JUSTICE CENTRE | HONG KONG

COUNTRY OF ORIGIN INFORMATION MEMO

Title: Pakistan - Climate Induced Displacement

Last Updated: January 2025

This Memorandum was prepared after researching publicly accessible information currently available within time limitations. This Memorandum is not and does not purport to be, conclusive as to the merit of any particular claim for non-refoulement protection under the Unified Screening Mechanism in Hong Kong. Authorities or organisations may also release updated information, statistics, or date or issue updated reports from time to time. Users are reminded to use such information, statistics, data, and reports with caution.

Contents

JUSTICE CENTRE | HONG KONG

EXECUTIVE SUMMARY

This memorandum summarizes the climate-related issues that have impacted displacement patterns in Pakistan, a country ranked as the number one most affected in the world in 2022 due to exceptionally high relative economic losses and numbers of affected people. Extensive geographical diversity, a strong dependency on agriculture, high rates of poverty, and a sizable population collectively contribute to the country's high vulnerability to climate change.

The country faces devastating floods, such as in 2022 where flooding affected at least 33 million people and displaced an estimated eight million, along with increasing Glacial Lake Outburst Floods (GLOFs). Pakistan also contends with severe drought and water scarcity, and deadly heatwaves, which killed nearly 700 people in June 2024. These events have caused massive economic damage (US$14.9 billion from 2022 floods) and pushed millions into poverty.

Social impacts include the destruction of over 2.3 million homes, the inaccessibility of schools for over 2 million children, and health crises like disease outbreaks and malnutrition. Women and the slum population are particularly high-risk groups.

The climate crisis is fueling internal migration from rural to already overpopulated urban areas, straining infrastructure. The government has established the National Disaster Management System and successfully advocated for the international Loss and Damage Finance Facility at COP27.

1. Background Information

1.1.1. Pakistan, a country with a population of 254,737,867 (as of 120 May 2025),[1] is characterized by diverse topography, ecosystems, and climate zones. Pakistan is one of the most vulnerable countries in the world to climate change. Extensive geographical diversity and exposure to a wide range of climate-related hazards, a strong dependency on agriculture and water resources, high rates of multidimensional poverty, as well as a sizable and expanding population, independently and collectively contribute to climate change-related vulnerabilities across the country.[2]

1.1.2. Germanwatch, a non-profit, environmental organization based in Bonn, Germany, has ranked Pakistan as the number one most affected country in the world in 2022 because of exceptionally high relative economic losses - in absolute terms, economic losses were high, as well as the numbers of affected people in absolute and relative terms, as Pakistan suffered from devastating floods, landslides and storms from June to September 2022 owing to a heavy monsoon season with torrential rainfalls.[3] The country has observed changing weather patterns, including variations in precipitation and temperatures, increased frequency and severity of tropical storms and coastal rains, glacial melt, glacial lake outburst flooding, sea level rise, loss of biodiversity, desertification, and droughts.[4]

1.1.3. Geographical diversity, ranging from high altitudes in the northeast to arid coastal plains in the south, renders the population vulnerable to a wide range of extreme climate-related events. Pakistan is also a strongly agrarian country, therefore making it sensitive to climate shocks affecting agricultural productivity and food security. .[5] Thus, as Pakistan's economy relies heavily on agriculture, any changes in temperature and disruptions in water availability and monsoon patterns can wreak havoc on the livelihoods of millions of people.

1.1.4. Poverty in Pakistan is widespread, with important distributional inequalities. Over a third (35.7%) of the population lives below the extreme poverty threshold of USD3.20 per day, while a little over three-quarters (76.2%) lives below the USD5.50 poverty threshold.[6] In 2022, Pakistan experienced record heatwaves, with temperatures

---

1 Worldometer. https://www.worldometers.info/world-population/pakistan-population/#:~:text=The%20current%20population%20of%20Pakistan,latest%20United%20Nations%20data1.

2 World Bank Group; Climate and Health Vulnerability Assessment April 2024, available at https://documents1.worldbank.org/curated/en/099070324142031034/pdf/P501993-7ac51308-d599-4527-8f4d-733583b5c276.pdf

3 Germanwatch, *Climate Risk Index 2025*, 2 December 2025, available at: https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf [accessed 19 June 2025]

4 Government of Pakistan, 2021. "Updated Nationally Determined Contributions 2021." Available at https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf.

5 World Bank Group; Climate and Health Vulnerability Assessment April 2024, , available at https://documents1.worldbank.org/curated/en/099070324142031034/pdf/P501993-7ac51308-d599-4527-8f4d-733583b5c276.pdf

6 World Bank Group; Climate and Health Vulnerability Assessment April 2024, , available at https://documents1.worldbank.org/curated/en/099070324142031034/pdf/P501993-7ac51308-d599-4527-8f4d-733583b5c276.pdf

reaching almost 50°C. This above-average temperature drove abnormally intense rains. The Indus River, which runs the length of the country, burst its banks and flooded a 75,000km area. At least 33 million people were affected, and an estimated eight million displaced[7].

1.1.5. According to the World Health Organization (WHO), after the devastating floods in 2022, more than 33 million people (15% of the total Pakistani population) were affected by flooding. Within this group, approximately 6.4 million people were in such dire straits that they required humanitarian support.[8]

1.1.6. Most recently, Pakistan had above average rainfall in 2024 causing significant devastation across Pakistan, particularly in the provinces of Balochistan, Punjab, and Sindh. Heavy rains have resulted in widespread flooding, landslides, and infrastructure damage[9].

