

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

Outline

A. Introduction

1. Evolution of global water emergency
2. Brief overview of Pakistan's water crisis
3. Thesis statement

B. Understanding the Water Crisis in Pakistan

1. Insufficient water resources
2. Gap between water availability and growing demand
3. Public apathy and lack of awareness.

C. Government's Responsibilities in Addressing the Crisis

1. Policy formulation and implementation
 - a. Example of The National Water Policy, 2018
2. Building dams and water reservoirs
 - a. Pending projects like the Diamer-Basha Dam
 - b. Ongoing construction of Neelum-Jhelum Dam
3. Upgrading Old Irrigation systems
 - a. Work of Sindh Irrigation and Drainage Authority
 - b. Modernization of Indus Basin irrigation system
4. Improving performance of Water Authorities
 - a. Strengthening of WAPDA
5. Managing cross-border water sharing issues
 - a. Efficient management of IWT
 - b. Ongoing dialogue between Pakistan and India regarding hydroelectric plants

D. Public's Responsibilities in Addressing the Crisis

1. Water conservation practices
 - a. Example of campaigns like "Save Water, Save

Future

2. Changing agricultural habits

a. Introduction of drought-tolerant crops

3. Using Modern Irrigation techniques

a. Example of drip irrigation method.

4. Spreading knowledge about water ethics

a. Involvement of NWCC

5. Involving people in local water projects

a. Example of Participatory Irrigation Management Program

E. Conclusion

Essay

"The wars of the next century will be fought over water, not oil", predicted by Ismail Serageldin, former Vice President of the World Bank. This prophecy no longer belongs to a distant future - it unfolds today, as the world confronts a deepening water crisis - that threatens not just ecosystems but economies, peace, and human survival. As the world steps deeper into 21st century, the global water crisis has escalated into a fully-blown emergency, threatening livelihoods, food security, and stability - especially in developing countries. Pakistan, once a water abundant nation, now stands on the brink of scarcity, with per capita water availability plunging below the threshold of water stress. From vanishing rivers to drying aquifers, the country grapples with mounting challenges due to infrastructural limitations, mismanagement, and public negligence. In this context, addressing the water crisis

cannot be the burden of one entity alone. It demands shared responsibility between the government and the people. This essay will explore the responsibilities of government in overcoming the crisis through policy formulation and implementation, construction of dams and reservoirs, and the modernization of out dated irrigation systems. At the same time, it will highlight the vital responsibilities of citizens - adopting water conservation habits, transforming agricultural practices, and embracing modern irrigation techniques - to collectively safeguard Pakistan's most precious resource. Thus, tackling Pakistan's water crisis is not solely the duty of the state but a collective obligation where both governance and grassroots action must converge to secure a sustainable water future.

To begin with, in understanding the water crisis in Pakistan, the foremost cause is the insufficiency of water resources. Pakistan's river system, dominated by the Indus and its tributaries, delivers roughly 145 million acre-feet of water, annually, yet the country has constructed storage capacity for only about 13 million acre-feet (less than 10% of its total flow). This glaring gap means that over 90% of floodwaters and seasonal runoff escape downstream without utilization. According to the Pakistan Council of Research in Water Resources, the nation's effective storage per capita is among the lowest

globally - just 50 cubic meters per person, compared to the 1500 cubic meters considered safe in water rich countries. Such meager reserves leave Pakistan vulnerable to even minor fluctuations in river flow or rainfall. Thus, ^{the} insufficiency of water resources forms the bedrock of the country's escalating water crisis.

In addition to this, the water crisis in Pakistan is further exacerbated by the growing disparity between limited water availability and soaring national demand. As the population expands and urbanization accelerates the strain on existing water supplies intensifies. Pakistan's population has ballooned from 34 million in 1951 to over 240 million today, yet its water infrastructure remains largely unchanged. According to the International Monetary Fund (IMF), Pakistan ranks third among countries facing acute water shortages, with demand expected to exceed supply by 2030 if current trend persists. This alarming mismatch places immense pressure on agriculture, domestic usage, and industrial production. Thus, the rise in demand against a backdrop of stagnant water supply has made water scarcity a looming national threat.

