where I stood ten years ago. Once again, I have to start from scratch to escape poverty.'

The difference now is that Yousaf lacks even a push cart to sell old shoes in the bazaar of Nushki.

In the grip of the flood: A neighbourhood in urban Swat

In Bangladesh, a neighbourhood in Mingora, the memory of the flood is etched on walls bearing watermarks. It is early October [2022]. At places, the flood mark is as high as 7 feet, and weeks after the horror has receded, the streets still exude a vague smell of damp.

A video went viral on social media of brown water charging through the streets in Bangladesh, cars washed away by a rapid, surging torrent like a dam burst. Somewhere among images of the flood was one of a little girl of six, dead, her body bloated from the water. Sana was the child of an Afghan refugee family that had come to live in Swat in the wake of the Afghan war of the 1980s.

On the day of the flood in late August, Sana's father was at work and she was at home with her mother. It was morning and flood warnings blared from mosque loudspeakers all around them. Schools were shut down in an emergency and people fled to safety.

Her mother was preparing milk for her as an empty plot behind their house filled with floodwater. Bearing down on their wall, which finally broke down, the water surged into the house with all the crushing intensity of a deluge. The mother was knocked out by the force of the flood and by the time she came around, Sana was nowhere to be seen. Later that day, as rescue workers dived around the submerged house, her father insisted they look outside in streets inundated by murky water. Early next morning, word came from Odigram, a town roughly 9 km from Mingora, of local people having found the body of a drowned girl, surprisingly unbruised, the glass bangles on her wrist still intact despite the crush of the floodwater.

Bangladesh is part of the old congested heart of Swat. Inside Mingora, it is encircled by the city's *khwar*, part of a complex network of water channels throughout the hilly Malakand Division that cut through villages and towns, feeding the river with meltwater to irrigate the fields.

Well up to the 1990s, before it became Bangladesh, the neighbourhood was a wide stretch of fields, irrigated by the *khwar*, as wide as 100 m back then, according to resident Humayun Masud. As people encroached on the land, the *khwar* in Bangladesh was trapped in a narrow canal of about 10 m. Whenever it rained, floodwater would inundate the neighbourhood and, in time, the neighbourhood came to be known as 'Bangladesh'. This year, where the river destroyed the hotels, houses and markets built along its banks, *khwar*s all over Swat channelled the flood's fury towards villages and fields. And so it was with Bangladesh, where the bed of the *khwar* holds piles of cast-off clothes, mattresses and bedding. The bed was deepened after the devastating floods of 2010, but the flood this time around, say the residents of Bangladesh, was more than it could contain.

Nadeem Charagh, a labourer and poet, whose house faces the *khwar*, should be worried about a dangerously sagging roof but speaks of his soaked books instead. On the day of the flood, he was away, working in the neighbouring district of Mardan. When floodwater entered the house, his wife fled with their three children, reaching for rescue in a high building next door. The house, old and from a time when roofs were built of logs and straw, is falling apart. 'I know we need to move out but I don't have the resources to rent another place,' says Charagh, who is locally employed these days, helping rebuild houses that others have lost to the flood. His own was buried under sand and water. Later, they dug up utensils from under the mud and sand. Local people helped clear the house; seminary students and community organisations were the first to bring them cooked food.

When Charagh asks for the wall containing the *khwar* to be raised to contain floods in future, he puts the protection of the community before his own. The flood may have passed but not the danger posed by a broken roof, a roof he cannot fix for want of money, nor can he move to a safer house.

Beyond the walls of the *khwar* and the threat of recurring floods, beyond years of militancy always threatening to resurface, beyond the pandemic, it is the worsening poverty and the state's indifference to the predicament of the poor that diminishes their dignity and capacity, whether here in the urban settlement of Bangladesh or out in rural Swat.

4 Moving Towards Climate Justice

In December 2022, HRCP held a high-profile roundtable with policymakers, representatives from disaster management authorities, climate activists, environmental experts, public health experts and civil society organisations to discuss the following:

- How climate change-induced disasters, such as the recent floods, have a direct impact on the rights of the most disadvantaged and vulnerable, and to assess whether a new social contract between citizens and the state could be forged in the context of climate justice.
- The effective evacuation and rescue of affected persons during climate disasters, such that their safety, privacy and dignity are ensured
- The equitable provision of emergency relief and medical aid to affected persons, especially children, pregnant women, the sick and the elderly
- The rehabilitation of affected persons through the provision of climate-resilient housing and infrastructure, as well as their compensation for the loss of means of livelihood
- Mitigating the dangers to public health and water/food scarcity arising from climate emergencies such as smog and droughts
- The development of post-carbon policies that ensures a control on emissions, a move to renewable energy systems, and the protection of blue-carbon habitats such as mangroves and other natural ecosystems.

The participants of the roundtable were encouraged to propose solutions, both immediate and long-term, to Pakistan's climate crisis, and envision the role of the state, parliament and civil society in those solutions. Baba Jan, a climate activist and prominent human rights defender from Gilgit-Baltistan, pointed out that the consequences of flooding in the mountainous regions are different from the consequences of flooding in the plains, since regions such as Gilgit-Baltistan face not only excess water but also landslides that can threaten entire settlements and villages. He also emphasised that the current climate crisis concerns the right to life and sustainability of future generations, and must be treated as such.