1.1.7. In addition to the effects of extreme weather events (EWEs) on mental health issues, other psychological impacts of traumatic experiences related to climate anxiety can negatively affect children's ability to regulate emotions. These disruptions may lead to increased cognitive deficits, behavioral problems, learning difficulties, mental development issues, impaired language development, adjustment challenges, and hindered academic performance.[10]

2. Recent Climate Events

2.1. Changes in Weather Patterns

2.1.1. Pakistan is highly vulnerable to the adverse impacts of climate change, with flooding being a major concern. Several factors contribute to this issue. In the mountainous north, melting glaciers have led to increased water flow into the Indus River, Pakistan's largest river, creating a dangerous surge of water. The Hindu Kush region in northern Pakistan, often referred to as "the third pole," is among the areas most affected by global warming. Additionally, low-pressure heat waves in the Arabian Sea contribute to heavy rainfall in the coastal provinces. Consequently, this year, Pakistan has experienced a three- to fivefold increase in the usual amount of rainfall. Combined with

[7] Amnesty International, *Pakistan: Climate disasters increasing risks of death and disease amongst chilren and older people – new report*, available at: https://www.amnesty.org/en/latest/news/2025/05/pakistan-climate-disasters-increasing-risks-of-death-and-disease-amongst-children-and-older-people-new-report/ [accessed 20 June 2025]

[8] National Library of Medicine, *Global Warming in Pakistan and its Impact on Public Health as Viewed through a Health Equity Lens*, February 2023, available at https://pmc.ncbi.nlm.nih.gov/articles/PMC9975889/#:~:text=Because%20of%20global%20warming's%20impact,risk%20of%20morbidity%20and%20mortality. [accessed 19 June 2025]

[9] ReliefWeb, *Pakistan Floods 2024 Situation Report – September 3, 2024*, available at: https://reliefweb.int/report/pakistan/pakistan-floods-2024-situation-report-september-03-2024#:~:text=Due%20to%20heavy%20rainfall%20in,Dadu%2DMoro%20and%20Amri%20bridges

[10] National Library of Medicine, *The effects of climate change on mental health and psychological well-being: Impacts and priority actions*, 5 December 2024, available at https://pmc.ncbi.nlm.nih.gov/articles/PMC11704568/#:~:text=In%20addition%20to%20the%20effects,be%20identified%20and%20efficiently%20addressed [accessed 20 June 2025]

accelerated glacial melt, this has resulted in devastating floods across many regions. Furthermore, other significant factors—such as air pollution from industrial and agricultural waste and vehicles, an underdeveloped sewage system, limited freshwater resources, deforestation, and soil erosion—exacerbate the threat when flooding occurs.[11]

2.1.2. In 2024, climate change significantly impacted Pakistan's agriculture, leading to decreased crop yields, increased pest and disease infestations, and disruptions in growing seasons. Key crops like wheat, rice, and potatoes suffered due to rising temperatures, erratic rainfall, and extreme weather events. These challenges negatively impacted farmers' livelihoods and food security, especially for small-scale farmers.[12]

2.2. Floods

2.2.1. Pakistan has faced two of the most devastating flooding events in recent years: the 2010 super floods and the 2022 monsoon floods, both of which affected millions of people.

2.2.2. According to Pakistan's National Disaster Management Authority, around 33 million people, i.e. one in seven, were affected by the floods between June and August 2022.[13] The floods took the lives of more than 1,700 people, one-third of which were children[14]. A total of 8,168,000 people lost their homes and were (internally) displaced[15]. The extent of damage caused by the 2022 flooding was unprecedented. The Government of Pakistan reported preliminary estimates which suggested that as a direct consequence of the floods, the national poverty rate will increase by 3.7 to 4.0 percentage points, pushing between 8.4 and 9.1 million people into poverty. As of 11 October 2022, 94 districts were declared as "calamity hit", accounting for more than half of all districts in the country. The majority were in the provinces of Balochistan, Sindh, and Khyber Pakhtunkhwa.[16]

a. Glacial Lake Outburst Floods

[11] ReliefWeb, *Pakistan Floods 2024 Situation Report – September 3, 2024*, available at: https://reliefweb.int/report/pakistan/pakistan-floods-2024-situation-report-september-03-2024#:~:text=Due%20to%20heavy%20rainfall%20in,Dadu%2DMoro%20and%20Amri%20bridges

[12] https://concaveagri.com/climate-change/

[13] Ministry of Planning, Development and Special Initiatives, *Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment*, available at https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf [accessed 19 June 2025]

[14] (N14)

[15] Adil, L, Eckstein D, Künzel V, Schäfer L, (2025) Climate Risk INDEX 2025. Germanwatch. https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf

[16] Ministry of Planning, Development and Special Initiatives, *Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment*, available at :https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdfhttps://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf [accessed 19 June2025]

2.2.3. Glacial lake outburst floods (GLOFs) occur when a glacial lake dam is breached or overtopped, causing a sudden release of water into nearby streams and rivers. They may create flash floods. Experts have generally attributed GLOFs to rising temperatures which have caused the glaciers to melt and form glacial lakes.