Moreover, public apathy and lack of awareness significantly aggravate the water crisis in Pakistan. A large portion of population remains uninformed about the severity of water scarcity and

continues to waste water in everyday activities. From leaving taps running to overwatering fields, water misuse is common and often unchallenged. A report by Pakistan Institute of Development Economics (PIDE) reveals that nearly 30% of urban household water is wasted due to negligence and poor usage habits. Additionally, water conservation practices such as rain water harvesting or re-using greywater, are rarely implemented at the community level. Hence, it is proven that public apathy and lack of awareness is a pressing cause of water crisis in Pakistan.

These pieces of evidence underscores the critical causes that establish water crisis in Pakistan, offering a brief yet urgent overview of the issue. This analysis below will now explore the responsibilities of the government in addressing this escalating water crisis.

Firstly, effective policy formulation and implementation stand as the cornerstone of government's responsibility in combating Pakistan's water crisis. Comprehensive, forward-looking policies are essential to regulate water usage, improve distribution, and ensure long term sustainability. Recognizing this, the government introduced the **National Water Policy in 2018**, marking the country's first cohesive framework for managing water resources. The policy outlines goals, such as improving water governance,

enhancing storage capacity, promoting water-efficient technologies, and addressing climate-induced water stress. However, despite its promising vision, implementation has remained uneven due to weak institutional coordination and limited political will. Without translating policy into actionable and enforceable measures, the crisis will continue to deepen.

Thus, policy formulation and implementation emerge as foundational steps to be taken by government.

Secondly, building dams and water reservoirs is a critical government responsibility in order to address the water crisis in Pakistan. Dams not only store surplus water for dry seasons but also regulate river flows, generate hydro-electric power, and support irrigation. Despite having one of the world's largest irrigation networks, Pakistan can store water for only 30 days, far below the recommended 120 days for water-secure countries. To address this, the government has initiated major projects such as the **Diamer-Bhasha Dam**, which, once completed, is expected to add 8.1 million acre-feet of storage and 4,500 megawatts of electricity. Additionally, the **Neelum-Jhelum Hydropower Project**, nearing completion, is already enhancing energy production and water management. These infrastructure initiatives are vital to strengthening national water security and cushioning the

effects of climate variability. Thus, the construction of dams and reservoirs represents a vital governmental responsibility toward ~~the~~ addressing water crisis.

Thirdly, upgrading outdated irrigation infrastructure is an indispensable responsibility of the government in combatting Pakistan's escalating water crisis. Much of the country's irrigation system - particularly the **Indus Basin Irrigation System**, the largest contiguous canal network in the world - remains inefficient due to aging canals, water losses, and outdated practices. Recognizing this, the government has taken steps towards modernization through initiatives such as the **Sindh Irrigation and Drainage Authority (SIDA)**, which aims to decentralize irrigation management, improve water distribution, and rehabilitate canals for better efficiency. Hence, the modernization of outdated irrigation system remains a pivotal governmental responsibility.

Moreover, enhancing the performance of water management authorities is a crucial governmental obligation in addressing Pakistan's deepening water crisis. Institutions such as **Water and Power Development Authority (WAPDA)** play a central role in planning, developing, and managing water and hydropower resources across the country. However, limited capacity and inadequate funding have hindered their effectiveness. Recognizing these

challenges, the government has recently undertaken efforts to restructure and strengthen WAPDA, increasing its technical capabilities, accelerating dam construction projects, and improving inter-agency coordination. Initiatives like the Water Vision 2025, spearheaded by WAPDA, aim to develop multiple dams and water conservation schemes to ensure water security. Thus, strengthening institutions and enhancing performance of water management is an essential governmental responsibility.

Likewise, managing cross-border water sharing challenges remains a critical responsibility of the Pakistani government. The Indus Water Treaty of 1960, brokered by the World Bank, governs the distribution of the Indus River system between Pakistan and India. While the treaty has largely held firm, recent disputes - especially concerning Indian hydroelectric projects on western rivers like Kishan Ganga and Ratle - have intensified tensions. Pakistan has raised concerns over potential violation of treaty, fearing reduced downstream flows. In response, the government has engaged in technical and diplomatic dialogues with India, seeking arbitration through international forums and utilizing legal provisions within Indus Water Treaty framework. Thus, the efficient management of cross border water sharing challenges stands as a crucial governmental responsibility.

Following his brief review of the government's responsibilities in addressing the water crisis in Pakistan, it is imperative to recognize that this challenge is not solely institutional. Rather, it is a shared responsibility of people of Pakistan. The next section will explore how the citizens of Pakistan play a vital role in alleviating the crisis.

