

Enlist and explain the Water Issues of Pakistan in Domestic and Regional Context.

1. Introduction:

Pakistan, nestled in the heart of South Asia, grapples with a myriad of complex water issues that significantly impact its domestic stability and regional relations. In the domestic context, Pakistan faces an acute water scarcity crisis, exacerbated by rapid population growth, inefficient water management practices, and the looming specter of climate change. The unequal distribution of water resources among its provinces, further compounds the challenge, fueling inter-provincial tensions and socio-economic disparities. Moreover, in the regional context, Pakistan grapples with transboundary water issues, particularly concerning the implementation of the Indus Water Treaty with India and shared rivers with Afghanistan. In navigating these multifaceted water challenges, Pakistan faces the imperative of adopting sustainable

water management practices and engaging in constructive dialogue with its neighbors to ensure the equitable and efficient utilization of water resources for present and future generations.

2. Water Issues Of Pakistan in Domestic Context:-

- i) Water Scarcity
- ii) Population Pressure and Unplanned Urbanisation
- iii) Agricultural Dependency
- iv) Climate Change
- v) Poor Water Management
- vi) Water Distribution Issue within Provinces
- vii) Water Pollution
- viii) Dependence on Single River System

i) Water Scarcity:

Pakistan ranks among the most water-stressed countries globally, with 1090 m^3 per capita water availability declining rapidly, according to the UNDP. Pakistan ranks **14** among the **17** extremely high water risk countries of the world. Of the

situation remains unchanged, the whole country may face 'water scarcity' by 2025.

ii) Population Pressure and Unplanned Urbanisation:-

With a population exceeding 220 million and a growth rate of around 2.1%, Pakistan's water resources are under immense strain.

The increasing demand for water for domestic, agricultural, and industrial purposes exacerbates scarcity issues. According to UN: World Urbanisation

Prospects, Pakistan's population is projected to increase by over one-half (53%), reaching **338 million by 2050**. The share of the population living in cities is also projected to increase from **31.2% in 2020 to 52.2% in 2050**.

iii) Agricultural Dependency:-

Agriculture accounts for over 90% of Pakistan's water usage, yet outdated irrigation systems and wasteful practices contribute to inefficiency.

The reliance on water-intensive crops further compounds the crisis. A total of 54

million acres is under cultivation and 82% of the cultivated land is irrigated either from surface or groundwater sources. To conclude, agriculture sector takes the lions share of fresh water and there is massive mismanagement prevalent at national level in this sector which leads to water shortage.

iv) **Climate Change:-**

Pakistan is among the list of 10 most vulnerable countries of the world to climate change. The country is already facing climate-related threats to water resources as is evident from the change in monsoon patterns, receding glaciers, rising temperature and recurrence of floods and droughts. Climate change, along with inefficient water use for irrigation and excessive groundwater extraction, threatens water security in Pakistan.

v) **Poor Water Management:-**

Over 80% of the country's water resources are used by four major crops (rice, wheat, sugarcane, cotton) which contribute only 5% to GDP.

The productivity of these crops is low in Pakistan compared to other major agricultural economies of the world. The crumbling of water infrastructure contributes to extensive water wastage. According to UNDP, Pakistan can save only 9% of the available water in the Indus River System throughout the year, compared to the global average of 40%.

vi) Water Distribution Issue within Provinces :-

A growing scarcity of water resources in the country is increasingly becoming a source of conflict among provinces over the distribution of available water. On March 16, 1991, a document called the "Apportionment of the Waters of Indus River System between the provinces of Pakistan" was signed. According to this document, water is divided among the provinces, with about 48% going to Punjab, 42% to Sindh, 7% to KPK and 3% to Balochistan. Lesser quantities of various months have caused water conflicts between upstream province of Punjab and the downstream province of Sindh and between Sindh and Balochistan over the

years. 1991 Water Accord does not introduce any apportionment for shortages. These shortcomings in the accord have sown the seeds of disagreement instead of resolving the issues.

vii) **Water Pollution:-**

Every year about half of the two million produced wet tons of human excreta go on to pollute water in Pakistan. According to a study, in Pakistan 60 million people are at risk of exposure to high concentrations of arsenic in ground water on the Indus Plain.

viii) **Dependence on Single River System:-**

The country's dependence on a single river system is extremely risky: the Indus river system accounts for **95.81%** of the total renewable water resources of Pakistan. According to FAO of the UN, the water originating from outside of Pakistan accounts for over three-fourths (78.1%) of total water resources of the country, making it vulnerable.