2.2.4. Outside Polar, Pakistan is one of the glacial centers in the world, home to over 7,200 glaciers. Pakistan's northern part is especially vulnerable to GLOFs, with a total of 3,044 glacial lakes developed in Gilgit-Baltistan (GB) and Khyber Pakhtunkhwa (KP), of which 33 glacial lakes have been assessed as prone to GLOF. An estimated 7.1 million people in GB and KP are exposed.[17]

2.2.5. According to Pakistan Meteorological Department, as of September 2022, there have been 16 GLOFs incidents in GB and KP regions during the year, compared with just five or six seen in previous years[18]. From mid-June to 1 September 2022, record monsoon rains and melting glaciers in the north region triggered floods that have killed at least 1,191 people, including 399 children.[19] In May 2022, due to the unprecedented heat wave, the ice on Shisper Glacier melted, causing GLOFs in the region. As a result of the floods, the Hassanabad Bridge collapsed, disconnecting key routes between Pakistan and China. Nearby homes, buildings and two power plants were also damaged.[20]

2.3. Drought

2.3.1. According to the United Nations Convention to Combat Desertification (UNCCD)'s "Global Land Outlook" report, many countries soon expected to face intense climate change-driven drought still lack a comprehensive plan of action to implement at the first signs of drought, Pakistan being one of such countries listed in the report supported by the UNCCD Drought Initiative. [21] The Pakistan Council of Research in Water Resources warned that the country touched the "water stress line" in 1990 and

[17] United Nations Development Programme, *Scaling-up of Glavial Lake Outburst Flood (GLOF) Risk Reduction in Northern Pakistan (GLOF II PROJECT PAKISTAN),* December 2022, available at https://www.undp.org/sites/g/files/zskgke326/files/2023-04/GLOF%20II%20Project%20%28Dec%202022%29_Project%20Brief_2023.pdf and https://www.undp.org/pakistan/projects/scaling-glacial-lake-outburst-flood-glof-risk-reduction-northern-pakistan [accessed 17 June 2025]

[18] Pakistan Meteorological Department, *Pakistan Monsoon 2022 Rainfall Report*, available at: https://cdpc.pmd.gov.pk/Monsoon_2022_update/Pakistan_Monsoon_2022_Rainfall_Update.htmhttps://cdpc.pmd.gov.pk/Monsoon_2022_update/Pakistan_Monsoon_2022_Rainfall_Update.htm [accessed 19 June 2025]

[19] CNN, *Pakistan's melting glacier are 'erupting' and worsening floods,* 1 September 2022, available at https://www.cnn.com/2022/09/01/asia/pakistan-flooding-glacier-outbursts-climate-intl/index.html [accessed 19 June 2025]

[20] Phys.org, *Bridge collapse in Pakistan due to glacier lake outburst flood,* 16 May 2022, available at https://phys.org/news/2022-05-bridge-collapse-pakistan-due-glacier.html#:~:text=Extraordinary%20record-high%20temperatures%20in%20Pakistan%20triggered%20the%20collapse,damaging%20nearby%20homes%2C%20buildings%2C%20and%20two%20power%20plants. [accessed 19 June 2025]

[21] United Nations Convention to Combat Desertification, *Global Land Outlook Second Edition,* 27 April 2022, available at https://www.unccd.int/sites/default/files/2022-04/UNCCD_GLO2_low-res_2.pdf [accessed 19 June 2025]

crossed the "water scarcity line" in 2005, and that if the present situation continues, Pakistan will approach "absolute water scarcity line" by 2025 .[22]

2.3.2. Large-scale droughts have impacted Pakistan more intensely due to its agricultural dependency. During 2023-2024, the agriculture sector contributed 24% of Pakistan's gross domestic product and 37.4% in employment.[23]

2.3.3. Pakistan experienced one of the driest winters in the country's history in 2024, with the Pakistan Meteorological Department reporting 67% less rainfall than usual.[24]

2.4. Heatwaves

2.4.1. Heatwaves are common occurrence in Pakistan. After factoring climate change, the natural probability of a heatwave exceeding average temperatures from April and May 2010, months with highest average temperatures since 1900, increases to once in every 3.1 years.[25]

2.4.2. In 2022, Pakistan suffered from an intense heatwave spanning March to the end of May, with temperatures reaching 49.5C in the city of Nawabshah.[26] In 2015, more than 1,200 people died in Pakistan's heatwave.[27] In June 2024, nearly 700 people died during a heatwave in Pakistan's Sindh province. [28] [29] Due the heatwaves, schools have been forced to closed, crops were damaged, and energy supplies were strained.

2.5. Sea-level rise

2.5.1. Pakistan has a 1,046-km-long coastline that stretches along the Arabian Sea. The sea level rise projection by 2100 for Karachi for 95 percentiles, is 2.6 meters, relatively to the 2000 level.[30]

