

Essay

Water Crisis in Pakistan: A Shared Responsibility of the Government and the People

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Author and Chairman of US atomic energy commission
once said:

"No armies with bombs and shellfire could
divest a land so thoroughly as Pakistan would
be devastated by the simple expedient of
India's permanently shutting up the source
of water that keeps the field and people of
Pakistan green." Water is becoming an
existential issue for Pakistan. The country is facing
grim situation regarding its fast depleting
^{fresh} water resources. For Pakistan primarily an agrarian
country water becomes the most important of all
the natural resources to be secured and
managed. Being a single basin country, Pakistan
relies heavily on the Indus Basin water to
meet its domestic, agricultural and industrial
needs. The water crisis in Pakistan is a
multifaceted issue, exacerbated by rapid population
growth, climate change, inefficient water management
and geopolitical tensions. Addressing Pakistan's
water crisis necessitates a collaborative approach,
where both governmental policies and public participation
play pivotal role in sustaining ensuring sustainable
water management.

Firstly, the current state of water crisis in Pakistan is marked by rapidly declining water per capita water availability. According to Pakistan Strategic Country Environmental Assessment Report²⁰⁰⁶, at the time of 1947, per capita water availability in Pakistan was ~~1400~~⁵⁰⁰⁰ cubic meters, which ~~was~~ ^{good well substantiated data} reduced to 1100 cubic meter in 2006. It is expected that it will further decline by less than 700 cubic meters per capita. This declining water availability per capita is due to current issue of increasing population. In 1951, the population of Pakistan was around 34 million which rapidly increases till now and is estimated approximately 240 million by 2024. ~~Climate change further exacerbates the problem by declining altering precipitation rate and thereby affecting monsoon rainfall patterns, increasing glacial melting.~~ Climate change further exacerbates the problem i.e irregular monsoon patterns and accelerated glacial melting, as explained by Islamabad Policy Research Institute IPRI are disrupting water availability and distribution. Furthermore, Pakistan has a very limited water storage capacity barely storing 30 days of water. It is estimated if current issues persist, Pakistan would become water scarce country by 2040, threatening food security, economic stability and public health. Therefore water crisis in Pakistan is highlighted by declining per capita water availability.

Secondly, the current state of water crisis in Pakistan leads to over-extraction or depletion of ground water sources. Some experts are of the view that Punjab has high level of subsoil water which can be extracted and used for agriculture. But this picture is wrong. As tube wells or other sources which extract the ground water has already depleted the sub-soil water level, seriously affecting the soil fertility. The water available in our canals and tube wells is around 183 MAF whereas our current need in 2025 is around 157 MAF, so rest of the water gets wasted. People in Pakistan rely heavily on ground water sources for drinking, agricultural and industrial usage, which ultimately leads to declining underground water table by several meters, particularly in Punjab and Balochistan. The widespread use of tube wells, coupled with an absence of effective regulatory framework and old and ineffective agricultural practice of flood irrigation further deplete the ground water resources and lead to wastage of water in flood irrigation system. Therefore, depleting ground water resources exacerbates the current state of water crisis in Pakistan.

Thirdly, the biggest aspect of current state of water crisis in Pakistan is attributed to lack of inadequate water storage.

capacity. Despite being an agrarian country, Pakistan does not have enough water storage reservoirs. Due to lack of adequate water storage capacity and management, most of the rainwater and flood water gets wasted which Pakistan can be used for its agricultural benefit. Pakistan has only Tarbela and Mangla dams, both constructed in 1970s and 1960s respectively and Chasma Bannu as water reservoirs. Water storage capacity of both these dams have been significantly reduced due to silt sedimentation. One of the great and important project in this aspect is Kalabagh Dam which remain unconstructed due to political disagreement between provinces. Former WAPDA chairman Engineer Shamsul Mulk once remarked "Those opposing Kalabagh Dam are unaware of water crisis Pakistan is heading towards. The dam is not a political issue but a matter of survival." Water Pakistan has only water storage capacity of 30 days while the recommended water storage capacity for water stressed countries is 120 days. On the other hand, India can store water for 120-220 days, Egypt for 700 days and USA for 900 days. Therefore, lack of water storage reservoirs especially dams and poor water storage infrastructure worsen the current state of water crisis in Pakistan.

One of the most critical aspect of water crisis in Pakistan is over-dependence on the Indus Basin and its tributaries.

Indus Water System consists of Ravi, Beas, Satluj, ^{Indus} Jhelum and Chenab. In 1960, both India and Pakistan signed Indus Water Treaty, according to which India gained control over eastern rivers (Ravi, Beas, Satluj) whereas Pakistan gained control over Western Rivers (Indus, Jhelum, Chenab). These western rivers are lifeline of Pakistan's agricultural sector which contributes to approximate 23% of GDP and 37.4% of labour force of Pakistan. All these western river flow from India to Pakistan making India upper riparian and Pakistan lower riparian. Over time, India started building numerous hydroelectric projects and dams on western rivers i.e. Salal Dam (1978), Mulai Barrage, Krishnaganga hydroelectric dam and Baglihar dam, thus diverting river flow and violating IWT. Not only our agricultural sector is dependent on Indus Basin, but our domestic and agricultural industrial sector also heavily relies on it. Indus Basin and its tributaries account for nearly 90% of freshwater resources.

However the failure to diversify water sources such as through rainwater harvesting groundwater recharge or desalination technologies, has left the entire nation reliant on single river system. The challenge

of Indus Water Treaty Council, Hafiz Zahoore-ul-Hassan Dahan has warned that Pakistan could become another Somalia and Ethiopia. He said that the Indian projects were aimed at controlling the water of Chenab, Jehlum and Indus Rivers, were illegal and a clear violation of IWT. Thus, overdependence on Indus Basin and its tributaries is a major reason behind current state of water crisis in Pakistan.

Another major reason behind recent state of water crisis in Pakistan is unilateral suspension of IWT by India. After Phalgam attack on 22 April 2025 in Indian Occupied Jammu and Kashmir, in which 26th tourists were killed and over 20 other injured, India held Pakistan ^{accountable} of this attack without any proof and unilaterally suspended IWT. Narendra Modi said: "Blood and Water can not flow together." Whereas Pakistan Government declared suspension of IWT as "Act of War". The cessation of water flow and potential reduction of river flow jeopardize crops yield particularly staples like wheat and rice, exacerbating food security. Moreover hydropower projects such as Tarbela and Mangla which are crucial for Pakistan's electricity supply face operational challenges due to reduced water availability. President Arif Ali Zardari said: "The water crisis in Pakistan is directly linked

to relations with India. Resolution could prevent an environmental catastrophe in South-Asia, but failure to do so could fuel the fire of discontent that could lead to extremism and terrorism." Therefore, the unilateral suspension of IWT by India is another major factor behind current state of water crisis in Pakistan.