Former chair of the NDMA and national advisor at the Asian Disaster Preparedness Centre, Lt Gen (R) Nadeem Ahmad emphasised that the provision of food, shelter, water for sanitation and healthcare must take priority during emergency responses, with later measures for reconstruction and rehabilitation being people-centric. This includes housing and means of livelihood such as agriculture and livestock. He also pointed out that disaster risk reduction must be included in all development projects, along with regulations that prohibit the construction of buildings and infrastructure in areas vulnerable to flooding. Safety regulations must be a human rights concern instead of prioritising economic considerations.

Seemee Ezdi, the chairperson of the Senate's standing committee on climate change, noted that local governance is essential to affect change at a grassroots level. She also pointed out how the changing patterns of the climate is one of the biggest threats to mankind, with droughts being followed by floods. Any decision involving climate change must involve the community to make it work, particularly women who are the most affected by climate disasters. For example, the NDMA must work with the PDMAs, and provincial level bodies must work with district-level management which should work with communities and local bodies.

Shahid Sayeed Khan, chief executive of the Indus Earth Trust and development architect, highlighted the importance of short-term solutions to address the psychological trauma of affected persons, and proposed that the provision of housing and shelter to affected persons

must be replaced with the provision of 'homes'. This change in terminology, he said, would shift the attitude to that provision as well. He also noted that the likelihood of such a disaster happening again is very high, and that Pakistan must provide and implement permanent solutions.

Meena Gabeena, a humanitarian activist, reflected on the need to analyse climate change from a class perspective as well, pointing out that those who are not as affected by these disasters as vulnerable groups end up making policies that are ineffective. She also stressed on the need to include younger activists and professionals at the policymaking stage since Pakistan's future generations are affected the most by climate change. Muhammad Khalil from the Population Council added that population planning and management must be factored in the discussion. He recommended the use of technology and technical resources such as GIS mapping, citing the Population Council's work in using satellite imagery to create maps for the 2022 floods with disaggregated data at the district and tehsil level.



HRCP's roundtable sought to identify how climate change-induced disasters affect the rights of the most disadvantaged and vulnerable

Brig (R) Dr Fiaz Hussain Shah, an academic and former NDMA director-general, said that a long-term solution is only possible when the international accords Pakistan has agreed to are integrated, without which the country cannot guarantee the preservation of human rights during such disasters. In his experience, there was no government machinery active in the first four weeks of the disaster, and there is a glaring lack of action towards climate resilience or adaptation on the part of the state. The Planning Commission, NDMA and ministry for climate change must work closely together, with a uniform conceptual framework and coordinated mitigation strategies. He also emphasised that the phenomenon of climate change is anthropogenic and must be distinguished from climate variability, such as changes in seasons. According to him, the consequences of climate change have a significant impact on human rights, contributing as it does to insecurity of water, food, health and energy.

Zofeen T. Ebrahim, an environmental journalist, pointed out that climate justice and the need for reparations exists at the national level as well as international level. While policies and regulations that exist must be implemented, civic responsibility must also be acknowledged. For

example, the owners of the hotel in Swat that collapsed during the floods were well aware that construction was prohibited in that area. Development projects in the northern areas of Pakistan, where forests are being razed to construct hotels on hill tops in violation of regulations, are also taking place, which further increases Pakistan's vulnerability to such disasters.



For flood survivors like this man in Balochistan, the provision of food, shelter, water for sanitation and healthcare must take priority during emergency responses

Kashmala Kakakhel, a climate finance specialist, emphasised that climate change was a human rights issue because certain countries were not held accountable for generating a disproportionate volume of emissions. Aasim Sajjad, president of the Awami Workers Party (Punjab), said that the climate crisis is not just about global emissions; capitalism, which has a local nexus, must be considered as well, such as Pakistan's aggressive urban expansionism. It must be thought of as a systemic totality, particularly in light of donor-funded construction projects of infrastructure that are based in imperial engineering science and local businesses with vested financial interests. Even though Pakistan's carbon emissions are 0.9 percent, this has increased exponentially over the past 20 years from 0.3 percent due to the building of roads and sale of cheap cars with poor fuel consumption.

Zaigham Abbas, an academic and the Pakistan head of the Asian People's Movement on Debt and Development, recalled an exchange with a local shepherd during a 2020 protest in Gilgit-Baltistan against the development of a national park to emphasise that indigenous knowledge systems of ecological resilience pre-exist. Saif Jamali from the Jinnah Institute highlighted that local responsiveness is embedded in the devolution of power to local bodies, and that civic societies, which have been facing a persistent clampdown by the state, have population data for vulnerable areas, which is crucial. Community responses to disaster relief must also be expanded to allow vernacular wisdom to be at the forefront.

Ahmad Rafay Alam, a prominent environmental lawyer and climate activist, said that ensuring local climate justice depends on provincial responsibility and governance. Irrigation, agriculture, transportation and energy are all provincial subjects, and we must initiate policy dialogues on the provincial level on these subjects, particularly in Punjab where there is an absence of climate adaptation measures. Sherry Rehman, federal minister for climate change, concluded the roundtable by noting the intrinsic relationship between human rights and environmental rights, and how every conflict and crisis affects the vulnerable the most, such as women and children in the recent floods. She highlighted the need for cultural acceptance and awareness at every level, individual and institutional, of climate change. Science-based expertise is especially necessary when rebuilding with resilience, and must take the lead with policies that connect to on-ground realities to foster literacy of climate change. She further emphasised that while climate projects must be run by provincial and local bodies, Pakistan urgently needs a national climate adaptation plan.

