

Question#1:

Given the political complexities surrounding energy privatization & public-sector inefficiencies, what role should the public-private partnerships (PPP) play in reforming Pak's energy sector to ensure affordability, accessibility and sustainability?

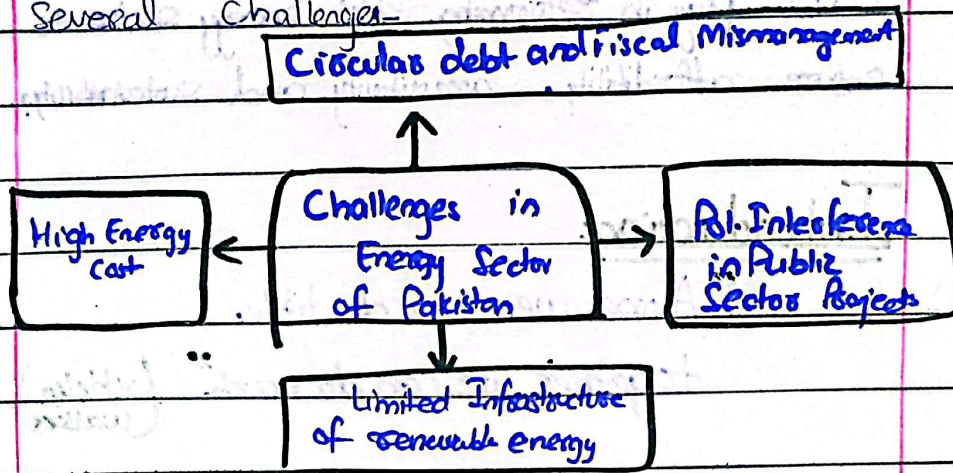
Introduction:

"Alone we can do little,
together we can do much." (Helen
Walker)

The energy ~~sectors~~ sector in Pakistan faces serious challenges - The challenges mostly comprise of circular debt, mismanagement of financial resources, wage policies of government, political interference in public sector projects, high energy cost and limited infrastructure of renewable source. To address these challenges, Public Private Partnership (PPP) can play a vital role in ensuring the energy affordability, accessibility and the sustainability.

Challenges in the Energy Sector of Pakistan:

The energy sector of Pakistan faces several challenges-



I. Circular Debt and Fiscal Mismanagement:

Pakistan is facing a persistent issue of circular debt due to distribution companies (DISCOs) - when DISCOs fail to pay the power producers, who in turn cannot pay the fuel suppliers, a circular debt occurs. In the first seven months of January of current fiscal year, the circular debt increased:

January 2024: RS. 2.636 Trillion

Dec 2023: RS. 2.551 Trillion

As according to Ministry of Energy's Power Division-

Moreover, the mismanagement of fiscal resources also causes the energy to shortfall.

II. High Cost of Energy:

The energy in Pakistan is extremely high. The reason is that due to over-reliance on the expensive hydrocarbons the cost of energy increases. This cost of energy hinders the progress and affects the consumers.

As according to National Electric Power Regulatory Authority (NEPRA); the price of average power is **RS 35.70** after distribution. So, the cost of energy is also a talking challenge.

III. Limited Infrastructure of Renewable Sources:

Pakistan heavily relies upon the expensive hydrocarbons including Coal, diesel and Liquefied Natural Gas (LNG) which are used for its transportation and infrastructure sector. The renewable energy used for production is only 10% while the thermal energy accounts for 57%.

in energy production according to NEPRA.