3. Water Issues Of Pakistan in Regional Context:

- i) Water Issues between Pakistan and India
- ii) Water Issues between Afghanistan and Pakistan
- iii) Water Issues between Pakistan and China

i) Water Issues between Pakistan and India.

The water issues between Pakistan and India are complex and longstanding, primarily revolving around the sharing of water resources from the Indus River system.

1. Importance of Indus Basin:-

Due to the significance of the Indus Basin, the division of its waters has become a major source of controversy. The hasty and divisive partition of British India, which drew a political boundary right through the Indus Basin. This left Pakistan as the lower riparian state, while India became the upper riparian state. To make matters worse, most of the headwaters ended up on the Indian side, leaving Pakistan more

vulnerable. India had the ability to control and potentially cut off vital irrigation water from significant agricultural areas in Pakistan, causing further challenges for the country.

2. Indus Water Treaty:-

Indus Water Treaty signed in 1960, this treaty governs the sharing of six major rivers originating from the Himalayas. The three western rivers (Chenab, Jhelum and Indus) were allocated to Pakistan and the three eastern rivers (Beas, Sutlej and Ravi) were allocated to India. According to this treaty, India was not allowed to build storages on the western rivers except to a very limited extent and restrictions were also imposed on the extension of irrigation development in India.

3. Indian Violations of the Treaty:-

India started almost every project without informing Pakistan which is in violation of IWT. There is a restriction of aggregate storage allowed to India over western rivers via Annexure E of the treaty. India, however, is manipulating this provision by building a

series of storages on western rivers, increasing storage and water regulation capabilities manifold. India has plans to construct 62 dams and hydro-electric units on Rivers Chenab and Jhelum thus enabling it to render these rivers.

ii) Water Issues between Pakistan and Afghanistan:-

Water issues between Afghanistan and Pakistan primarily revolve around the shared rivers originating in Afghanistan and flowing into Pakistan.

1. Kabul River:-

The Kabul River is one of the major rivers shared between Afghanistan and Pakistan.

It originates in Afghanistan and flows into Pakistan, eventually joining the Indus River. The utilization of water from the Kabul River is a source of contention between the two countries.

2. Water Sharing Agreements:-

Unlike the comprehensive Indus Water Treaty between Pakistan and India, there is no formal treaty governing water sharing between Afghanistan and Pakistan. This lack of a formal agreement

often leads to disputes over water usage and management.

iii) Water Issues between Pakistan and China

Water Issues between China and Pakistan primarily revolve around the development and management of transboundary rivers, particularly the Indus River and its tributaries.

