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Addressing the human costs and consequences of the Pakistan flood disaster

Pakistan is in the eye of a global climate crisis. A series of meteorological disasters in 2022 included glacial outbursts in the Upper Indus Basin, urban flooding in Karachi and Hyderabad, torrential rains and run-offs in Balochistan, flash floods in southern Punjab, and unprecedented rains in central Sindh. The severe floods in Pakistan that began in June, 2022 have had devastating impacts. A staggering third of the country's landmass was under water with 3.6 million acres of crops destroyed and more than 750 000 livestock killed.¹ Almost 24 000 schools have been damaged² and thousands of roads and bridges lost. The economic costs of the floods, with the loss of infrastructure and crop and food production, are estimated to exceed US\$30 billion.³ This far exceeds the \$1.5 billion emergency relief that Pakistan had negotiated with the International Monetary Fund over the past year.⁴

With more than 33 million people affected by the floods and some 7.6 million people displaced, the death toll of over 1500 includes 552 children.^{2,5} Many of the people who have been displaced are from the most deprived communities and riverine areas, mostly from districts where poverty indicators are already high and development indicators are lagging. The floods have affected an estimated 16 million children and 650 000 pregnant women who will need maternal care during pregnancy and childbirth.⁶ Pakistan's health system, already weakened by the COVID-19 pandemic and the economic downturn,⁷ has been badly damaged with more than 1460 primary health facilities affected and 432 destroyed.⁸ In places affected by flooding, delivery of health care, access to essential medicines, and routine vaccination and disease surveillance have been disrupted.

The differences from Pakistan's previous flood disaster in 2010⁹ are stark. Despite warnings by the country's meteorological department, there was little coordination and the response from federal and provincial authorities was haphazard and inadequate.¹⁰ The National Disaster Management Authority and its provincial counterparts did not take rapid measures to strengthen embankments, clear major drains, or stockpile commodities for potential mass displacement.¹¹

A National Flood Response and Coordination Centre was only belatedly established on Aug 30, 2022.

The global recognition and response to the crisis was initially also slow and uncoordinated. It took the UN Secretary-General to launch a flash appeal for \$160 million¹² for some assistance to start trickling in. External commitments for flood relief are very slow and the visible scale and cost of the disaster dwarfs funding that has been committed.

What can and should be done? The immediate priority is to strengthen and complete the humanitarian assistance and rescue process and to move affected populations to safety, with provision of basic shelter, food, and urgent health care. Concurrently, primary care services and preventive strategies for health care need to be re-established, especially for women and children. With the disruption of health outreach and immunisation services, these should be prioritised as well as care for pregnant women and facilities to provide safe births. Additionally, provision of safe water, oral rehydration, and preventive strategies for dengue and malaria must be implemented universally. Another priority is to address food insecurity in Pakistan¹³ in the wake of the global food price crisis. Much of the current response in Pakistan is led by civic society representatives and non-governmental organisations, but going forwards the government and public sector programmes must provide a consistent and transparent



Reuters/Akhtar Soomro

role in coordination, equitable service delivery, and quality assurance across health and food systems.

This climate disaster was waiting to happen. In 2021 Khan and colleagues¹⁴ highlighted the risks of flooding in Pakistan and estimated that there was a 10% probability of floods every 10 years with a potential impact on the national gross domestic product of \$28.9 billion, with 11.9 million people affected and \$2.4 billion of urban damage in Pakistan. Notwithstanding the floods, Pakistan is one of the most water-stressed countries globally. The per-person annual availability of water declined from 5140 m³ in 1950 to 1000 m³ in 2019.¹⁵ The country's available water resources comprise 138 million acre feet (MAF) with a storage capacity of 13.7 MAF, which is only 10% of available water resources, with a carry-over capacity only sufficient for 36 days.¹⁶

A comprehensive climate adaptation and mitigation strategy is needed to implement actions in three areas: strengthen capacity to ensure that the water infrastructure and resources are sufficient in urban and rural settings; adopt climate-smart construction standards for reconstruction and development of infrastructure; and resource and empower local governments to provide municipal and environmental services. Against this backdrop, flood and water management plans need to be developed and appropriately resourced. A non-partisan national effort will be crucial for building climate resilience in Pakistan, including a national discourse and consensus on water conservation, interprovincial dialogue on water distribution and new reservoirs, and revamping the inadequate and dysfunctional drainage systems.

None of these necessary actions will be possible without political rapprochement and a national reconciliation process. Pakistan's political divisions in the past 6 months have been debilitating and led to policy inattention and compounded a deep economic crisis.¹⁷ For a country whose sovereign debt exceeds \$250 billion, the massive resources needed for relief and reconstruction are seemingly impossible but will need to be found. This process could start with reducing profligate spending by government officials,¹⁸ targeting safety nets for the poor, and prioritising investments. But high-income countries also have a responsibility to help address the climate emergency that is affecting Pakistan. For a country that contributes less than 0.5% to global carbon emissions annually,¹⁹ it is entirely

reasonable to seek climate retribution to rebuild Pakistan's infrastructure and flood control systems. This is not external assistance or charity; it is climate justice.²⁰

We declare no competing interests.

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