First and foremost, adopting water conservation practices is one of the most immediate and impactful responsibilities of the people in combatting Pakistan's escalating water crisis. Simple yet effective actions—like fixing leaking faucets, using buckets instead of hoses, and turning off taps when not in use—can collectively conserve vast quantities of water. Public initiatives such as the "Save Water, Save Future" campaign have been a pivotal in raising awareness and inspiring behavioural change among citizens. By promoting mindful usage and resource efficiency, such as campaigns emphasize the critical role individuals play in preserving national water reserves. Thus, the practice of water conservation at individual level emerges as a responsibility, to save the country from escalating water crisis.

In addition, changing traditional agricultural habits is a crucial responsibility of Pakistani individuals. Agriculture consumes nearly 90% of the country's freshwater, making it a key sector where transformation can yield significant impact. Embracing

water efficient practices — such as drip irrigation, mulching, and crop rotation — can dramatically reduce water usage.

A notable shift has been the introduction of **drought-tolerant crops**, which require less water and more resilient ~~and are more~~ in arid conditions. These innovative alternatives not only conserve precious water but also enhance food security in a climate-challenged landscape. Hence, it is proven that adopting sustainable agricultural methods becomes an essential civic responsibility.

Moreover, adopting modern irrigation techniques is a pivotal responsibility of the agricultural community in addressing Pakistan's water crisis. Traditional flood irrigation methods which dominate the country's farming landscape, lead to excessive water wastage and reduce efficiency. In contrast, modern systems such as **drip and sprinkler irrigation** ensure precise water delivery directly to the plant roots, minimizing loss through evaporation and runoff. In Pakistan, drip irrigation has been successfully implemented in regions of Punjab and Sindh, particularly in fruit orchards and vegetable farming, enhancing water use efficiency.

Thus, transitioning to modern irrigation methods reflects a responsible thinking by citizens, to overcome the challenge of water crisis in Pakistan.

Equally important, spreading knowledge about water ethics as a crucial responsibility of every citizen in fostering

a culture of conservation. Water ethics emphasize the fair, responsible, and sustainable use of water, treating it not as an endless commodity, but as shared and limited resource. In this regard, public engagement and community-level education plays a transformative role. A notable example is **The National Water Conservation Campaign (NWCC)**, which has actively involved communities, schools, and the media platforms to instill ~~awareness~~ awareness about judicious water usage. Thus, cultivating awareness and encouraging water practices at the grass roots level becomes an indispensable civic responsibility.

Lastly, actively involving local communities in water management projects is a vital aspect of citizens' responsibility toward resolving Pakistan's water crisis. When people are directly engaged in the planning, implementation, and maintenance of water initiatives, they develop a sense of ownership, leading more sustainable outcomes. A remarkable example is **The Participatory Irrigation Management (PIM) Program** implemented in provinces like Sindh and Punjab, where water user associations are formed to manage irrigation systems at the grass roots level. These associations empower farmers to equitably distribute water, resolve conflicts, and maintain canals efficiently. Thus, community participation in water governance transforms passive beneficiaries into proactive custodians of nation's water resources, proving

them to be a responsible citizen.

To conclude, the water crisis in Pakistan is not merely an environmental concern, it is a profound national emergency with far-reaching consequences for health, industry and future sustainability. Yet, it is important to recognize that this crisis cannot be resolved by governmental action alone; it is a shared responsibility that calls for unified efforts from both the state and its citizens. The government must fulfill its mandate through robust policy formulation and effective implementation, constructing dams and water reservoirs, revamping outdated irrigation infrastructure, strengthening the performance of water management institutions like WAPDA, and managing cross-border water issues through strategic and peaceful diplomacy. On the other hand, the people of Pakistan must rise to the occasion by adopting water conservative practices, transforming traditional agricultural methods, utilizing modern irrigation technologies such as drip systems, spreading civic awareness regarding water ethics, and engaging directly in local water governance through community based projects like Participatory Irrigation Management programs. Together, these collective actions represent not only a solution to Pakistan's escalating water woes but also a model for cooperative nation-building. If both the government and the people accept their respective roles with a commitment

and urgency, a water-secure Pakistan is not just a dream - it is an achievable reality.

Thus, addressing Pakistan's water crisis is a shared responsibility of both the government and its people.