

Topic: Water Crisis in Pakistan:
Causes and way forward

Outline

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INTRODUCTION

Pakistan faces acute level of water shortages because of mismanagement of water resources, climate change, water pollution, and among others. However, certain level of strategies must be adopted to overcome water scarcity in the country.

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MANIFESTATION OF WATER SCARCITY IN PAKISTAN

III

ROOT CAUSES OF PAKISTAN'S WATER SCARCITY

- A. Climate change poses serious threat to water reserves
- B. Poor water management
- C. Water pollution
- D. Water distribution issue with province
- E. Leakage of water supply lines.

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SOLUTION AND WAY FORWARD

- A. Robust water management mechanism
- B. political consensus
- C. Recycling of waste water
- D. Increase agriculture efficiency
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"Anyone who can solve the problems of water will be worthy of two noble prizes - one for peace and one for science."

(John F Kennedy) Water is an essential life ingredient without clean water, human survival is impossible in this planet.

However, Earth is the only planet which is suitable for humans and other creatures of this universe. There are several more planets which are considered dead planets or barren piece of land because there is no water. In addition, this precious element of life is in jeopardy because of human activities. Human-beings use this source carelessly and do not have any consideration how to conserve it for coming generation. Furthermore, water is considered a lifeline for agriculture sector. It increases in the volume of crop production and remains soil fertile. However, Pakistan faces quite a level of water shortages because of water mismanagement.

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To begin with water overview in Pakistan. Pakistan is an agrarian country, agriculture sector contributes 23% of its Gross domestic product (GDP) and engaged more than 37% of workforce. However, water scarcity poses a serious threat to this sector. According to Indus Regulatory Water Authority (IRSA) Sindh and Punjab have been faced 50% of water shortages.

This shows a grim future reality of Pakistan. Being the 5th largest population of the world, now Pakistan has faced acute water shortage. Furthermore, according to United Nations, Pakistan has ranked among 23 most water insecure countries of the world. These estimations jeopardizes the survival of the country in this century and coming one's. However, being an agrarian and fifth largest

populace country of the world, Pakistan needs robust policy mechanism and political consensus to alleviate themselves from this trajectory.

There are several root cause which completely dismentle the precious source of life in this country, now discuss one by one.

First, climate change. It poses a serious threats to human beings and other creatures of this universe. According to National Oceanic Atmospheric Administration (NOAA), the global surface temperature has risen 1.5°C celsius. Additionally, morindine melting of glaciers across the region further plunged the country into unending economic turmoil's. Himalian ice mass are considered the fresh source of water to hum-being and agriculture production, however, just in three decades these ice reserov melting is a high pace, Resultantly, it increases the flows of river and urban areas are come

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into flood hazards. Additionally, climate change altered the pattern of atmosphere. Hence, climate change is one of the existing threat to water availability in the country.

Furthermore, poor water management. Water management is one of the important strategy to overcome the threat of water scarcity. However, Pakistan faces poor water management, despite role and regulation the country unable to overcome the menace of water scarcity in the country. For example, 1951 Pakistan per capita water availability stood 5000 cubic meter today it has dwindled to 720 cubic meter, just in two decades water availability declined 40%. Therefore poor water management further deteriorate the existing potential of water in the country.

Additionally, water pollution, is the greatest threats to human-beings and the marine eco-system. Pakistan is a country which, unable to address the Inordinate pollution of water.

According to United Nations Environment Programme (UNEP), Pakistan has ranked among the top twenty most water polluted country of the world. Water pollution, not only disturb the lives of human-being, but it broadly affect agriculture sector, forest and ecological balance. However, water pollution is the third important cause of water scarcity in the country. Additionally, water distribution issue with provinces, is also an important cause of water scarcity in the country. For example, Sindh and Punjab unable to address this issue from two decades. This issue hampers the consensus of many provinces regarding water management and conservation. Recently, the public of Sindh have completely banned the movement of people in the metropolitan city of Pakistan, Karachi, due to water protest across the province. This issue, further aggravate the fragile economic activities of the country. However, water distribution issue further aggravate the situation.

In addition to, leakage of water supply lines. Pakistan unable to address the monitoring supply mechanism of the country. The water supply lines across the country are too weak and less qualitative, resultantly, they unable to retain the flows of water. For example, ~~Karachi~~ each year, millions of gallon water have been wasted in the province of Sindh due to leakage of water supply lines. This activity, further aggravate the availability of water across the country. Furthermore, 10% population of the country unable to acquire clean drinking water because of water mismanagement and low level of precipitation.