---

[22] Pakistan Council of Research in Water Resources, Islamabad (Pakistan). *Managing Water Scarcity in Pakistan: Moving Beyond Rhetoric,* available at: https://pcrwr.gov.pk/wp-content/uploads/2021/08/Managing-Water-Scarcity-in-Pakistan-2015.pdf [accessed 19 June 2025]
[23] Finance Division, Government of Pakistan, *Pakistan Economic Survey 2023-24*, available at: https://finance.gov.pk/survey/chapter_24/2_agriculture.pdf [accessed 19 June 2025]
[24] Time Magazine, *Climate Change is Straining Pakistan's Water. Tensions with India Could Make It Worse*, 9 May 2025, available at: https://time.com/7284470/india-pakistan-water-supply-climate-change/ [accessed 19 June 2025]
[25] CNN*, Climate change is making record-breaking heatwaves in India and Pakistan 100 times more likely,* 18 May 2022, available at: https://edition.cnn.com/2022/05/18/asia/climate-india-pakistan-heatwave-intl/index.html [accessed 19 June 2025]
[26] Germanwatch, *Climate Risk Index 2025*, 2 December 2025, available at: https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf [accessed 19 June 2025]
[27] Associated Press, *Pakistan Heat Wave Kills More Than 1,200; More Dangerous Heat Expected*, 28 June 2015, available at https://weather.com/safety/heat/news/pakistan-heat-wave-latest-news [accessed 19 June 2025]
[28]Pakistan Journal of Medical & Health Sciences, Alarming Heat Wave-2024: *The summer season in Pakistan*, available at: https://pjmhsonline.com/index.php/pjmhs/article/view/5535 [accessed 19 June 2025]
[29]The Guardian, *'We are living in hell': Pakistan and India suffer extreme spring heatwaves*, 2 May 2022, available at https://www.theguardian.com/world/2022/may/02/pakistan-india-heatwaves-water-electricity-shortages [accessed 19 June 2025]
[30] Dawn*, Time to develop resilience plan for Karahi against rising sea level*, 30 April 2020, available at https://www.dawn.com/news/1553312 [accessed 17 June 2025]

2.5.2. Rise in sea-level can affect coastal ecosystems, destruction of agricultural lands along the coastal belt and may result in mass migration due to loss of livelihood, according to Dr. Ghulam Rasool, the former Director General of Pakistan Meteorological Department and Regional Program Manager Center for Mountain Development. [31] A combination of sea erosion and intrusion has submerged several Indus river delta islands, mainly in the Thatta, Badin and Sajawal districts of the southern Sindh province. Besides, a consistent sea erosion has engulfed nearly 3 million acre of land in the past 40 years, according to Mohammad Alsi Shah, the head of an NGO that works for the advancement of fishermen community. According to Shah, more than 1 million people were relocated due to sea intrusion and erosion.[32]

3. Impacts of Climate Events

3.1. Economic

3.1.1. The Government of Pakistan reported in the aftermath of the 2022 flooding that "[u]nderlying political and economic instability are exacerbating the disaster impacts and undermining the effectiveness of recovery".[33] The Government estimated that the severe flooding was expected to have a substantial negative impact on Pakistan's economy.

3.1.2. PKR 3.2 trillion (US$14.9 billion), equivalent to 4.8% of fiscal year FY22 gross domestic product (GDP).[34] Among the economic sectors, the agriculture and industry sectors were estimated to each incur around one-quarter of the damages, and the services sector bore close to half of the total damages. Recovery and reconstruction needs were projected to be sizable, at 1.6 times the budgeted national development

[31] The News International, *Climate challenges mount for Pakistan due to sea-level rise, warn experts*, available at https://www.thenews.com.pk/print/853791-climate-challenges-mount-for-pakistan-due-to-sea-level-rise-warn-experts [accessed 19 June 2025]
[32] Anadolu Agency, *Climate change triggers widespread Pakistan migration,* 12 August 2019, available at https://www.aa.com.tr/en/environment/climate-change-triggers-widespread-pakistan-migration/1667231 [accessed 17 June 2025]
[33] Ministry of Planning, Development and Special Initiatives, Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment, available at: https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdfhttps://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf [accessed 19 June 2025]
[34] Pakistan Ministry of Planning, Development and Special Initiatives, Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment, available at https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf

expenditure for FY23.[35] In October 2022, the World Bank estimated reconstruction would cost over USD16 billion. [36]

3.1.3. Overall decline in GDP as a direct impact of the floods was projected to be around 2.2% of FY22 GDP. Among the major sectors, the agriculture sector was projected to decline the most at 0.9% of FY22 GDP. This was reported to have spillover effects on the industry and services sectors. For example, flood-related cotton losses affect the domestic textile industry, as local cotton constitutes about half of the industry's required cotton input. Similarly, the local food processing and slaughtering industries will be negatively impacted by the expected reduction in food harvests and reduced supply of livestock. Lower agricultural and industrial activity are likely to weigh on wholesale and transportation services activities, which account for around half of the service sector output. Transportation challenges arising from the loss of critical infrastructure were expected to disrupt supply and further dampen overall economic activity. Services sector value added was consequently projected to decline by 0.6% of FY22 GDP.[37]

3.2. Political

3.2.1. Food, water and energy insecurity resulted from extreme weather events, combined with inflation, may lead to further political instability in Pakistan.

3.2.2. After the 2020 floods in Karachi, the provincial government's actions to tear down settlements along the waterways without considering proper plans to resettle or adequately compensating displaced families have led to protests from both communities and civil society activists. The 2022 heatwaves created an acute water crisis in Sindh, which led to inter-provincial tensions with Punjab. [38]

3.2.3. In addition, migration from rural area to urban area due to natural disasters has become more common, leading to overpopulation and occupational shifts. Some research suggests that there is a relationship between climate change and conflicts in Pakistan. Majority of the conflicts in the region are due to overpopulation, economic

[35] Pakistan Ministry of Planning, Development and Special Initiatives, Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment, available at https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf . According to the FY23 Federal Budget, the total national Public Sector Development Programme allocation was PKR 2,158 billion.