'We had to spend the night sitting on tree branches': Rising waters in Punjab

On the evening of 14 August 2022, the government and district administration officials of Dera Ghazi Khan's Changwaniwala tehsil announced on the mosque loudspeakers that floodwater in the *kachhi* canal was rising and that people must evacuate. After hearing this announcement, 60-year-old Zafar Ahmad went to his widowed daughter's house, where she lived with her two children, to urge them to leave. However, his daughter and her children refused, believing the flood would not reach their house.

In the early hours of 15 August, Zafar received a phone call saying that the bank of the canal had been breached. He rushed to his daughter's house from his home in Shadan Lund to save her and his grandchildren. On his way, he saw people running from their homes and rescue officials evacuating villagers in boats. The road was submerged under four to five feet of water, but Zafar eventually reached his daughter's house.

'We had to spend the night sitting on tree branches. It was too dangerous for us to leave the trees since the floodwater rose to six or seven feet, with the water rushing down in torrents from the Koh-i-Suleman mountains. The water was also carrying heavy sand, and we witnessed 30 houses in the *basti* vanish under the sand, burying people and their belongings,' he says.

Zafar estimates that the flow at that time was about 250 km per hour; when the speed of the current slowed down in the morning, he climbed down from the tree, carrying his grandson on his shoulders. Eventually, a rescue boat found them and they managed to return to Zafar's house in Shadan Lund. The family now lives in a camp near Basti Bakhwala in Kochha Kakari. Over 1,000 houses in around 20 to 30 villages were also lost to the floods in this area.

Zafar says he has not witnessed a flood of this scale ever before and recalls his grandparents narrating stories of a flood in the 1950s that also ravaged the village. Zafar's grandson, Muhammad Sohail, who is studying in Class 5, remembers how afraid he was when he heard the sound of the water rising in and around their house and says that his grandfather managed to save the family just in time.

Zafar's daughter and her children lost a three-room house, six acres of land, two cows and two goats in the flood. The sand and other sediment brought in with the floodwater submerged a 25–30-kilometre road starting from Kala Colony and ending at Basti Gaadi.

The villages affected by floodwater in Dera Ghazi Khan include Hota Hotwani, Gajwani, basti Kochha Kakari, Pat Ghazzi, Wisakhwala, Ghazi Wala, Wasti Chohrani, Bakhwala, Gharwani, Dhoorwala, Chah Gulzar Wala, Kamal Wala, Musa Wala, Darkhan Wala, Kumhar Wala and Sumandri Wala.

Ingarabad, Swat: An essay in destruction

On the night of the flood in late August 2022, Nisar Begum stayed up, awake and alert, rising every few minutes to check on the *khwar* [water channel] that runs by her village. It had been raining incessantly for five days. That night, a fierce storm broke, hammering down on the houses below. As her children slept, she prayed they would be spared the fury of the flood. Then she heard a crack, like a lightning bolt, followed by a roar and she knew the flooded *khwar* had broken the surge barrier. She ran out onto the street, calling for help.

It is now early October. She sits by the ruins of her house, in a tent pitched in Ingarabad, a village in Madyan where the flood has washed away 120 houses. After they lost their first house to the floods in 2010, Nisar Begum's late husband had built another—one that is now full of silt, its upper floor missing, the lower badly damaged. She and her eight children have only a tent to live in, where the air is stale and smells of sweat. 'We have food and bedding but no shelter,' she says. 'There's talk we will be given PKR200,000–500,000 for damaged property, but can you even build a house with that?' she asks.

Ingarabad is an essay in destruction. There are tents pitched in rows. Its residents are busy clearing away the mounds of silt that have taken over their homes and their lives; others rummage around abandoned houses to rescue belongings. This used to be a place with picnic spots that the locals would proudly publicise on social media. 'This was where tired people came to rest,' says one resident.

Apart from washing away settlements, the flood has crippled the local economy. Above Madyan is Bahrain where the local market, one of the biggest in upper Swat, lies in ruins, a haunt for strays. Further up, the road to Kalam is rubble; the three-hour journey from Mingora to Utror now takes 12 hours. Remote villages in the upper valleys, among the worst affected of the settlements, are virtually inaccessible by land, phone or internet. The canal irrigation system is wrecked, as are 43 bridges on the Swat River, according to Deputy Assistant Commissioner Sohail Ahmad Khan.

This is the cultivation season for vegetables, local produce that helps meet national and international demand. The flood has ravaged agriculture alongside the hospitality industry and fish farming. In the wake of the flood, stagflation—spiralling prices but little economic activity—prevails, leading to food insecurity, especially among women and children already struggling with malnutrition.

'The worst affected are those from Madyan through Kalam and the upper valleys, with hardly any source of income but who rely on subsistence agriculture,' says Dr Tanveerullah at the Civil Hospital in Madyan. 'Children and women are anaemic, especially women. Malnutrition is rife. More and more patients are turning up with gastroenteritis, malaria, typhoid, scabies and now, with the onset of winter, chest infections.'

Given the history of flash floods in the region, people fear it may become an annual phenomenon—for which the district's institutions are ill prepared. While the government's rescue efforts have been timely and extensive, its capacity for relief and rehabilitation is anything but.

For nearly 25 days at the peak of relief efforts, there was no internet connection in upper Swat, with authorities giving no reason for the disconnection.

