Pakistan has transitioned from relative water abundance to increasing scarcity over the past decades, posing major problems as water insecurity hampers social welfare, environmental health, and economic growth. Supply pressures from climatic changes and population growth now outstrip Pakistan's available water resources. Recent devastating floods and droughts have underscored the need for climate-adaptive reforms to governance at the national, provincial, and local levels. Experts predict Pakistan will shift from water-stressed presently to completely water-scarce by 2035 given rising demands and environmental shifts reducing glacier, snow, and rainfall. Implementing integrated, sustainable policies that reflect water's vital role across all sectors is an urgent priority for the country. Recent disasters revealed weaknesses in existing management, underscoring calls for building climate resilience through improved sharing, efficiency, and environmental protection around this essential resource (Ahmad et al., 2022).

Two surprising facts I learned are that agriculture uses about 90% of Pakistan's water resources yet contributes only around 20% to our GDP. As our population grows, it seems inefficient and unsustainable for such a water-scarce country to use so much of this precious resource for farming. I also found concerning that water-borne illnesses from bacteria, viruses and parasites cause many deaths each year in Pakistan, especially for vulnerable children under 5 years old.

The difference between water quality and quantity is important. Water quality means how clean, safe, and suitable water is for human use and consumption. It is affected by pollutants from agriculture, industry, and households. Water quantity refers to the volume of water available from sources like rivers, groundwater, and rainfall. It depends on supply from weather systems and snowmelt, how much we can store in reservoirs, and how much we withdraw for farming, power, and households.

In my opinion, Pakistan's biggest water issue is quantity - we simply do not have enough water to meet our country's needs. We are an arid region, yet our fast-rising population, over 200 million, and water-intensive agriculture for crops like rice and sugar put great demands on limited water supplies. Climate change is projected to reduce glacier and snow volumes in coming years too. Droughts and extreme water shortages are all too common, severely impacting farms, cities, and livelihoods when they occur. Distributing scarce supplies between provinces and among competing users causes friction as well.

Yes, tensions and even violence frequently erupt over water sharing and access, both between provinces within Pakistan and with neighboring India regarding shared Indus tributaries. Our government tries to resolve disputes through legal processes, but frustrations often boil over into protests and clashes between communities in water-stressed regions. Some disputes have persisted for decades without resolution. It is a complex issue intertwined with politics, poverty, and injustice.

Integrated Water Resources Management (IWRM) is an approach to sustainably manage water quantity, quality, and access. It is a collaborative process bringing together all major stakeholders in a region or river basin to make coordinated decisions based on environmental, social, and economic considerations. The goal is to balance and optimize water usage for households, agriculture, industry, power, and ecosystems.

I think IWRM principles could significantly help address Pakistan's chronic water problems if applied properly. An integrated, cooperative system for monitoring supply and demand could improve allocation especially in drought years to ensure priority uses like drinking water and reduce loss.

Environmentally sustainable limits on groundwater pumping are important too before aquifers are drained entirely. However, effectively implementing IWRM faces substantial political, cultural, and administrative challenges in Pakistan. But it provides a constructive framework at least.

Reference:

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