[36] Germanwatch, *Climate Risk Index 2025*, 2 December 2025, available at: https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf [accessed 19 June 2025]

[37] Ministry of Planning, Development and Special Initiatives, Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment, available at: https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf [accessed 19 June 2025]

[38] United States Institute of Peace, *Pakistan's Climate Challenges Pose a National Security Emergency*, available at https://www.usip.org/publications/2022/07/pakistans-climate-challenges-pose-national-security-emergency [accessed 17 June 2025]

competition, acquisition of land and resources, and migration. There is significant causal relationship between climate change, migration and conflicts.[39]

3.3. Housing

3.3.1. Extreme weather events, such as floods and heatwaves, may destroy or damage houses. In 2022, the floods damaged or destroyed more than 2.3 million homes, according to Pakistan's National Disaster Management Authority. [40]

3.4. Education

3.4.1. Floods and heatwaves have forced schools to close and families to migrate. After the severe flooding in 2022, over 30,000 schools in Pakistan were damaged.[41] Schools for more than 2 million children remained inaccessible for more than 2 months after the floods. Before the floods, one-third of the boys and girls in the flood-affected areas were already out of school. The disaster further deprived them from education opportunity. [42]

3.4.2. Where schools remain closed, there may be a higher likelihood of them being forced into child labor and child marriage. [43]

3.5. Health

3.5.1. Extreme weather events may lead to food and health crises. Floods may result in outbreaks of disease due to lack of access to medical assistance and poor hygiene conditions. The World Health Organization noted that Pakistan had seen a sharp rise

[39] Ali, F., Khan, T.A., Alamgir, A. et al. Climate Change-Induced Conflicts in Pakistan: From National to Individual Level. Earth Syst Environ 2, 573–599 (2018). https://doi.org/10.1007/s41748-018-0080-8
[40] United Nationals Office for the Coordination of Humanitarian Affairs, *Revised 2022 Floods Response Plan Pakistan*, 18 December 2023, available at: file:///C:/Users/N685197/Downloads/Pakistan%20Floods%20Response%20Plan%20Final%20Report%20October%202023.pdf [accessed 19 June 2025]
[41] United Nationals Office for the Coordination of Humanitarian Affairs, *Revised 2022 Floods Response Plan Pakistan*, 18 December 2023, available at: file:///C:/Users/N685197/Downloads/Pakistan%20Floods%20Response%20Plan%20Final%20Report%20October%202023.pdf [accessed 19 June 2025]

[42] UNICEF, *Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods*, 2 November 2022, available at https://www.unicef.org/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floods [accessed 17 June 2025]
[43] UNICEF, *Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods*, 2 November 2022, available at https://www.unicef.org/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floodshttps://www.unicef.org/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floods [accessed 17 June 2025]

in malaria as well as diarrheal diseases, a dengue fever outbreak, measles and diptheria.[44]

3.5.2. In addition, food insecurity may result in malnourishment. The floods in 2022 have wiped out 4.4 million acres of crops and killed more than 800,000 livestock according to a report from the UN Office for the Coordination of Humanitarian Affairs in December 2023.[45] Prime Minster Sharif said on 30 August 2022 that the victims were facing food shortages and the price of basic items such as tomatoes and onions had skyrocketed.[46] Large-scale droughts may also lead to food security and water security issues.

4. Groups of Concern

4.1. Slum population

4.1.1. In Pakistan, as of 2020, 56% of the total urban population lived in slums. [47] The slum population is at high risk from the impacts of climate events as they often live in the more undesirable area. According to the UN-Habitat, the biggest deprivations for slum communities are the lack of adequate and safe housing conditions, clean water supply, sanitation and secure land tenure. [48]

4.2. Women

4.2.1. In Pakistan, women are facing higher risks due to climate change as 66% of women are involved in agriculture as of 2023[49], the most vulnerable sector to climate change. The chairperson of Sindh Naari Porhiyat Council commented that women are a major casualty of the monsoon rains in Sindh in 2022. This is because women account for majority of the workers when it comes to Pakistan's agriculture. Moreover, women's mobility particularly in rural Pakistan was already difficult, and flooded roads adds to existing obstacles, leaving women facing a greater likelihood than men of losing their jobs. [50]

---

[44] United States Institute of Peace, *Pakistan's Roadmap for COP27: In Search of a Strategic Vision*, 8 November 2022, available at https://www.usip.org/publications/2022/11/pakistans-roadmap-cop27-search-strategic-vision [accessed 17 June 2025]

[45] United Nationals Office for the Coordination of Humanitarian Affairs, *Revised 2022 Floods Response Plan Pakistan*, 18 December 2023, available at: file:///C:/Users/N685197/Downloads/Pakistan%20Floods%20Response%20Plan%20Final%20Report%20October%202023.pdf [accessed 19 June 2025]

[46] CNN, *A third of Pakistan is underwater amid its worst floods in history. Here's what you need to know,* 2 September 2022, available at https://www.cnn.com/2022/09/02/asia/pakistan-floods-climate-explainer-intl-hnk/index.html [accessed 17 June 2025]

[47] World Bank Group data, *Population living in slums (% of urban population) - Pakistan*, available at: https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS?locations=PK [accessed 17 June 2025]

[48] UN-Habitat, *Slum Upgrading*, available at: https://unhabitat.org/topic/slum-upgrading [accessed 19 June 2025]

[49] World Bank Group data, *Employment in agriculture, female (% of female employment) - Pakistan*, available at: https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS?locations=PK [accessed 17 June 2025]

[50] United Nations Office for Disaster Risk Reduction*, Floods after drought devastate Sindh's agriculture*, 26 August 2022, available at https://www.preventionweb.net/news/floods-after-drought-devastate-sindhs-agriculture [accessed 17 June 2025]

4.2.2. Child marriages, early births, and domestic violence may become more common as a result of climate change. Due to decreasing food production, women and children will be more prone to malnourishment and malnutrition.

