

MULTISECTORAL IMPACTS OF CONTINUED DROUGHT ON PAKISTAN'S ECONOMY

By
Mian Ahmad Naeem Salik
Research Associate

Centre for Strategic Perspectives (CSP), ISSI
Email Address: ahmad.salik@issi.org.pk

Edited by
Dr Neelum Nigar

April 14, 2025

(Views expressed in the brief are those of the author, and do not represent those of ISSI)



Introduction

Pakistan is facing an increasingly severe drought crisis, driven by shifting climate patterns, declining rainfall, and rising temperatures. As Pakistan prepares for the upcoming Kharif season, fears of an unprecedented water shortage have raised alarms among irrigation experts and policymakers. With dam levels at historic lows, reduced river flows, and declining snowfall, the country faces a severe crisis that could disrupt food production, trigger inflation, and worsen socio-economic conditions.¹ The persistent water shortages can have far-reaching implications, particularly for the agricultural sector, which plays a crucial role in national GDP and employment. Given Pakistan's reliance on agriculture and water-intensive industries, prolonged drought conditions pose significant threats to food security, economic stability, and rural livelihoods.

Climate Change and La Niña's Impact

Pakistan has been listed among the 20 countries at high risk of severe dry conditions due to the anticipated emergence of La Niña in late 2024 and early 2025. La Niña, a climate phenomenon

¹ "PMD issues dire warning as drought conditions worsen across Pakistan," Samaa, March 25, 2025, <https://www.samaa.tv/index.php/2087330911-pmd-issues-dire-warning-as-drought-conditions-worsen-across-pakistan>

characterized by cooler-than-average sea surface temperatures in the central and eastern Pacific Ocean, disrupts global weather patterns and has historically led to intensified droughts, erratic rainfall, and prolonged dry spells in South Asia, including Pakistan.²

During La Niña events, Pakistan typically experiences reduced rainfall from January to May and above-normal rainfall from June to October in parts of the country. However, with the ongoing global climate shifts, these patterns have become increasingly unpredictable. Experts warn that La Niña, following the strong El Niño of 2023-24, may intensify water shortages, crop failures, and food insecurity in regions already struggling with extreme weather events.³

Recognizing the potential threats posed by La Niña, the Food and Agriculture Organization (FAO) introduced an Anticipatory Action and Response Plan to mitigate its effects on agriculture and food security in vulnerable countries, including Pakistan. The Plan focuses on pre-emptive measures that will aim to address the adverse effects of drought and extreme weather events through early warning systems, resource allocation, and capacity development of farmers.⁴

Declining Rainfall and Water Scarcity

Pakistan has experienced a significant decrease in rainfall over the past year, causing water scarcity across the country. Winter precipitation in 2024–2025 was recorded at 42% below normal levels, with Sindh experiencing a staggering 63% decline, Balochistan 53%, Punjab 41%, Khyber Pakhtunkhwa 35%, and Azad Jammu and Kashmir 29%.⁵ These deficits have severely impacted key water reservoirs, including Tarbela and Mangla Dams, both of which have reached critically low levels.

The Indus River System Authority (IRSA) has projected a 43% water shortage for the upcoming Kharif 2025 season, warning that inflows into the rim-station rivers are below normal due to a 31% decline in snowfall.⁶ These conditions have depleted groundwater levels and increased dependence on an

² Amin Ahmed, "Pakistan at risk of facing dry conditions due to La Nina," Dawn, October 12, 2024, <https://www.dawn.com/news/1864666>

³ "Climate change: La Niña fades, as global heat keeps rising," UN News, March 6, 2025, <https://news.un.org/en/story/2025/03/1160836>

⁴ "La Niña Anticipatory Action and Response Plan January 2025 update," FAO, Accessed on March 27, 2025, <https://openknowledge.fao.org/server/api/core/bitstreams/a1a2466c-29dc-41d4-8d53-42b01038c2e6/content>

⁵ "Pakistan faces drought as heatwave threatens water crisis: Chief Meteorologist warns," APP, March 26, 2025, <https://www.app.com.pk/national/pakistan-faces-drought-as-heatwave-threatens-water-crisis-chief-meteorologist-warns/>

⁶ "Kharif set to begin with 43% water shortage," Tribune, March 27, 2025, <https://tribune.com.pk/story/2536629/kharif-set-to-begin-with-43-water-shortage>

already strained water supply, intensifying the risk of agricultural collapse and socio-economic instability.