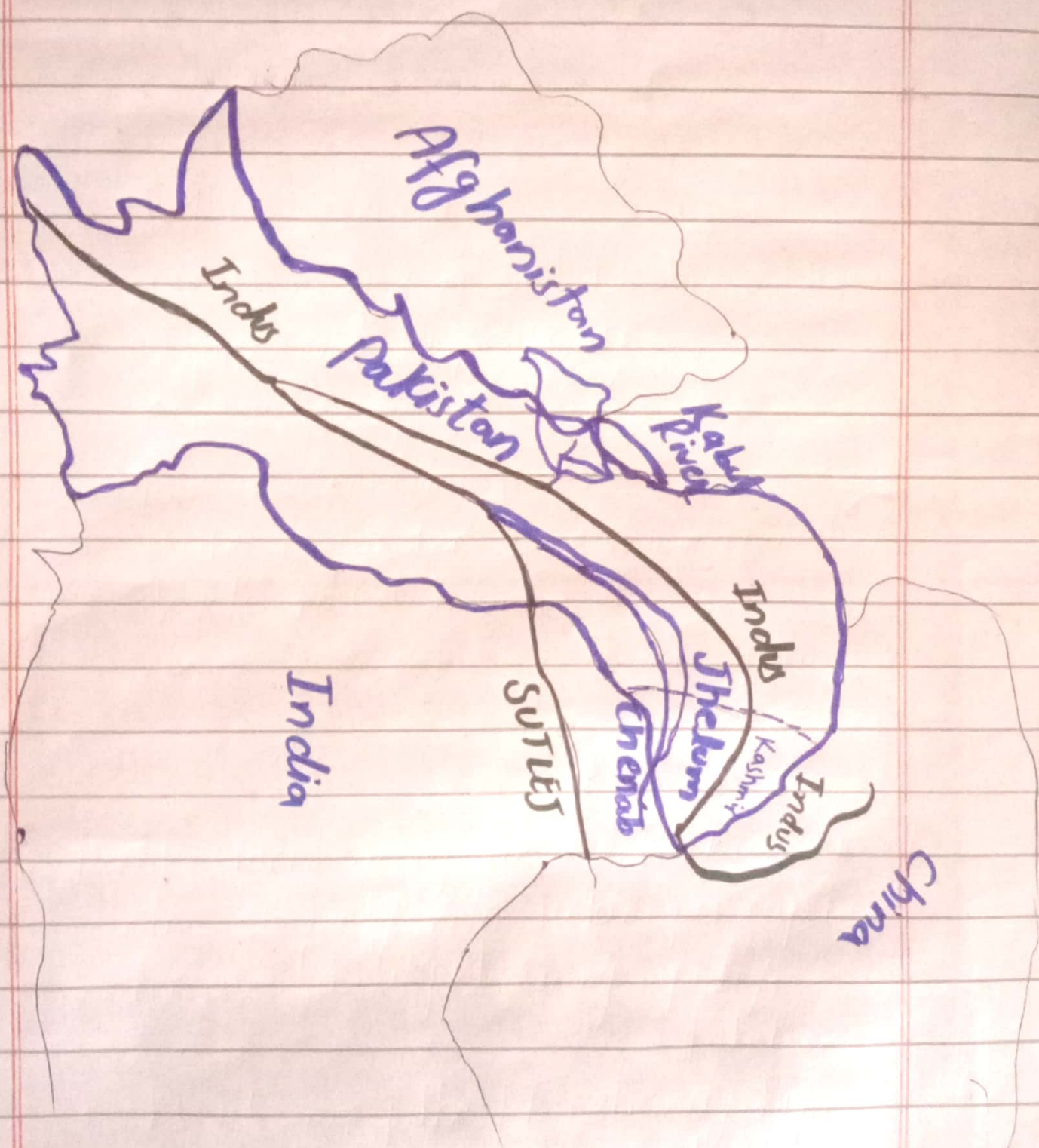
1. China-Pakistan Economic Corridor (CPEC):-

The CPEC includes several infrastructure projects, including dams and hydropower projects in Pakistan, funded and constructed by China. These projects can affect the flow of rivers shared between the two countries.

2. Indus Water System:-

The Indus River, along with its tributaries like the Jhelum and Chenab, originates in China's Tibetan Plateau and flows into Pakistan. China's construction of dams and water diversion projects in the upper reaches of these rivers can impact downstream water flow and availability in Pakistan.

Map Between Pakistan, China, India and Afghanistan



4. Recommendations :-

- The water crisis in Pakistan demands urgent attention and concerted action from both domestic and regional stakeholders. Domestically, there is a need for comprehensive water management reforms, including investments in infrastructure, promotion of water-efficient technologies, and sustainable agricultural practices. Additionally, improved governance and conservation measures are essential to address the growing demand-supply gap.
- On the regional front, diplomatic engagement and dialogue are crucial for resolving trans-boundary water disputes and ensuring equitable water sharing. Enhancing cooperation through platforms like the Indus Water Commission and SAARC can foster mutual understanding and collaboration in water management.

5. Conclusion:

In conclusion, the water crisis in Pakistan is a complex and multifaceted challenge that requires a holistic approach for resolution. By addressing both domestic inefficiencies and regional tensions, Pakistan can mitigate the impact of water scarcity and ensure sustainable water management for its people. Concerted efforts, backed by political will and international cooperation, are essential to overcome this crisis and secure the future of Pakistan's water resources.