5. State Protection and Government Response

5.1.1. In a 2022 decision, the Pakistan Supreme Court noted that "incorporating adaptation, climate resilience and sustainability, in the policy decisions by the urban development authorities, are essential to actualize the fundamental rights of the people". [51]

5.1.2. Currently, the West Pakistan National Calamities Act of 1958 provides for the maintenance and restoration of order and relief response for areas affected by calamities. An Emergency Relief Cell was created within the Cabinet Division in 1971 and was responsible for disaster relief support at national level. The Government of Pakistan promulgated the National Disaster Management Ordinance in 2007 (which became the National Disaster Management Act in December 2010) and introduced the National Disaster Management System. At the national level, the National Disaster Management Commission (NDMC) was established to lay down policies and guidelines for disaster risk management and for approval of the National Disaster Management Plan. The National Disaster Management Authority (NDMA) was established in 2007 in line with the Act, and serves as the implementing, coordinating and monitoring body for disaster risk management at the national level. The National Disaster Management Plan aims at enhancing Pakistan's capacity to prepare for and respond to disasters by defining measures necessary for disaster management. [52] The NDMA formulated the National Disaster Risk Reduction Policy in 2013 which laid the groundwork for comprehensive disaster management initiatives. [53]

5.1.3. In the National Disaster Management Plan 2025 (NDMP-25), a key focus is the advancement of early warning systems to ensure timely alerts, reducing the risk to human life and property. NDMP-25 serves as a framework to enable both national and provincial disaster management authorities to prepare for and respond to emergencies in a cohesive and well-coordinated manner. [54]

5.1.4. At the subnational level, some subnational government agencies have been more effective preparing for climate-related disasters while others have not. In Gilgit

[51] Tribune, *Consider climate change angle in uplift plans, rules SC*, 6 July 2022, available at https://tribune.com.pk/story/2364905/consider-climate-change-angle-in-uplift-plans-rules-sc [accessed 19 June 2025]
[52] Government of Pakistan Ministry of Climate Change National Disaster Management Authority. *National Disaster Management Plan*. August 2012. https://www.ndma.gov.pk/storage/plans/July2024/mL5R38Yo3sEDqJrfnx9v.pdf [accessed 19 June 2025]
[53] Government of Pakistan Ministry of Climate Change National Disaster Management Authority. *National Disaster Management Plan NDMP 2025*, available at: https://www.ndma.gov.pk/storage/plans/March2025/sps3g997GvbYIOEpwvKw.pdf [19 June 2025]
[54] Government of Pakistan Ministry of Climate Change National Disaster Management Authority. *National Disaster Management Plan NDMP 2025*, available at: https://www.ndma.gov.pk/storage/plans/March2025/sps3g997GvbYIOEpwvKw.pdf [19 June 2025

Baltistan, the relevant local government authorities were able to relocate people living in vulnerable locations before the glacial lake outburst floods. On the other hand, provincial government in Karachi's actions after the 2020 floods in Karachi have led to a number of protests and civil unrests. [55]

5.1.5. On the international level, Pakistan's Prime Minister Shahbaz Sharif served as vice-chair of the U.N. Climate Change Conference (COP27), which was held in the aftermath of the disastrous 2022 floods. At the conference, Pakistan called for the establishment of a dedicated "Loss and Damage Finance Facility". Consensus was eventually reached and a fund to address loss and damage caused by climate-induced disasters was established. [56]

6. Impacts on Availability of Internal Relocation

6.1.1. Severe droughts and floods have forced people to migrate to cities. In 2010, more than 2 million people were displaced by floods and migrated from rural to cities, out of which almost 70% permanently settled in big cities. According to Ministry of Climate Change spokesman Muhammad Saleem, seasonal, long-term and permanent migrations due to drought and floods, had taken place in southern, southwestern, and northeastern Pakistan in the previous 10 years. [57] In 2021, 70,000 people were internally displaced in Pakistan due to disasters.[58]

6.1.2. Internal migration has resulted in overpopulation in urban areas. As more rural population move to the urban areas, they may have difficulty seeking employment. Moreover, the internal migration may put burden on urban infrastructure.

[55] United States Institute of Peace, *Pakistan's Climate Challenges Pose a National Security Emergency*, 7 July 2022, available at https://www.usip.org/publications/2022/07/pakistans-climate-challenges-pose-national-security-emergency [accessed 19 June 2025]
[56] Ministry of Foreign Affairs Government of Pakistan, *Pakistan welcomes the historic decision of COP27 to establish the Fund for Loss and Damage*, 20 November 2022, available at https://mofa.gov.pk/pakistan-welcomes-the-historic-decision-of-cop27-to-establish-the-fund-for-loss-and-damage/ [accessed 19 June 2025]
[57] Tribune*, Climate change triggers widespread migration in Pakistan*, 8 December 2019, available at https://tribune.com.pk/story/2113842/climate-change-triggers-widespread-migration-pakistan [accessed 19 June 2025]
[58] Internal Displacement Monitoring Centre, 2022 Global Report on Internal Displacement, available at: https://api.internal-displacement.org/sites/default/files/publications/documents/IDMC_GRID_2022_LR.pdf#page=37 [accessed 19 June 2025]