However, there are, several strategies they must be considered to overcome the acute shortage of water in ~~the~~ the country. Without adequate action, it is impossible to achieve the cherish goal of water conservation.

First, ~~the~~ robust water mechanism, it is one of the important strategy to overcome the future scarcity of water.

Pakistan's water policy 2018, is one of the robust initiative to overcome the misuse of water resources across the country.

Without strict rules and regulation, water conservation is impossible being largest populated country of the world it is mandatory to frame strong policy mechanism which eradicate all the irregularities of water management in the country. Additionally there

must be check and balance in the use of water. For example, according to World Bank, Pakistan receives 2200 (mm) rain, water July to September, but lack of proper infrastructure 1700 (mm) have been flowes to Indus

Basin. Additionally, most of developing and developed countries are successful to conserve rain water, for example, India have used 80% of rain water in agriculture production. This phenomenon has increased agriculture production, water conservation and increase the volume of water in the region.

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Second, ensure political consensus. political inclusivity and willingness is very important to resolve inter provincial water disputes and infrastructure development, unfortunately, Pakistani politicians unable to address this moribund issue. Each coming government blame one another rather than strong policy implementation and formulation. For example, Diamer Basha Dam is one of the important project, which has the capacity to store thousand megawatt of water, however, lack of political consensus and inter provincial disharmony waste this opportunity. Furthermore, political interest of politicians further spoiled the situation. For example, the ~~then~~ ruling government and military leadership brings the new initiative in the name of Special Investment Facilitation Council (SIFC). according to this project, most of the barren land must be transformed into fertile land using the existing source of water, however, the population of

Some and other rural areas condemn the initiative, because they said that the existing water source is very limited. It could not be diverted to other areas.

Third, Recycling of waste water. It provides an opportunity to replenish the existing water source. Recycling of water is one of the important strategies, most of water scarce countries of the world have used this strategy to overcome severe water shortages. According to Pakistan Council of Research ^{water} Resource (PCRWR) reported that Indus rivers and its tributaries bring about 31.5 million tonnes (MT) of silt annually to the Basin. This shows the inefficiency of existing water recycling projects of the country. Furthermore, the government, make to establish robust mechanism that alleviate the water harshness. Recycling of water avoid diseases, maintain ecological balance and suitable water for human consumption.

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Fourth. Increase agriculture efficiency. Agriculture is the backbone of both developed and underdeveloped world economies. However, it consumes more than 80% of water resources of the country. Pakistan being an agrarian country, it contributes 23% to the national GDP and provides raw material to the industries across the country. Furthermore, most of the farmers are unaware the latest technological tools, they are fruitful to in the production of yield. For example, Drip Irrigation System, is considered one of the important method of agricultural watering, however, the traditional mind set unable to implement these advance tools rather than they used traditional methods, they further aggravate the availability of water. In addition, precision farming system is also an important strategy that increase yield volume and conserve the existing sources.

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last but not the least, grass root level of education. Grass root level of education capable the incoming generation how to conserve water resources in the country. The government of Pakistan need increase the strength of agricultural universities and provide research centers relate to water conservation. Furthermore, there is no any famous university across Pakistan, It provide adequate level of information to students how to increase agriculture production through limited resources. So the government needs to provide grass root level of understanding how to conserve water bodies from pollution, climate change and other natural and man made hazards. Hence, it is urgent responsibility both the government and the public to proliferate countryside water campaign to resolve the acute shortage of water in the country.

In a nut shell, Pakistan has faced acute shortage of water because of mismanagement of water resources, climate change, water pollution and disharmony between federation and units.

Furthermore, According to International Monetary Fund (IMF), Pakistan has become the 4th most water depleted country in the world.

These estimations of International Institutions show a grim future of water resources of the country.

Furthermore, inter provincial disputes further aggravate the situation. For example, the government unable to establish robust infrastructures that hold rain water and melting of ice caps in the country.

These resources flows into Indus Basin due to weak infrastructure mechanism. However, the government and the public need to implement robust policy measures to save future generation. Hence, Pakistan faces acute shortage of water, it must be controlled through political will and robust implementation of policies and regulations.