

PAKISTAN'S WATER WOES

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Water security has a direct impact on human security. It is a multidimensional challenge with complex undertones, as water security is both an increasing concern as well as critical for sustainable development. The reduced access to fresh water has far reaching consequences which include reduced food production, loss of livelihood options, and increased economic and geopolitical tensions, especially in volatile regions like South Asia. The problem is exacerbated due to poor water management and governance amidst changing demographics.¹

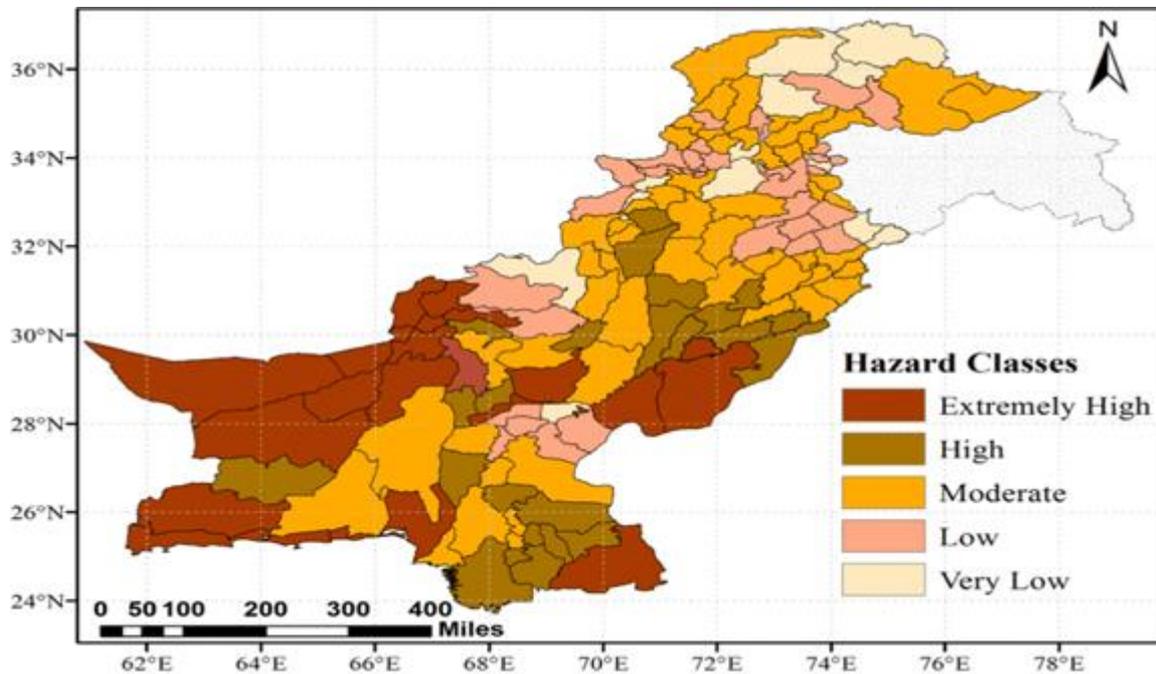
Over the last decades, exacerbating climate change and rising population demands have intensified water stress globally. This situation is particularly of concern in South Asia, home to 1.9 billion people. Pakistan is poised to be most directly impacted by the shifting climate and water patterns. Climate-induced water insecurity is already creating significant socio-economic and development challenges for Pakistan.²

Since April 2022, Pakistan has been experiencing an unpredictable heatwave that has seen some areas touch 50°C. One of the most alarming effects of the heatwave is the accelerated melting of Pakistan's glaciers in the north. Pakistan has more than 7,000 glaciers, one of the highest numbers in

¹ Mian Ahmad Naeem Salik, "Water Security: Challenges of Transboundary Water Issues between Pakistan and India," Strategic Studies, March 1, 2016, <https://issi.org.pk/water-security-challenges-of-transboundary-water-issues-between-pakistan-and-india/>

² Webinar, "Water Insecurity in Pakistan," Stimson, May 19, 2022, <https://www.stimson.org/event/water-insecurity-in-pakistan/>

the world, many of them in the Himalayan region. A study by the University of Leeds finds that as a result of human-induced climate change, the ice from glaciers in the Himalayas is melting at least 10 times higher than the average rate over past centuries. The Himalayas have lost 40 percent of their ice over several hundred years leading to a water crisis in the country.³



Development of drought hazard index for vulnerability assessment in Pakistan⁴

Pakistan's Water Security Challenges

Pakistan depends on adequate supplies of water for agriculture, industry, create power, ensure public health, and maintain essential ecosystems. Water security is an increasingly important issue that constitutes one of the biggest challenges to Pakistan's development. Moreover, global Climate Change threatens to intensify these strains, upsetting precipitation patterns and altering river flows in the Indus Basin. It is estimated that Pakistan will be the most water stressed country in the region by 2040.⁵

