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Water Crisis in Pakistan:

"Anyone who can solve the problem of water will be worthy of two noble prizes; one for peace and one for science"

(John F. Kennedy)

For preservation and survival, every nation in the universe is highly reliant on the availability of its natural resources, while the water secures the uppermost position in all of these resources. However, the current situation of shortage of water resources in a country can abolish its political and socio-economic fabric and can become a threat to its geological existence. According to the World Bank, the countries that have an availability of water of less than a thousand cubic meters per capita are enlisted in water scarce countries. Similar is the case with Pakistan, which faced a drastic transition from water abundance at its inception to water scarcity nowadays.

Pakistan is facing a severe water crisis that threatens the country's food security, economy and human health. According to the World Bank, Pakistan is one of the most water stressed countries in the world, with per capita water availability of just 1000 cubic meters per person per year. (World Bank, 2020). This is well below the international threshold of 1700 cubic meters per person per year, which is considered as minimum quantity required for healthy and sustainable life. According to the another observation by the World Bank, Pakistan ranks 14 among 17 extremely high risk countries of the world that also contain hot and dry countries like Saudi Arabia. The water crisis of Pakistan can be a very grave and serious threat to Pakistan in future.

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The present water shortage is the greatest future threat to the State and Society of Pakistan."

(Anatol Lievan)

Availability of water at the right time, at the right volume and at a right price is an essential underpinning of economic growth and development. Unfortunately, Pakistan is suffering from miserable circumstances in availability of its significant water resources. Pakistan is an agrarian country that is highly dependent upon water reservoir, but it has highest water intensity rate in the world and 78% of its water resources are out of the country. According to the World Resources Institute, Pakistan will be ranked as 23rd number in top 33 water stressed countries in 2040. Internationally, Pakistan ranks 36th in total renewable water resources compared to India's rank at 8th and Bangladesh at 12th.

The water crisis in Pakistan is not just an environmental issue, but also has significant economic and social implications. The country's economy is heavily dependent upon agriculture, which is the largest user of water resources. The lack of water for

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irrigation is affecting crop yields, leading to food insecurity and economic losses. Furthermore, the water crisis is also having a devastating impact on human health, with many people lacking access to safe drinking water and sanitation.

Pakistan's water management has a long and complex history. The country's water resources are primarily dependent on Indus River, which is also shared with India and other neighbouring countries. The Indus Water Treaty signed in 1960, regulates the sharing of water resources b/w Pakistan and India. However, the treaty had been a subject of controversy and dispute over the years, with both countries accusing each other of violating the agreement.

According to a report by WAPDA in 2020, the water storage capacity is just 30 days, as compared to that of international standard of 120 days. which means that Pakistan is heavily

reliant on rainfall and snowmelt to meet its water needs, making it vulnerable to climate change and other external factors.

The water crisis in Pakistan is caused by multiple factors, including climatic change, population growth and inefficient water management. Climate change refers to the alteration in the patterns of rainfall and snowmelt, leading to severe floods and droughts. The population of Pakistan is growing rapidly, putting additional pressure on the country's limited water resources. Furthermore, the existing water infrastructure is inadequate and water management practices are inefficient, leading to significant water losses and waste. According to a report by Asian Development Bank, the water crisis in Pakistan is also caused by lack of investment in water infrastructure and inadequate management of water resources. The report states that the water sector in Pakistan is facing significant challenges, including limited water availability,

increasing demand of water, and inefficient use of water.

Dams are essential for water storage and management in Pakistan. They help to regulate the flow of water, prevent floods and provide a steady supply of water for irrigation, drinking and other purposes. According to the report by the World Bank, the construction of Dams can help to reduce Pakistan's water storage, reduce the risk of floods and improve the overall efficiency of water management. (World Bank 2020).

The construction of Dams is also crucial for the development of Economy. According to the report by Pakistan Bureau of Statistics, the construction of Dams can help to increase the country's GDP by up to 2%. (PBS, 2020). The report states that the construction of Dams is essential for the development of economy of Pakistan as it will help to increase the water storage capacity of Pakistan, reduce the risk of floods and improve the overall efficiency of water management.

The water crisis in Pakistan has significant effects on agriculture, human health, and the economy. The lack of water for irrigation is affecting crop yields, leading to food security and economic losses. According to a report by Food and Agriculture Organization in 2020, the water crisis in Pakistan is leading to decline in agricultural production, which is affecting the food security of country. Moreover, it also has a devastating impact on human health, with many people lacking access to safe drinking water and sanitation. According to a report by World Health Organization the water crisis in Pakistan has resulted in wide spread of waterborne diseases in Pakistan such as cholera and typhoid (WHO, 2020). The report states that, "lack of access to safe drinking water and sanitation is a major public health concern in Pakistan, and it requires immediate attention and action."

The National Water Policy of Pakistan is a

comprehensive framework that aims to manage the country's water resources in a sustainable and equitable way. The policy was approved in 2018 and it outlines the country's strategy for the management of its water resources. They key objectives of the water policy of Pakistan are water security, Sustainable Development, equitable distribution, water conservation, disaster management. To achieve the objectives of the National Water Policy, some of the strategies identified are water infrastructure development, water conservation and efficiency, water pricing and tariff, institutional strengthening, research and development.

The water Policy of Pakistan includes an Action Plan with specific targets and timelines for achieving the objectives which includes the short term i.e 2018 to 2025, and the medium term i.e 2025 to 2035 and the long term i.e 2035-2050. The short term aims to develop a national water

management system including the development of National and Provincial Water Authorities.

The medium term aims to develop and implement a water conservation and efficiency program, including the promotion of water saving technologies and practices.

The long term plan aims to achieve water security and sustainable development including the development of new water infrastructure and promotion of water efficient practices.

The implementation of the Water Policy of Pakistan faces several challenges such as limited financial resources, the institutional weaknesses and all of the above, the climate change. Despite of these challenges, there are opportunities for improvement in water management including international cooperation. Pakistan can benefit from international cooperation and assistance in water management, including the expertise, sharing and technology. The private sector can play a crucial role in water management in Pakistan.

In conclusion the water crisis is a complex and pressing issue that requires immediate attention and action. The water sector of the country is facing several challenges. The National Water Policy of Pakistan provides a comprehensive framework for addressing the water crisis but its implementation requires a collective effort from all the stakeholders including the government, private sector and the civil society. By investing in water infrastructure, promoting water conservation and improving the water governance, Pakistan can address its water crisis, and achieve a water secure future which will require a long term commitment to water management.

Ultimately, the water crisis is a challenge that can be overcome by the right policies, technologies and investment. By working together, we can ensure a water secure future for Pakistan and its people.