Appendix – List of References

Adil, L, Eckstein D, Künzel V, Schäfer L, (2025) Climate Risk INDEX 2025. Germanwatch. https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf

Ali, F., Khan, T.A., Alamgir, A. et al. Climate Change-Induced Conflicts in Pakistan: From National to Individual Level. Earth Syst Environ 2, 573–599 (2018). https://doi.org/10.1007/s41748-018-0080-8

Amnesty International, *Pakistan: Climate disasters increasing risks of death and disease amongst chilren and older people – new report*, available at: https://www.amnesty.org/en/latest/news/2025/05/pakistan-climate-disasters-increasing-risks-of-death-and-disease-amongst-children-and-older-people-new-report/ [accessed 20 June 2025]

Anadolu Agency, *Climate change triggers widespread Pakistan migration,* 12 August 2019, available at https://www.aa.com.tr/en/environment/climate-change-triggers-widespread-pakistan-migration/1667231 [accessed 17 June 2025]

Associated Press, *Pakistan Heat Wave Kills More Than 1,200; More Dangerous Heat Expected*, 28 June 2015, available at https://weather.com/safety/heat/news/pakistan-heat-wave-latest-news [accessed 19 June 2025]

CNN, *A third of Pakistan is underwater amid its worst floods in history. Here's what you need to know,* 2 September 2022, available at https://www.cnn.com/2022/09/02/asia/pakistan-floods-climate-explainer-intl-hnk/index.html [accessed 17 June 2025]

CNN*, Climate change is making record-breaking heatwaves in India and Pakistan 100 times more likely,* 18 May 2022, available at: https://edition.cnn.com/2022/05/18/asia/climate-india-pakistan-heatwave-intl/index.html [accessed 19 June 2025]

CNN, *Pakistan's melting glacier are 'erupting' and worsening floods,* 1 September 2022, available at https://www.cnn.com/2022/09/01/asia/pakistan-flooding-glacier-outbursts-climate-intl/index.html [accessed 19 June 2025]

Dawn*, Time to develop resilience plan for Karahi against rising sea level*, 30 April 2020, available at https://www.dawn.com/news/1553312 [accessed 17 June 2025]

Finance Division, Government of Pakistan, *Pakistan Economic Survey 2023-24*, available at: https://finance.gov.pk/survey/chapter_24/2_agriculture.pdf [accessed 19 June 2025]

Germanwatch, *Climate Risk Index 2025*, 2 December 2025, available at: https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf [accessed 19 June 2025]

Government of Pakistan Ministry of Climate Change National Disaster Management Authority. *National Disaster Management Plan*. August 2012. https://www.ndma.gov.pk/storage/plans/July2024/mL5R38Yo3sEDqJrfnx9v.pdf [accessed 19 June 2025]
Government of Pakistan Ministry of Climate Change National Disaster Management Authority. *National Disaster Management Plan NDMP 2025*, available at:

https://www.ndma.gov.pk/storage/plans/March2025/sps3g997GvbYIOEpwvKw.pdf [19 June 2025]

Government of Pakistan, 2021. "Updated Nationally Determined Contributions 2021." Available at https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf

Internal Displacement Monitoring Centre, 2022 Global Report on Internal Displacement, available at: https://api.internal-displacement.org/sites/default/files/publications/documents/IDMC_GRID_2022_LR.pdf#page=37 [accessed 19 June 2025]

Ministry of Foreign Affairs Government of Pakistan, *Pakistan welcomes the historic decision of COP27 to establish the Fund for Loss and Damage*, 20 November 2022, available at https://mofa.gov.pk/pakistan-welcomes-the-historic-decision-of-cop27-to-establish-the-fund-for-loss-and-damage/ [accessed 19 June 2025]

Ministry of Planning, Development and Special Initiatives, *Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment*, available at https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf [accessed 19 June 2025]

National Library of Medicine, *Global Warming in Pakistan and its Impact on Public Health as Viewed through a Health Equity Lens*, February 2023, available at https://pmc.ncbi.nlm.nih.gov/articles/PMC9975889/#:~:text=Because%20of%20global%20warming's%20impact,risk%20of%20morbidity%20and%20mortality. [accessed 19 June 2025]

National Library of Medicine, *The effects of climate change on mental health and psychological well-being: Impacts and priority actions*, 5 December 2024, available at https://pmc.ncbi.nlm.nih.gov/articles/PMC11704568/#:~:text=In%20addition%20to%20the%20effects,be%20identified%20and%20efficiently%20addressed [accessed 20 June 2025]

Pakistan Council of Research in Water Resources, Islamabad (Pakistan). *Managing Water Scarcity in Pakistan: Moving Beyond Rhetoric,* available at: https://pcrwr.gov.pk/wp-content/uploads/2021/08/Managing-Water-Scarcity-in-Pakistan-2015.pdf [accessed 19 June 2025]

Pakistan Journal of Medical & Health Sciences, Alarming Heat Wave-2024: *The summer season in Pakistan*, available at: https://pjmhsonline.com/index.php/pjmhs/article/view/5535 [accessed 19 June 2025]

Pakistan Meteorological Department, *Pakistan Monsoon 2022 Rainfall Report*, available at: https://cdpc.pmd.gov.pk/Monsoon_2022_update/Pakistan_Monsoon_2022_Rainfall_Update.htmhttps://cdpc.pmd.gov.pk/Monsoon_2022_update/Pakistan_Monsoon_2022_Rainfall_Update.htm [accessed 19 June 2025]