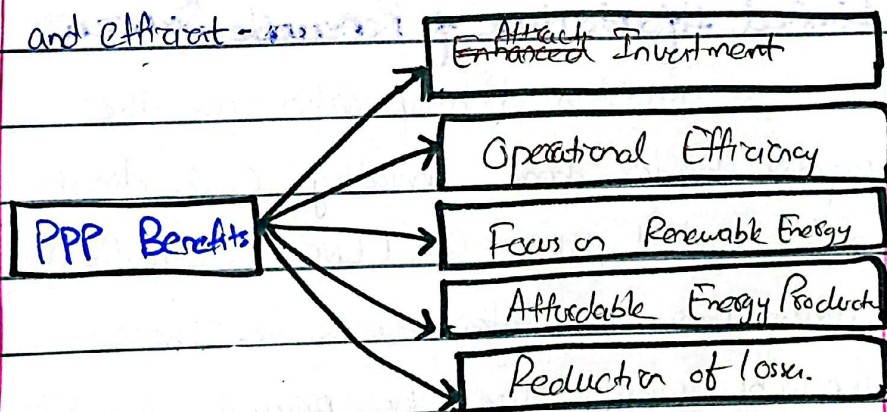
Therefore, the over-reliance on non-renewable sources also hinders the progress of energy sector.

IV. Political Interference in Public Sector Projects:

The public sector projects are highly hindered by political interference. The political involvement causes conflicts among the members of government which hinder the efficiency and effectiveness of projects.

Role of Public-Private Partnership (PPP) in Reforming Pakistan's Energy Sector:

The public private partnership is a way of reforming the energy sector of Pakistan to make it more sustainable, accessible and efficient.



I. Attraction of Investment in Energy Projects:

The continuing role of government to borrow from other country would possibly end because of investment from

Foreign sector- PPPs can attract the private capital to fund the infrastructure projects as liked the **China Pakistan Economic Corridor (CPEC)** which involves Public private partnership for enhancing the infrastructure and energy structure including power plants and transmission lines-

II- **Operational Efficiency and Innovation:**

PPPs enhance the operational efficiency and bring innovations through the use of technology in Pakistan. The successful **Lahore waste management Project in 2019** with the private partnership with a Turkish firm Ozpak, improved waste management in Lahore. By leveraging public private partnership in energy sector, better outcomes are possible.

III- **Focus on Renewable Energy:**

Pakistan is a country having wide range of renewable energy sources available. Since it has 8 to 9 hours of sunshine, water reservoirs like Indus water reservoirs, significant wind energy potential and tidal

line along Arabian sea - PPPs can focus on renewable energy utilization to not only reduce the cost of energy but also to protect the environment. The government of Pakistan aims to achieve **20% of total power generation from renewable sources by 2025**, which is possible by PPPs -

IV. Affordable Energy Production:

PPPs will enhance the energy production. Since the government would not have to pay any capital payment as the public will pay only for the energy they have utilized. It will be more affordable for the public which will contribute to the better economic condition of country.

V. Reduction of losses:

Pakistan's energy from transmission to distribution highly get loss due to old technology - According to **NEPRA**, transmission losses range between 18% and 20%. PPPs will enhance the infrastructure which will

reduce the cost of energy losses.

Challenges to be Faced By PPPs in Pakistan:

The challenges for Public Private partnership (PPP) in Pakistan are:-

I. Regulatory and Bureaucratic Hurdles:

Multiple regulatory agencies can create uncertainty and deter private partnership. Moreover, the slow decision making processes and excessive paper work can delay the practical implementation of projects.

II. Political Instability and lack of Consistent Policies:

Frequent changes in the government ^{and their policies} can discourage the partnerships. It can deter the investment of private sector.

III. Corruption and Transparency:

Corruption can hinder the progress of private investment in Pakistan. As,

according to Corruption Perception Index, Pakistan ranks 133 out of 180+ countries. Moreover, the lack of transparency can lead to mistrust among the investors.

Conclusion:

Pakistan's energy sector severely suffers from crisis. However, to ensure affordability, accessibility and sustainability of the energy, ^{Public-private Partnership (PPP)} ~~partnership~~ is the best option. As it will bring foreign investment, efficiency, use of renewable energy, affordable energy and reduction in the loss of energy. The Public-Private Partnership will not only enhance the energy sector but it will also make the strong economy of country.