Inevitably, women are among the worst affected. In Madyan in the first week of October, about 50 women from villages in upper Swat gathered in a garden at the Civil Hospital, where an authorised agent of the Benazir Income Support Programme (BISP) had brought them to distribute special flood packages of PKR25,000. The agent had been bringing BISP beneficiaries to the hospital garden for several days, where they would sit patiently for hours as he completed the process online. On that particular day, the hospital's Wi-Fi connection failed to work. A community member came to the rescue, agreeing to provide internet access through his own connection.

The lack of internet connectivity has had other consequences too. Many men from the area, who work as labourers in the Gulf countries, had little contact with their families during the worst of the crisis. A young woman in Matta tehsil found out about the death of her husband abroad after six days, only when they brought his body home.

'We don't even have two meals a day for ourselves now, let alone the animals'

Given the lack of economic opportunities in Balochistan, a significant population depends on livestock for their livelihood. But the floods have wrested even this away from them.

Gul Hasan Jamali's family is among the affected in Gandakha tehsil in the district of Jaffarabad. He used to have a dairy farm, where he had 18 goats and sheep along with seven cows and two bulls.

A father of six, he had cultivated around two acres of land in front of his mud house to grow crops as well as grass for his animals. However, chaos broke out when his hometown was hit by torrential rains, killing most of his animals. 'Other than two cows and a few goats, I do not have anything now,' he says woefully. 'The animals that survived do not have grass to eat because our entire town is under water.'

Nasirabad, located in eastern Balochistan and known as its green belt, has been severely affected by the floods. Within Nasirabad, Gandakha is one of the worst affected towns. The assistant commissioner, Sagar Kumar, says that Gandakha has been cut off from the rest of the province. Several parts are still submerged under water, forcing many residents to set up tents by the side of the main road.

Gul Hasan, too, has become an internally displaced person within his hometown. He has moved into a camp, along with his family and a few goats and cows. He appears helpless as he speaks about their living conditions. 'We don't even have two meals a day for ourselves now, let alone the animals,' he points out, adding that there is no end in sight to their misery.

Before the floods wreaked havoc in his town, Gul Hasan's livestock were an important source of livelihood. 'They used to feed my entire family, but now I cannot feed them. They have been left to die because they have no grass to feed on,' he says, adding, 'No one, including the local administration, has come to our aid. We have been left at the mercy of Allah.'

Mir Khan Jamali, a notable in Gandakha, says there is no dearth of farmers such as Gul Hasan who have lost their livestock in the floods. 'There are animal corpses everywhere,' he notes. Reports from the PDMA put the loss of livestock washed away by the floods at an approximate figure of 500,000.

Back at the camp, Gul Hasan is disappointed in the efforts of the government and other charity organisations to provide relief and assistance to flood-affected people. They have been overlooked and ignored, he says. Gul Hasan does not even want to ask them for help.

His only hope is in God, he says. 'I firmly believe that my Allah will pull me out of this hardship. He will help me back on my feet once again, as he has always done.'

5 Recommendations

Governance

The consensus is that the absence of an efficient governance structure is a fundamental reason for why a natural meteorological event quickly becomes a disaster of epic proportions. These failures cannot be laid at the doorstep of climate change; they boil down to a failure of planning, implementation, resource rationalisation, and readiness of response, which all fall within the bracket of governance, and are especially reminiscent of the inadequacies seen during the 2010 super-floods in the Indus River.

The institutions put in place after the 2005 earthquake and 2010 floods must be made to function according to the structure envisaged when they were formed. Disaster management cannot be carried out efficiently until local bodies and district-level bodies are made functional for an immediate and coordinated response framework. There is also very little focus on disaster risk reduction, which leads to the seemingly knee-jerk disaster management as a response mechanism.⁵⁰ Detailed plans exist for flood control,⁵¹ but in the event of disasters, we do not see them come into play, as pointed out by a judicial commission's report after the large-scale havoc caused by the 2010 floods.

One glaring gap that emerged was that, when the government announced assistance through the BISP's Ehsaas card, it was realised that the gender gap had not been bridged – despite the lessons learnt from the 2010 floods. While the attention on relief efforts had spurred a wide-scale registration drive, this had then petered out, leaving a large number of women that were to be registered after 2010 without the citizenship documents necessary to avail the Ehsaas programme's financial support. This lack of proper documentation must be addressed urgently since the only way people will be able to access housing assistance – now that the reconstruction phase is commencing – will be through their citizenship documents.⁵²

Although this report has been prepared in the wake of the 2022 floods, one must bear in mind the multitude of climate vulnerabilities that Pakistan faces. Floods are not the only disaster that threatens the country. A vulnerability mapping clearly indicates heat waves and poor air quality as other factors affecting the health of the economy as well as the people. The Country Climate and Development Report clearly lists these as climate threats.⁵³ The only example of heat wave management⁵⁴ we have is for urban areas, specifically Karachi, when a document was prepared after the 2015 heat wave.⁵⁵ Smog, while not wholly climate-induced, is also a health and economic threat that needs a lot more focus by widening its ambit to the poor air quality in most cities of Pakistan. The heat wave at the beginning of 2022 clearly affected human health as well as the agricultural sector, resulting in a wheat shortfall, and there is clearly no management plan in place to mitigate or adapt to it.

Preparedness

For a country that has been in the top-ten bracket of the Global Climate Change Index, the readiness response needs to be commensurate with the level of threat assessed. A mapping of vulnerability zones needs to take place alongside zoning in a manner similar to the mapping conducted after the 2005 Kashmir earthquake, with strict implementation and monitoring.

We must invest in early warning systems, evacuation plans and community sanctuaries with stockpiles of emergency supplies, and set up a system of joint management through local bodies.

