

Q: Discuss in detail the climate mitigation and adaptation strategies keeping in view the climate change risk index of Pakistan.

### Introduction:

Pakistan is one of the countries that are most vulnerable to the impacts of climate change. According to the global climate risk index 2021, Pakistan is ranked 8th in terms of climate change risks, indicating the country is facing severe climate-related hazards such as floods, droughts, heatwaves and storms. Therefore, Pakistan must implement effective climate mitigation and adaptation strategies to reduce its vulnerability and increase its resilience to the adverse impacts of climate change. These strategies include promoting renewable energy, improving energy efficiency and reforestation. On the other hand, adaptation strategies include disaster risk reduction, water management and agricultural adaptation. Moreover, enhanced and sustained international engagement is crucial for addressing climate change. Pakistan has to consider low emissions development strategy on priority basis. The projects pipeline must be strengthened through capacity building.

2) Climate Change Risk index of Pakistan:

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According to the Global Climate Risk Index 2021, which was released by the "German environment think tanks German Watch". Pakistan ranks as the 8<sup>th</sup> most affected country in the world by climate change. The report analyzed data from 2009 to 2019, evaluating the degree to which countries have been affected by extreme weather events, particularly flooding and droughts, which have caused harm to infrastructure, agriculture and human settlements. The report urged the developed nations to take responsibility for their past emissions and provide assistance to vulnerable countries such as Pakistan in coping with the impacts of climate change.

### 5) Ministry of Climate Change: Initiatives on Environment climate change and Sustainability

Pakistan's Greenhouse emissions are account for less than one percent. However, the country is considered vulnerable to the impacts of climate change. Being a responsible member of global community, Pakistan has responded a well-articulate climate change agenda consist of following flagship initiatives:

#### 10 billion Tree Tsunami Project:

Government of Pakistan decided to set a goal of 10 Billion Tree



Plantation across the country. The outcome of BTAP have been duly acknowledged by World Economic Forum, UNEP, and other international bodies. Government of Pakistan will spend approx. USD 1 billion on 10BTP Project.

## 2. Green Economic Stimulus (Green Jobs):

For 2019-20; the 10BTP has generated a minimum of 65,000 jobs which are planned to be scaled up to 200,000 by December 2020. Green Stimulus is helping Pakistan to build back greener while creating value chains and providing many jobs for springing economy in post pandemic downturn.

## 3. National Electric Vehicle Policy:

In order to mitigate the negative impacts of automobile sector on environment and giving a boost to the economy, Government of Pakistan has approved the National Electrical Vehicle Policy targeting a 30% shift to electric by 2030.

## 4. Protective Area Initiative:

Prime Minister of Pakistan launched "Protected Area Initiative" to develop 15 model protected areas across country to conserve over 7295.549 sq/km of land area as well as Green Stimulus creation of over 5,500 jobs.

## 5. Ecosystems Restoration initiative:

Government of Pakistan has launched the Eco-system restoration initiative (ESRI) for attaining Land Degradation Neutrality (LDN)



by restoring at least 30% of degraded forests, 5% of degraded cropland, 6% of degraded grassland and 10% of degraded wetlands in Pakistan by 2030 to generate ecosystem services and provide additional support to mitigation of GHG in Pakistan.