Pakistan Ministry of Planning, Development and Special Initiatives, Main Report on Pakistan Floods 2022: Post-Disaster Needs Assessment, available at https://thedocs.worldbank.org/en/doc/4a0114eb7d1cecbbbf2f65c5ce0789db-0310012022/original/Pakistan-Floods-2022-PDNA-Main-Report.pdf

Phys.org, *Bridge collapse in Pakistan due to glacier lake outburst flood,* 16 May 2022, available at https://phys.org/news/2022-05-bridge-collapse-pakistan-due-glacier.html#:~:text=Extraordinary%20record-high%20temperatures%20in%20Pakistan%20triggered%20the%20collapse,damaging%20nearby%20homes%2C%20buildings%2C%20and%20two%20power%20plants. [accessed 19 June 2025]

ReliefWeb, *Pakistan Floods 2024 Situation Report – September 3, 2024*, available at: https://reliefweb.int/report/pakistan/pakistan-floods-2024-situation-report-september-03-2024#:~:text=Due%20to%20heavy%20rainfall%20in,Dadu%2DMoro%20and%20Amri%20bridges

The Guardian, *'We are living in hell': Pakistan and India suffer extreme spring heatwaves*, 2 May 2022, available at https://www.theguardian.com/world/2022/may/02/pakistan-india-heatwaves-water-electricity-shortages [accessed 19 June 2025]

The News International*, Climate challenges mount for Pakistan due to sea-level rise, warn experts*, available at https://www.thenews.com.pk/print/853791-climate-challenges-mount-for-pakistan-due-to-sea-level-rise-warn-experts [accessed 19 June 2025]

Time Magazine, *Climate Change is Straining Pakistan's Water. Tensions with India Could Make It Worse*, 9 May 2025, available at: https://time.com/7284470/india-pakistan-water-supply-climate-change/ [accessed 19 June 2025]

Tribune*, Climate change triggers widespread migration in Pakistan*, 8 December 2019, available at https://tribune.com.pk/story/2113842/climate-change-triggers-widespread-migration-pakistan [accessed 19 June 2025]

Tribune, *Consider climate change angle in uplift plans, rules SC*, 6 July 2022, available at https://tribune.com.pk/story/2364905/consider-climate-change-angle-in-uplift-plans-rules-sc [accessed 19 June 2025]

UN-Habitat, *Slum Upgrading*, available at: https://unhabitat.org/topic/slum-upgrading [accessed 19 June 2025]

UNICEF, *Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods*, 2 November 2022, available at https://www.unicef.org/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floods [accessed 17 June 2025]

UNICEF, *Schools for more than 2 million children in Pakistan remain inaccessible due to devastating floods*, 2 November 2022, available at https://www.unicef.org/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floodshttps://www.unicef.org/press-releases/schools-more-2-million-children-pakistan-remain-inaccessible-due-devastating-floods [accessed 17 June 2025]

United Nationals Office for the Coordination of Humanitarian Affairs, *Revised 2022 Floods Response Plan Pakistan*, 18 December 2023, available at: https://pakistan.un.org/sites/default/files/2022-09/Pakistan%202022%20Floods%20Response%20Plan%20-%20August%202022_0.pdf#:~:text=The%20Government%20is%20working%20to,over%20the%20next%20six%20months [accessed 19 June 2025]

United Nations Convention to Combat Desertification, *Global Land Outlook Second Edition,* 27 April 2022, available at https://www.unccd.int/sites/default/files/2022-04/UNCCD_GLO2_low-res_2.pdf [accessed 19 June 2025]

United Nations Development Programme, *Scaling-up of Glavial Lake Outburst Flood (GLOF) Risk Reduction in Northern Pakistan (GLOF II PROJECT PAKISTAN),* December 2022, available at https://www.undp.org/sites/g/files/zskgke326/files/2023-04/GLOF%20II%20Project%20%28Dec%202022%29_Project%20Brief_2023.pdf and https://www.undp.org/pakistan/projects/scaling-glacial-lake-outburst-flood-glof-risk-reduction-northern-pakistan [accessed 17 June 2025]

United Nations Office for Disaster Risk Reduction*, Floods after drought devastate Sindh's agriculture*, 26 August 2022, available at https://www.preventionweb.net/news/floods-after-drought-devastate-sindhs-agriculture [accessed 17 June 2025]

United States Institute of Peace, *Pakistan's Climate Challenges Pose a National Security Emergency*, 7 July 2022, available at https://www.usip.org/publications/2022/07/pakistans-climate-challenges-pose-national-security-emergency [accessed 19 June 2025]

United States Institute of Peace, *Pakistan's Roadmap for COP27: In Search of a Strategic Vision*, 8 November 2022, available at https://www.usip.org/publications/2022/11/pakistans-roadmap-cop27-search-strategic-vision [accessed 17 June 2025]

World Bank Group data, *Employment in agriculture, female (% of female employment) - Pakistan*, available at: https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS?locations=PK [accessed 17 June 2025]

World Bank Group data, *Population living in slums (% of urban population) - Pakistan*, available at: https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS?locations=PK [accessed 17 June 2025]

World Bank Group; Climate and Health Vulnerability Assessment April 2024, available at https://documents1.worldbank.org/curated/en/099070324142031034/pdf/P501993-7ac51308-d599-4527-8f4d-733583b5c276.pdf