A civil defence network must also be set up that can coordinate with bodies such as Red Crescent to deal with disasters in an orderly manner.

Pakistan has one of the highest rates of tele-density in the world and also has most of its areas covered through radio. Where the grid is available, terrestrial communication channels are used widely. Disaster warnings issued by the meteorological department, with information on relief drops, shelters and critical infrastructure updates, must be relayed through all these means. The government must also lift restrictions placed in the name of security on low-band community radios, which can be used for preparedness

Filling the gender gap in the management of these bodies is essential, given the disproportionate impact of disasters on women and other marginalised and vulnerable groups. This stems from the cultural burden that women bear, which prevents them from learning to swim, climb, run or any such strenuous physical activity. Women also bear the physical burden of pregnancies and nursing small children throughout their reproductive life, while suffering the discrimination of being made to consume food with low nutritional value. These cultural barriers must be overcome to ensure their safety when such disasters take place by embedding the disaster risk reduction in school curriculums and holding mandatory drills periodically.

Climate-resilient (zero-carbon) infrastructure

Given Pakistan's vulnerability to climate change, it is imperative that an in-depth assessment take place with a geographic vulnerability assessment before any state-supported reconstruction starts, as is the case in Sindh with the support of the World Bank.⁵⁶ Such institutions must not serve merely as a conduit for funds for reconstruction. The self-assumed aim of 'building better forward' cannot be achieved without meeting some prerequisites. For instance, not every house that crumbled should be built back in the same place, especially if it falls in a water pathway.⁵⁷

In order to mitigate and adapt to climate change, the state must invest in low- or zero-carbon technologies with disaster-resilient modes of construction. The urge to use bricks fired in kilns, for example, must be curbed as these increase pollution and strip the country of its already low green cover. There are several models that are available, suitable to different parts of Pakistan, and they should be selected where appropriate.

People must also be taught how to implement disaster-resilient housing using indigenous materials without expanding their carbon footprint. This can be done by avoiding the manufacture of building materials – including prefabricated housing – that are neither culturally acceptable⁵⁸ nor environmentally friendly as our experience of the 2005 earthquake and 2010 floods⁵⁹ have shown.

Mapping climate-induced migration

Climate disasters lead to displacement, loss of assets, unravelling of social ties and add to the pressure on existing economic and livelihood opportunities and natural resources, breeding resentment among communities competing for these resources and leading to social strife. Thus, the social and ecological implications of the phenomenon of climate-induced migration need to be mapped and addressed fully.

First, there must be more clarity on the difference between a migrant and a refugee. While the UN distinguishes between internationally and internally displaced persons, climate-induced migration blurs these boundaries and is based more on ecosystems and migration occurring due to habitat loss.⁶⁰ At a broader level, it extends from humans to other species whereby the loss of

one affects the other. This could range from species of fish to crop type or forest products on which communities may depend for food and fodder for their livestock.

While there is always a chance for refugees to return to their original geographic area once the threat has abated, this option may not exist for climate migrants as the place where they migrated from may no longer exist or be habitable. The delta dwellers of Sindh are one such community, be they fisherfolk, livestock herders or riverine farmers.⁶¹

Land ownership laws, tenure arrangements and asset transfers will need to be revisited in light of this information; this will require coordination between departments as seemingly unconnected with each other as the meteorological department and the land revenue department. People must not be allowed to block waterways through settlement infrastructures. If a hazard mapping determines that certain areas cannot be inhabited again, then an alternative, just, humane and equitable resettlement must take place.

Climate finance mechanisms being developed must also take into account people who are in danger of becoming climate migrants later and the monetary assistance they may need. The gender gap must be considered at every step as well, particularly the lessons learnt from 2010: communities wherever women were given assets such as land, houses and cattle, emerged as the more resilient ones.

Furthermore, a collaborative process must take place to identify proof of possession for flood victims without ownership documents or citizenship documents. Without such an exercise, the already marginalised flood victims are at risk of losing their right to housing, adequate compensation and a decent source of livelihood.

Local governments

Strong and autonomous local government systems are a prerequisite for effective disaster management since effective monitoring, allocation of adequate resources, managing disbursement of relief and ensuring accountability would all best be handled under an efficient local government system in a manner that reflects local priorities and prioritises vulnerable segments of the population. Local governments also play a key role in disaster risk reduction by ensuring that zoning and construction laws are complied with, eliminating environmental pollution, afforestation programs and ensuring disaster preparedness and planning. Furthermore, local governments are best suited to work with DDMA's to develop integrated policies, collect data on people affected by disasters, evacuation and rehabilitation.

Civil society oversight

The manner in which networks of nongovernment organisations, community-based organisations and civil society organisations were almost decimated by the regulations imposed by the Economic Affairs Division and security agencies for monitoring, has been one reason for the slow response to the current disaster. Such organisations have traditionally been first-responders for disaster relief, able to mobilise resources through partners and coordinate with volunteers on the ground. These organisations also tend to bring to the table a wealth of knowledge and experiences, and have a better idea of the needs of different communities to stave off a one-size-fits-all solution as states are wont to apply. This close relationship to vulnerable communities thus ensures a rights-based perspective on disaster management, without which the aim of achieving climate justice will remain out of reach.