#### 4. Climate Mitigation strategies for Pakistan.

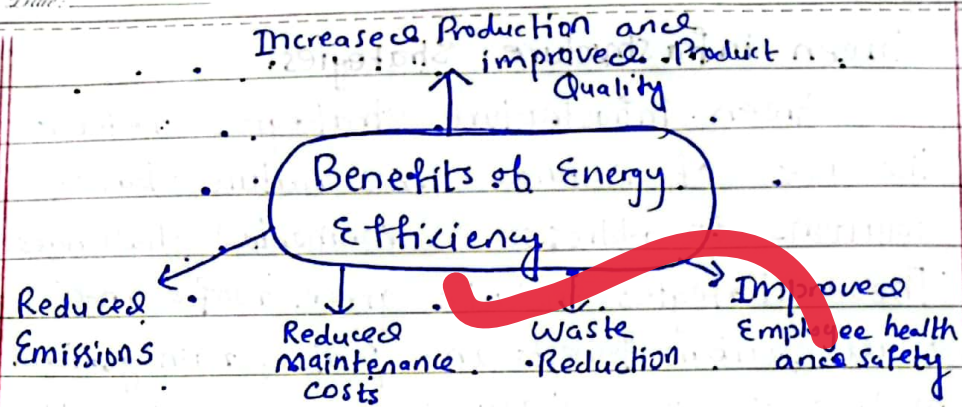
"Mitigation - reducing climate change - involves reducing the flow of heat-trapping greenhouse gases into the atmosphere, either by reducing sources of these gases or enhancing the sinks that accumulate and store these gases." (United Nations Intergovernmental Panel on Climate Change)

Mitigation measures can encompass a variety of strategies:

##### 1) Energy efficiency measures:

Implementing energy efficiency measures is a simple and cost-effective approach to addressing climate change, lowering energy expenses for consumers, and boosting the competitiveness of US enterprises. Furthermore, energy efficiency plays a crucial role in the decarbonization process, which is necessary to achieve net-zero carbon dioxide emissions.

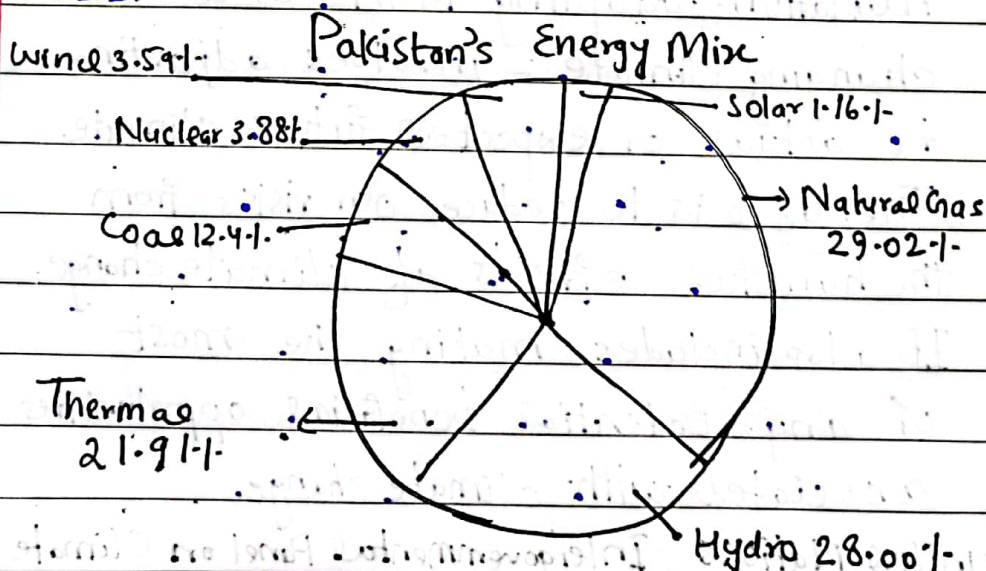




## 2) Renewable Energy Expansion

Renewable energy Expansion refers to the development and growth of renewable energy sources like solar, wind, hydro, geothermal and bioenergy, to meet the world's energy demands. This can be achieved through the development of new technologies, government policies and incentives and consumer demand for clean energy.