Question #2:-

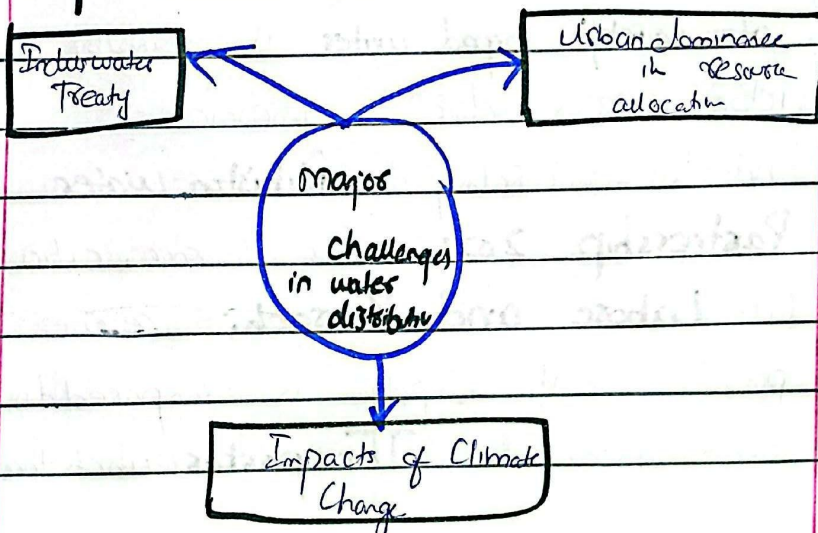
How can Pakistan address the growing disparity between distribution of water resources and mitigation

Social and economic inequalities caused by water shortages;

Introduction:

Pakistan is on the edge of water crisis with per capita annual water availability falling below 1000 cubic meters. The factors responsible for these water crisis include Indus Water Treaty Challenges, urban dominance in resource allocation and others. These factors lead to great disparity among between the distribution of water resources. Addressing these issues requires inclusive and practical reforms.

Major Challenges in Water Distribution System of Pakistan:



I. Water Management Challenges in Indus Water Treaty (IWT):

The Indus Water Treaty was ^{a successful} an agreement between Pakistan and India in 1960 on the distribution of water resources. However, the treaty has been a contentious issue with concerns mainly regarding India's hydropower projects and its claim to revise the treaty. The Kishanganga dam and Rattle Dam raised concerns regarding the water flows in Pakistan.

II. Urban Dominance in Resource Allocation:

The urban areas of Pakistan mostly consume more resources - over 60% of country's piped water is consumed by urban areas due to presence of industries, according to Pakistan Water Partnership 2021. For instance, cities like Lahore and Karachi receive prioritized water supply as compared to rural areas like Tharparkar which face

acute water shortage-

IV. Impacts of Climate Change on Water Reserves:

Due to climate change, and warming of earth's temperature there is a phenomena of glaciers melting and rainfalls which impact the rural community severely. As in Baluchistan, frequent droughts experienced which left the habitants to rely on tanker water at high cost-

Possible Solutions to Reduce disparity Water Distribution and Inequality Caused by Water Shortage.

Measurable Solutions

Strengthen Transboundary water crisis

Modern Irrigation Technology

Rural Infrastructure Development

Decentralize water reserves

Integrate technology for water resources-

I. Strengthen Transboundary Water

Conflicts:

The diplomatic efforts to ~~revitalize~~ ^{resolve} the Indus Water Treaty dispute should be initiated. The permanent commission can be strengthened to facilitate regular dialogue and solve the dispute on water sharing between Pakistan and India.

II. Usage of Modern Irrigation

Techniques:

The modern irrigation techniques such as Drip and sprinkler should be enhanced to optimize the water for agricultural use. It can save upto 40% of water for crop yield. The Pilot Project in Okara district in Punjab saved almost 30% of water wastage through drip irrigation method.