While short-term measures related to disaster response are essential, Pakistan must work towards solutions that are sustainable and involve robust engagement with civil society. This

was especially apparent in 2022, given the dearth of local bodies and functional DDMAAs needed for on-ground delivery of relief and ration packages, leaving a vacuum which these organisations were asked to fill. It is essential for the government to recognise and facilitate the role of civil society organisations as allies rather than adversaries.⁶² The network that was deliberately shrunk must be allowed to become functional again and play its role in reconstruction efforts that are aligned with the needs of communities affected by the disaster.

A new social contract for climate justice

There should be no doubt in anyone's mind that a new social contract with the state is imperative—a contract that is rights-based, pro-poor and people-centric. This contract should ensure that solutions are not imposed but crafted through consultations, so that they are geographically relevant and culturally appropriate. Moreover, strict monitoring of the process and the resource outlay behind the solutions must be carried out in a transparent manner.

The Ministry of Planning's Post-Disaster Needs Assessment, the 4RF document and the latest issue of the United Nations Development Programme's *Development Advocate Pakistan*⁶³ provide valuable insights and guidance regarding the direction Pakistan must take to address its vulnerabilities and improve its readiness for future climate disasters – which can and will occur. Before the donor money reaches the till, however, the clarion call for a new social contract must be heeded if we want different and better results for Pakistan, results that take climate justice and vulnerable groups into consideration.

Endnotes

¹ NDMA Floods 2022 SITREP. National Disaster Management Authority. (n.d.). Retrieved February 1, 2023, from <http://web.ndma.gov.pk/>

² Pakistan scrambles to deliver aid as flood death toll rises. VOA. Retrieved February 1, 2023, from <https://www.voanews.com/a/pakistan-scrambles-to-deliver-aid-as-flood-death-toll-rises/6745880.html>

³ J. Gabbatiss & A. Tandon. (2022, March 16). In-depth Q&A: What is 'climate justice'? Carbon Brief. Retrieved February 1, 2023, from <https://www.carbonbrief.org/in-depth-qa-what-is-climate-justice/>

⁴ Government of Pakistan. (2021). Pakistan Updated Nationally Determined Contributions 2021. United Nations Framework Convention on Climate Change. Retrieved January 25, 2023, from <https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf>

⁵ S. Jamal. (2022, April 29). Pakistan: Heatwave alert issued as temperatures top 48°C in April. Pakistan – Gulf News. Retrieved February 1, 2023, from <https://gulfnews.com/world/asia/pakistan/pakistan-heatwave-alert-issued-as-temperatures-top-48c-in-april-1.87522507>

World's hottest city at 51°C. South China Morning Post. (n.d.). Retrieved January 25, 2023, from <https://www.scmp.com/video/asia/3181853/temperature-reaches-51-degrees-celsius-worlds-hottest-city>

⁶ U. Siddiqui. (2022, May 21). 'Perfect climate storm': Pakistan reels from extreme heat. Climate Crisis News | Al Jazeera. Retrieved February 1, 2023, from <https://www.aljazeera.com/news/2022/5/21/hold-heatwave-in-pakistan-and-climate-change>

⁷ AFP. (2022, May 16). Mango production declines by nearly 60 percent. The Express Tribune. Retrieved February 1, 2023, from <https://tribune.com.pk/story/2356836/mango-production-declines-by-nearly-60-percent>; S. Baloch & H. E. Peterson. (2022, May 2). 'we are living in hell': Pakistan and India suffer extreme spring heatwaves. The Guardian. Retrieved February 1, 2023, from <https://www.theguardian.com/world/2022/may/02/pakistan-india-heatwaves-water-electricity-shortages>

⁸ Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan. World Weather Attribution. (2022, September 14). Retrieved January 25, 2023, from <https://www.worldweatherattribution.org/climate-change-likely-increased-extreme-monsoon-rainfall-flooding-highly-vulnerable-communities-in-pakistan/>

⁹ Monsoon Online. (2022, May). South Asian Climate Outlook Forum May 2022. Retrieved January 25, 2023, from <https://mol.tropmet.res.in/sascof-april-2020/>

¹⁰ United Nations Development Programme. (n.d.). Scaling-up of glacial lake outburst flood (GLOF) risk reduction in northern Pakistan: United Nations Development Programme. UNDP. Retrieved January 25, 2023, from <https://www.undp.org/pakistan/projects/scaling-glacial-lake-outburst-flood-glof-risk-reduction-northern-pakistan>

¹¹ Ibid.

¹² Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan. World Weather Attribution. (2022, September 14).

¹³ S. Fraser. (2022, August 30). Pakistan floods are 'a monsoon on steroids', warns UN chief. BBC News. Retrieved January 25, 2023, from <https://www.bbc.com/news/world-asia-62722117>

¹⁴ Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan. World Weather Attribution. (2022, September 14).

¹⁵ M. Mati. (n.d.). - بلوچستان، 13 ملین ایکڑ فٹ بارش کا 63 فیصد پانی ضائع ہوتا ہے۔ Daily Quadrat. Retrieved January 25, 2023, from <https://dailyquadrat.pk/120858/>

¹⁶ Sindh Braces for More Misery. The Express Tribune. (2022, August 29). Retrieved February 1, 2023, from <https://tribune.com.pk/story/2373669/sindh-braces-for-more-misery>

¹⁷ Pakistan Meteorological Department. (n.d.). Pakistan Monsoon 2022 Rainfall Report. pmd.gov.pk. Retrieved January 25, 2023, from https://www.pmd.gov.pk/cdpc/Monsoon_2022_update/Pakistan_Monsoon_2022_Rainfall_Update.htm#:~:ext=This%20year%20monsoon%20season%20set,occurred%20from%204th%20July%20onwards