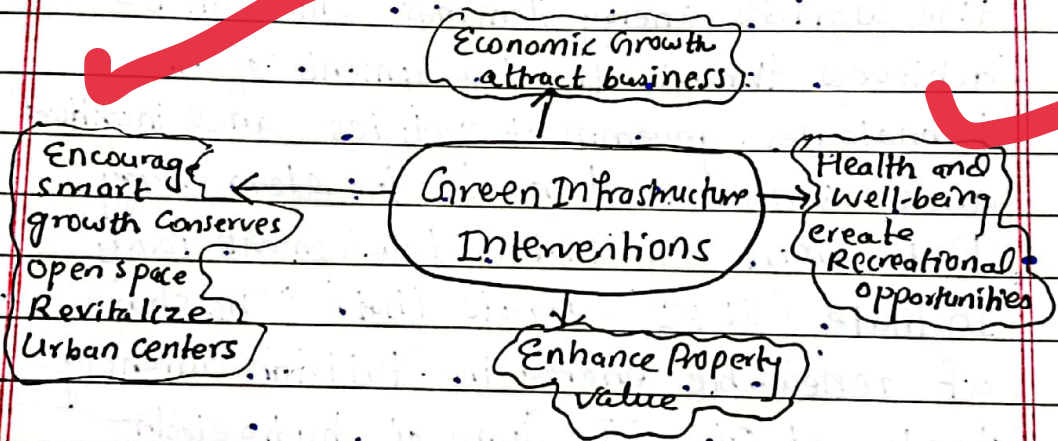
- Data from Sustainable Development Policy Institute (SDPI) suggests that, "The share of renewable energy in Pakistan currently stands at 5%. The share of hydroelectric power generation in the energy mix stands at almost 25% (10,251 MW) in April 2022.





### 3) Green infrastructure strategies.

Green infrastructure strategies refer to the use of natural and nature-based solutions to address environmental challenges. These strategies include green roofs and walls, urban forests and parks, rain gardens, natural shoreline stabilization and sustainable drainage systems. The World Health Organization (WHO) published a report titled "Urban Green Spaces and Health - A review of evidence" that provides evidence on the health benefits of green infrastructure.



### 4. Climate adaptation strategies for Pakistan

Adaptation - adapting to life in a changing climate - involves adjusting to actual or expected future climate.

The goal is to reduce our risks from the harmful effects of climate change.

It also includes making the most of any potential beneficial opportunities associated with climate change.

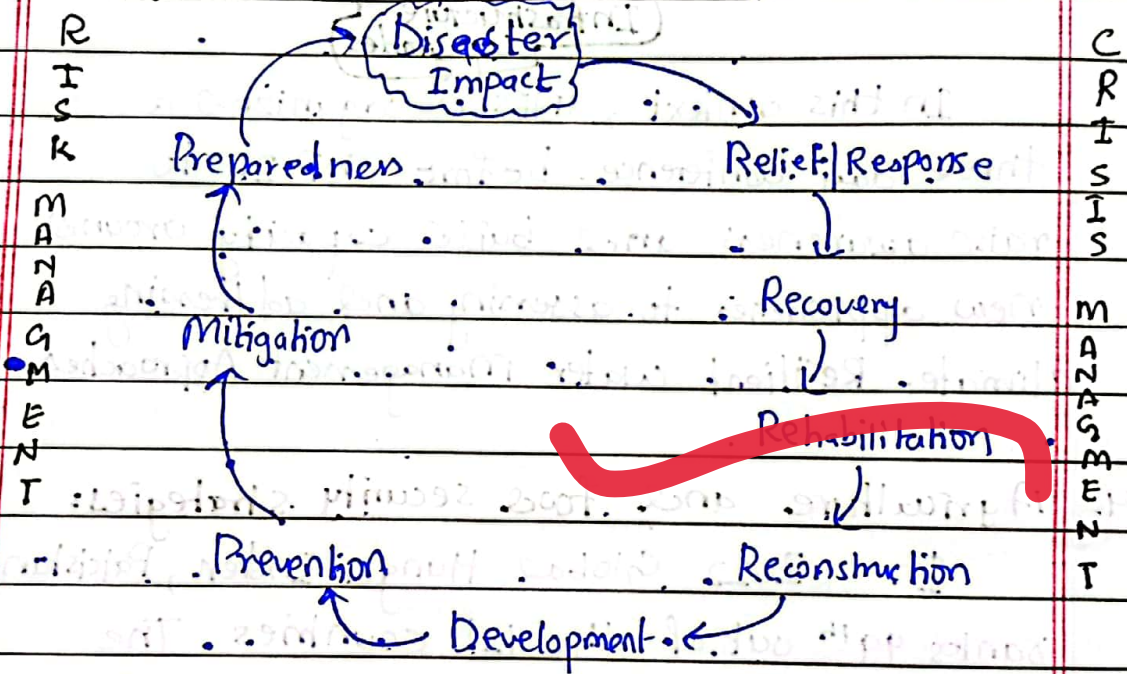
(United Nations Intergovernmental Panel on Climate Change).