Impact on Agriculture and Food Security

Agriculture is a cornerstone of Pakistan's economy, contributing approximately 19% to GDP and employing 39% of the workforce.⁷ However, persistent drought conditions have led to a decline in crop production, particularly affecting staple crops like wheat. Reports indicate that farmers in Punjab and Sindh are facing delays in seed germination and stunted crop growth, with wheat yields projected to decline by 30–35%. To compensate for the shortfall, Pakistan has been forced to import over 3.14 million tons of wheat, further straining its foreign exchange reserves.⁸

The water deficit will also have a detrimental impact on Kharif crops, including rice, maize, and sugarcane. Early cotton sowing in Sindh is anticipated to be severely affected, while sugarcane production is also expected to decline. With reservoirs at critically low levels, the risk of prolonged food insecurity remains high.⁹ Reduced agricultural output will contribute to rising inflation, making essential food commodities less affordable for large segments of the population.

Drought Effect on the Livestock Sector

The livestock sector, which accounts for approximately 11% of Pakistan's GDP, has not been spared from the effects of drought. Pastoral farming communities, particularly in Sindh and southern Punjab, are facing acute water shortages and declining grazing land. Reports indicate that livestock mortality in Tharparkar has increased by 20% compared to the previous year.¹⁰ The scarcity of fodder and water will result in deteriorating animal health, declining milk and meat production, and economic losses for rural communities that rely heavily on livestock for their livelihoods.

Temperature Rise and Glacial Melting

Rising temperatures will exacerbate Pakistan's drought crisis. Forecasts suggest that temperatures could increase by 3 to 5°C above normal levels, leading to prolonged heatwaves in southern

⁷ "Agriculture in Pakistan: A Comprehensive Overview," Pakistan and Gulf Economist, January 14, 2025, <https://www.pakistangulfeconomist.com/2025/01/14/agriculture-in-pakistan-a-comprehensive-overview/>

⁸ Javaid ur Rahman, "Rainfall Roulette: The dire effects of drought on Pak economy, ecology," News, March 19, 2025, <https://www.nation.com.pk/19-Mar-2025/rainfall-roulette-the-dire-effects-of-drought-on-pak-economy-ecology>

⁹ "Only drinking water available amid unprecedented shortage," Dawn, March 27, 2025, <https://www.dawn.com/news/1900568/only-drinking-water-available-amid-unprecedented-shortage>

¹⁰ Javaid ur Rahman, "Rainfall Roulette: The dire effects of drought on Pak economy, ecology," News, March 19, 2025, <https://www.nation.com.pk/19-Mar-2025/rainfall-roulette-the-dire-effects-of-drought-on-pak-economy-ecology>

regions.¹¹ These extreme conditions will intensify water shortages and further stress the agricultural sector.

Additionally, higher temperatures will accelerate the melting of glaciers in the northern areas, temporarily increasing river flows but also heightening the risk of Glacial Lake Outburst Floods (GLOFs) and flash floods.¹² This paradoxical situation entails both short-term benefits and long-term threats, as erratic water availability makes agricultural planning increasingly difficult.

Flash Droughts and Urban Impact

The Pakistan Meteorological Department (PMD) has warned of an increase in flash droughts—rapidly intensifying dry spells caused by fluctuating precipitation, rising temperatures, and shifting wind patterns.¹³ These conditions are expected to further elevate water demand, worsening the already strained water supply system.