Pakistan fosters one of the lowest crop yields per unit of water in the world. In fact, irrigation delivery systems in the Indus basin have under-performed historically despite large investments in

- ³ "Himalayan glaciers melting at 'exceptional rate'," University of Leeds, December 20, 2021, <https://www.leeds.ac.uk/news-environment/news/article/4991/himalayan-glaciers-melting-at-exceptional-rate#:~:text=The%20study%2C%20led%20by%20the,as%20the%20little%20ice%20Age.>
- ⁴ Shahzada Adnan and Kalim Ullah, "Development of drought hazard index for vulnerability assessment in Pakistan," Springer Link, June 21, 2020, <https://link.springer.com/article/10.1007/s11069-020-04116-3>
- ⁵ Andrew Maddocks, Robert Samuel Young and Paul Reig, "Ranking the World's Most Water-Stressed Countries in 2040," World Resource Institute, August 26, 2015, <https://www.wri.org/insights/ranking-worlds-most-water-stressed-countries-2040>

civil infrastructures and management institutions. Over 30 million citizens have no access to clean drinking water. In three years, Pakistan will be staring at acute water scarcity. According to the 'Global Land Outlook' report released by the United Nations, Pakistan along with 23 other countries has been listed as "drought-hit". Pakistan is facing drought emergencies over the past two years (2020-2022).⁶

An important part of the water supply has been groundwater which is under threat because of fast depleting aquifers like elsewhere in Asia. More than 60 percent of irrigation, 70 percent of drinking water and 100 per cent of the industry depend on groundwater. The aquifer in the Indus Basin, considered the lifeline of Pakistan's economy, is the second most stressed in the world. In most areas, groundwater tables have fallen by up to 100 feet within the last decade or so. According to the Pakistan Institute of Development Economics Report 2022, over 80 percent of water resources were utilized by four major crops –rice, wheat, sugarcane, and cotton—which contribute only 5 percent to GDP.⁷

Pakistan's persistent water crisis has taken a turn for the worse at the start of the summer, as the cumulative river supplies dipped to 97,000 cubic feet per second (cusecs), taking the national shortage to a whopping 51 percent against the 29 percent calculated previously. This has led to shortage of water for final watering of wheat and cotton sowing, resulting in a pressure on food security (wheat) and major cash (cotton) crop availability. Pakistan began the season with both of its major reservoirs exhausted: Tarbella dam and Chashma at a dead level and Mangla Lake holding a paltry 354,000 acre-feet. Patterns of drought and wet weeks were becoming quicker and graver, with drought spells getting prolonged and wet cycles shorter.⁸

Recommendations

- The discussion on water security needs to go beyond bilateral negotiations and the international law framework and examine the ways through which states in the region can adapt to the emerging interests and need to manage their water resources.
- Overpopulation has already put pressure on the available water resources so it is also important to control the rise in population growth.

⁶ News Report, "UN lists Pakistan among drought-hit countries," The News, May 16, 2022, <https://www.thenews.com.pk/print/958172-un-lists-pakistan-among-drought-hit-countries>

⁷ ANI, "Pakistan likely to face acute water shortage within three years," The Print, May 2, 2022, <https://theprint.in/world/pakistan-likely-to-face-acute-water-shortage-within-three-years/939893/>

⁸ Ahmad Fraz Khan, "Crops likely to suffer as water crisis boils over," Dawn, May 1, 2022, <https://www.dawn.com/news/1687666>

- There is a need for adequate management of water supplies by Pakistan within its borders by starting work on the stalled water storage projects like the Diamer-Bhasha, Dasu and Bunji dams, which would not only cater to its water needs but also improve its energy generation capacity.
- Pakistan needs to transform its policy towards water, especially freshwater, from a public good into an economic good through adequate water pricing to conserve it.
- Collaboration among the community, local government bodies, and development organizations is required to ensure that appropriate technologies are deployed in the regions that are feeling the impacts of climate change.
- In addition, there is a need to resolve the outstanding water disputes through proper bilateral or multilateral solutions. Also, effective implementation of general International Law is also imperative to safeguard the rights of the lower riparian states.

Conclusion

The current wave of water scarcity is not sudden. Successive governments have been warned on multiple occasions about the gravity of the issue. The extent of the issue is such that, regardless of an individual province's position on water capacity now, every Pakistani citizen will find themselves short on water. The increasing population has also worsened the water indicators for the future. Pakistan is the fourth largest user of water in the world.

The first-ever National Security Policy (NSP) of Pakistan declares the economy as one of the main indicators of national security. However, the architects of the NSP and other policies must link water with economic prosperity. Pakistan's economy is mostly agrarian. It is now not hard to conceive how closely water and the economy are intertwined. If not coped with in time, it will affect big portions of Pakistan's economy.