¹⁸ Wrong planning, administrative lapses caused flooding: Experts. (2022, December 5). Dawn. Retrieved February 1, 2023, from <https://www.dawn.com/news/1724651/wrong-planning-administrative-lapses-caused-flooding-experts>

¹⁹ About Us - National Disaster Management Authority. NDMA. (n.d.). Retrieved February 1, 2023, from <http://cms.ndma.gov.pk/page/about-us>

²⁰ World Weather Attribution. (2022, September 14). 'Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan.' Retrieved 25 January 2023, from <https://www.worldweatherattribution.org/climate-change-likely-increased-extreme-monsoon-rainfall-flooding-highly-vulnerable-communities-in-pakistan/>

-
- ²¹ S. George. (2022, September 29). Journey inside Pakistan's Flood Zone reveals how poorest were hit hardest. The Washington Post. Retrieved February 1, 2023, from <https://www.washingtonpost.com/world/2022/09/29/pakistan-floods-climate-change-poverty/>
- ²² United Nations. (2023, January 9). International Conference on Climate Resilient Pakistan | UN web TV. United Nations. Retrieved January 25, 2023, from <https://media.un.org/en/asset/k1j/k1jku6kfhg>
- ²³ <https://www.dw.com/en/pakistan-receives-billions-in-foreign-aid-for-flood-relief/a-64323882>
- ²⁴ Pakistan floods 2022: Resilient recovery, rehabilitation, and Reconstruction Framework (4RF): United Nations Development Programme. UNDP. (2022, December). Retrieved January 25, 2023, from <https://www.undp.org/pakistan/publications/pakistan-floods-2022-resilient-recovery-rehabilitation-and-reconstruction-framework-4rf>
- ²⁵ D. Eckstein et al. (n.d.). Global Climate Risk Index 2021. Germanwatch. Retrieved February 1, 2023, from <https://www.germanwatch.org/en/19777>
- ²⁶ NDMA Floods 2022 SITREP. National Disaster Management Authority. (n.d.). Retrieved February 1, 2023, from <http://web.ndma.gov.pk/>
- ²⁷ Flood-hit girl tortured, raped in Sindh's Shahdadpur. (2022, September 2). Dawn. Retrieved January 25, 2023, from <https://www.dawn.com/news/1707895>
- ²⁸ A. Manzoor & R. O. Adesola. Disaster in public health due to flood in Pakistan in 2022. Health Sci Rep. 2022 Oct 20;5(6):e903. doi: 10.1002/hsr.2.903. PMID: 36284933; PMCID: PMC9584091.
- ²⁹ S. R. Hassan. (2022, September 22). Malaria and Diseases Spreading fast in flood-hit Pakistan. Reuters. Retrieved February 2, 2023, from <https://www.reuters.com/world/asia-pacific/pakistan-flood-victims-hit-by-disease-outbreak-amid-stagnant-water-2022-09-21/>
- ³⁰ A. Ahmed. (2023, January 10). Up to 4m children still living next to contaminated floodwater in Pakistan: UNICEF. Dawn. Retrieved January 25, 2023, from <https://www.dawn.com/news/1730870>
- ³¹ S. Richardson. (2022, November 9). In flood-hit Pakistan, IPAS is ensuring Reproductive Health Care. Ipas. Retrieved February 2, 2023, from <https://www.ipas.org/news/in-flood-hit-pakistan-ipas-is-ensuring-reproductive-health-care/#:~:text=With%20a%20third%20of%20Pakistan,services%20in%20flood%20affected%20areas.>
- ³² <https://www.adb.org/sites/default/files/publication/28992/story-pakistan-postflood-reconstruction.pdf>
- ³³ T. Ullah. (2022, September 21). Pakistan floods: Women Struggling to Secure Sanitary products. The National. Retrieved February 2, 2023, from <https://www.thenationalnews.com/world/asia/2022/09/21/pakistan-floods-women-struggling-to-secure-sanitary-products/>
- ³⁴ Z. Ebrahim. (2022, January 25). Climate disasters trigger mental health crisis in Pakistan's mountains. The Third Pole. Retrieved 2 February 2023, from <https://www.thethirdpole.net/en/climate/climate-disasters-trigger-mental-health-crisis-in-pakistans-mountains/>
- ³⁵ Sindh Mental Health Authority. (n.d.). Retrieved February 2, 2023, from <https://smha.sindh.gov.pk/>
- ³⁶ WFP expands assistance operations to flood-hit communities in Pakistan - complementing government response: World food Programme. UN World Food Programme. (2022, October 11). Retrieved January 25, 2023, from <https://www.wfp.org/news/wfp-expands-assistance-operations-flood-hit-communities-pakistan-complementing-government>
- ³⁷ N. Brohi. (2022, November 17). Treading Water. Guernica. Retrieved January 25, 2023, from <https://www.guernicamag.com/treading-water/>
- ³⁸ F. Mushtaq et al. (2022). A rapid geospatial flood impact assessment in Pakistan. Rome, FAO. <https://doi.org/10.4060/cc2873en>
- ³⁹ T. Merkel & H. Kooper. (2022, October 22). Pakistan's date industry got ravaged by floods. here's how farmers are picking up the pieces. Insider. Retrieved February 2, 2023, from <https://www.insider.com/can-farmers-save-the-date-industry-in-pakistan-after-floods-2022-10>
- ⁴⁰ F. M. Qamar et al. (2022, December 20). The 2022 Pakistan floods: Assessment of crop losses in Sindh province using satellite data. ReliefWeb. Retrieved February 2, 2023, from <https://reliefweb.int/report/pakistan/2022-pakistan-floods-assessment-crop-losses-sindh-province-using-satellite-data>
- ⁴¹ A. Niazi. (2022, December 28). Agri-Loans worth Rs 663.9bn released under Kissan package . Profit by Pakistan Today. Retrieved February 1, 2023, from <https://profit.pakistantoday.com.pk/2022/12/28/agri-loans-worth-rs663-9bn-released-under-kissan-package/>
- ⁴² <https://www.pakistantoday.com.pk/2022/08/29/massive-relief-effort-under-way-as-flood-death-toll-mounts/>
- ⁴³ <https://tribune.com.pk/story/2373146/unmaintained-hill-torrent-pathways-behind-flooding-report>
- ⁴⁴ <https://www.dawn.com/news/1708475>
- ⁴⁵ <https://www.aljazeera.com/news/2018/5/3/pakistan-sets-april-world-temperature-record>
- ⁴⁶ Devastating floods in Pakistan. UNICEF. (n.d.). Retrieved January 25, 2023, from <https://www.unicef.org/emergencies/devastating-floods-pakistan-2022>
- ⁴⁷ Ibid.