1) Disaster risk reduction and management.  
 "Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk reduce existing disaster risk and manage residual risk contributing to strengthening of resilience and reduction of disaster losses."

(United Nations office for Disaster Risk Reduction)

**Disaster Management Cycle**

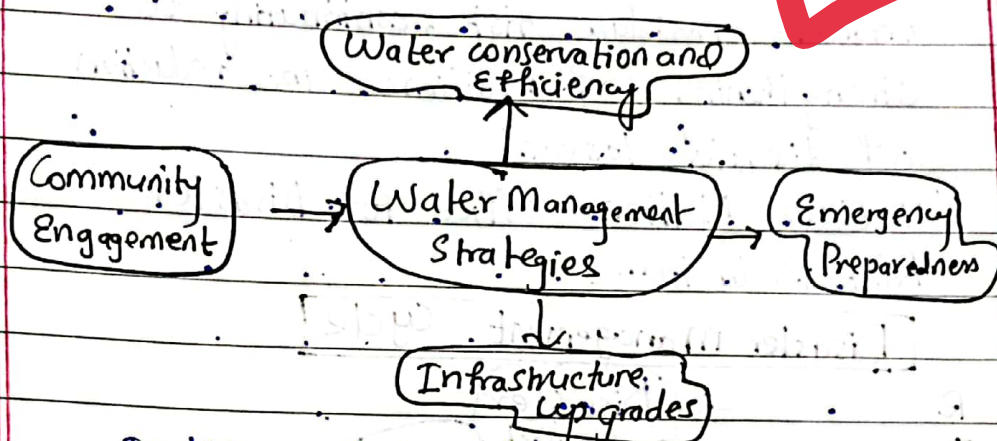


Above picture shows; by taking comprehensive and coordinated approach to disaster risk management, Pakistan can reduce the impact of natural disasters and increase the resilience of its communities.

2) Climate-Resilient water management Strategies:



Pakistan is facing challenges related to water resources due to climate change, and to address this, it can implement climate-resilient water management strategies.



In this context, UNESCO organized a three day conference before COP-26 to raise awareness and build capacity around new approaches to assessing and addressing climate-resilient water management approaches.

#### 4. Agriculture and food security strategies:

In 2022 Global Hunger Index, Pakistan ranks 99<sup>th</sup> out of the 121 countries. The report states that more than 25% of the population in Pakistan is undernourished, and around 40% of children under age of 5 are stunted, indicating chronic malnutrition. By implementing these strategies, Pakistan aims to improve agricultural productivity, reduce poverty and malnutrition, and achieve sustainable agricultural development.



## 5 Social Safety nets:

According to the World Bank, Pakistan is among the top 10 countries most affected by climate change, with recurrent floods, droughts and extreme heat events. To address these challenges, social safety nets can provide financial support to vulnerable populations. One example is the Ehsaas Emergency Cash Program, launched in response to COVID-19 pandemic, which provides financial assistance to low-income families, including those affected by climate related disasters.

## Conclusion:

In conclusion, Pakistan is facing severe climate change risks and needs to implement both mitigation and adaptation strategies to address them. Pakistan needs to prioritize and implement range of strategies that are cost-effective and sustainable to effectively manage the risk posed by climate change.

Good!

You are doing really good

All the best!

Examples from other vulnerable countries could be added though

Good luck!