Furthermore, the persistent lack of rainfall added to the smog crisis, particularly in Punjab, where dry weather had trapped airborne pollutants, resulting in hazardous air quality and reduced economic productivity.¹⁴ The urban heat island effect will also intensify heatwaves in the coming months, leading to increased energy consumption and worsening public health conditions, and will exacerbate the effects of extreme drought in major metropolitan centres.¹⁵

Economic Consequences and Rising Rural Poverty

The economic impact of drought will be evident across multiple sectors. Food prices will surge due to reduced agricultural output, leading to higher inflation. Furthermore, Pakistan's import bill will increase significantly due to the need for additional wheat and other food products, placing further pressure on foreign exchange reserves.

¹¹ "Pakistan faces drought as heatwave threatens water crisis: Chief Meteorologist warns," APP, March 26, 2025, <https://www.app.com.pk/national/pakistan-faces-drought-as-heatwave-threatens-water-crisis-chief-meteorologist-warns/>

¹² "PMD chief warns temperatures could soar up to 5°C above normal," Tribune, March 27, 2025, <https://tribune.com.pk/story/2536586/pmd-chief-warns-temperatures-could-soar-up-to-50c-above-normal>

¹³ "Pakistan faces mild to moderate drought conditions," Pakistan Observer, March 26, 2025, <https://pakobserver.net/pakistan-faces-mild-to-moderate-drought-conditions/>

¹⁴ "Pakistan faces drought alert as rainfall drops up to 62% below normal," Geo.Tv, March 24, 2025, <https://www.geo.tv/latest/596928-pakistan-faces-drought-alert-as-rainfall-drops-up-to-62-below-normal>

¹⁵ Mian Ahmad Naeem Salik and Mir Sher Baz Khetran, "Deadly Heatwaves in Pakistan and the Role of Urban Planning," ISSI, September 11, 2024, https://issi.org.pk/wp-content/uploads/2024/09/IB_Ahmad_Salik_and_Khetran_Sept_11_2024.pdf

The increasing cost of essential commodities will disproportionately affect lower-income groups, causing socio-economic disparities. Crop failures will lead to financial distress among farmers, causing many to be impoverished. As a result, migration from rural areas to urban centres will increase, straining urban infrastructure and public services even further.¹⁶

Policy Recommendations and Conclusion

Pakistan's ongoing drought crisis is a stark reminder of the broader climate challenges the country faces. With rainfall levels declining, temperatures rising, and water shortages becoming more frequent, urgent action is required to prevent long-term economic and social instability. Addressing Pakistan's worsening drought crisis requires a combination of short-term interventions and long-term structural reforms which include:

1. The adoption of modern irrigation techniques, such as drip and sprinkler systems, can significantly improve water efficiency. Rainwater harvesting and groundwater recharge initiatives should also be prioritized.
2. Encouraging farmers to adopt drought-resistant crop varieties can help mitigate food shortages and ensure agricultural sustainability.
3. Strengthening early warning systems and developing contingency plans can help communities cope with prolonged drought conditions.
4. Measures to reduce the urban heat island effect, such as increasing green spaces and improving water conservation in cities, should be implemented.
5. The shifting of focus from large-scale dams to localized, small-scale water conservation strategies will ensure more sustainable water usage.
6. Pakistan must actively engage in international climate adaptation initiatives to secure necessary funding and technical assistance for drought mitigation efforts.

Furthermore, Pakistan's vulnerability to La Nia underscores the urgent need for comprehensive climate adaptation strategies to safeguard agriculture, water resources, and food security. Barring a proactive approach, the economic and social consequences of La Nia could be severe, causing stiffer challenges from food shortages to inflation to economic disruption. The time for action is now.

¹⁶ Aamir Latif, "Pakistan's agriculture feels heat of winter drought," Anadolu Ajansı, February 6, 2025, <https://www.aa.com.tr/en/asia-pacific/pakistan-s-agriculture-feels-heat-of-winter-drought/3472846#>

Proactive measures are imperative to ensure the sustainability of Pakistan's economy and the wellbeing of its people.