-
- ⁴⁸ Ministry of Planning, Development and Special Initiatives, Government of Pakistan. (n.d.). Pakistan Floods 2022 Post-Disaster Needs Assessment . Retrieved January 25, 2023, from <https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf>
- ⁴⁹ Shame, misery as Pakistan floods leave many without toilets. Daily Times. (2022, September 7). Retrieved February 2, 2023, from <https://dailytimes.com.pk/993809/shame-misery-as-pakistan-floods-leave-many-without-toilets/>
- ⁵⁰ A. T. Sheikh. (2022, December 29). Monuments of maladaptation. DAWN.COM. Retrieved January 26, 2023, from <https://www.dawn.com/news/1728837>
- ⁵¹ National Flood Protection Plan - Federal Flood Commission. (n.d.). Retrieved January 26, 2023, from <https://ffc.gov.pk/wp-content/uploads/2018/12/National-Flood-Protection-Plan-IV-NFPP-IV-1.pdf>
- ⁵² World Bank. (2022, December 20). Factsheet: Sindh Flood Emergency Housing Reconstruction Project - Pakistan. ReliefWeb. Retrieved January 25, 2023, from <https://reliefweb.int/report/pakistan/factsheet-sindh-flood-emergency-housing-reconstruction-project>
- ⁵³ World Bank Group. 2022. Pakistan Country Climate and Development Report. CCDR Series;. World Bank, Washington, DC. © World Bank Group. <https://openknowledge.worldbank.org/handle/10986/38277> License: CC BY-NC-ND
- ⁵⁴ Ministry of Climate Change, Government of Pakistan. 2015. Technical Report on Karachi Heat Wave 2015. Retrieved January 26, 2023, from <https://mocc.gov.pk/SiteImage/Misc/files/Final%20Heat%20Wave%20Report%203%20August%202015.pdf>
- ⁵⁵ Commissioner Karachi. 2017. Karachi Heatwave Management Plan: A Guide to Planning and Response. Retrieved January 26, 2023, from <https://ghhin.org/wp-content/uploads/HeatwaveManagementPlan.pdf>
- ⁵⁶ K. Kiani. (2023, January 10). Post-flood reconstruction projects okayed for Sindh, Balochistan. DAWN.COM. Retrieved February 2, 2023, from <https://www.dawn.com/news/1730873/post-flood-reconstruction-projects-okayed-for-sindh-balochistan>
- ⁵⁷ H. Iqtidar. (2023, January 11). Post-flood design. DAWN.COM. Retrieved January 25, 2023, from <https://www.dawn.com/news/1731037>
- ⁵⁸ Gender and social vulnerability to climate change: A study of disaster prone areas in Sindh. SPDC. (n.d.). Retrieved January 25, 2023, from <https://spdc.org.pk/publications/gender-and-social-vulnerability-to-climate-change-a-study-of-disaster-prone-areas-in-sindh>
- ⁵⁹ Vulnerability and capacity assessment with regard to Social Protection. SPDC. (n.d.). Retrieved January 25, 2023, from <https://spdc.org.pk/publications/vulnerability-and-capacity-assessment-with-regard-to-social-protection>
- ⁶⁰ United Nations. (n.d.). Definitions | Refugees and Migrants. United Nations. Retrieved January 25, 2023, from <https://refugeesmigrants.un.org/definitions>
- ⁶¹ These climate change victims risk everything to catch crabs for the rich. VICE. (2022, December 19). Retrieved January 25, 2023, from <https://www.vice.com/en/article/3adw39/pakistan-dangerous-mud-crab-fishing-climate-crisis>
- ⁶² S. R. Hassan. (2022, September 3). Pakistan charity urges government to lift ban on some NGOs over floods. Reuters. Retrieved January 25, 2023, from <https://www.reuters.com/world/pakistan-charity-urges-government-lift-ban-some-ngos-over-floods-2022-09-02/>
- ⁶³ Gender equality in Pakistan: Climatic & Politico-Economic Stressors: United Nations Development Programme. UNDP. (2023, January 24). Retrieved February 2, 2023, from <https://www.undp.org/pakistan/publications/gender-equality-pakistan-climatic-politico-economic-stressors>