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Impacts of Climate Change and Required Adaptations for Pakistan



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The post-cold war security perspective shifted the focus from a traditional realistic state-centric to one where individual security is prioritized. In the last few decades, climate change is



manifested as a phenomenal threat to human security. The study discusses that despite contributing least to the global carbon emission, Pakistan is among the countries most vulnerable to climate change. The menace of climate change triggers social, economic, and environmental issues, thus threatening the national security of Pakistan. Furthermore, the events in the recent past have shown the country's incapacity and less-resilient policies in dealing with climate induce crises. The paper discusses the emergence of climate change as a non-traditional security issue and social, political, and economic challenges faced by Pakistan. Moreover, the study highlights mitigating and adaptive mechanisms that Pakistan must adopt to deal with climatic transformations.

Introduction:

The security discourse in the post-cold war era greatly deviates from the traditional security approach of states-centrism. In response to emerging security threats, the new paradigm of security, i.e., Human Security is the junction of peace, security, and development. The Commission on Human Security defines it as 'the interdependence



of human insecurities and response to these insecurities’¹. In the last few decades, Climate Change has emerged as a significant threat to human security by causing social, economic, and political tensions and conflicts. Climate change may not directly induce a conflict but it makes the resolution difficult. In the light of recent events in Pakistan, climate change is recognized as a threat multiplier by impeding the efforts of the international community to eliminate resource scarcity. Climate change is a global phenomenon, influencing every developed or underdeveloped country regardless of their share in global warming. Every continent in the world still faces profound impacts of environmental changes, however, the growing population of South Asian countries puts them in an extremely vulnerable position. The changing weather patterns are mounting the frequency and intensity of climate-related events like floods, hurricanes, droughts, and famine in the region.

Like other South Asian countries, climate change puts the heaviest burden on Pakistan as its larger population depends on the agricultural economy. Furthermore, when these vulnerabilities are combined with poverty, resource scarcity, and political disability it raises tremendous economic, social and political concerns. Unfortunately, increase in floods, droughts, erratic weather conditions, and changes in agriculture patterns have been witnessed more often². The geographic location of Pakistan bounded by the Himalayas and Suleiman ranges to Indus River plains and coastal areas in the West

¹ “HUMAN SECURITY NOW” (New York, USA: CHS, 2003).

² Mustafa Zia, “CHANGING CLIMATIC PATTERNS AND THEIR IMPACTS WITH SPECIAL FOCUS ON PAKISTAN,” in Stan, accessed 2011, <https://www.pecongress.org.pk/images/upload/books/8-Climate%20Change%20and%20its%20Impact%20with%20Special%20Focus%20in%20Pakistan.pdf>.

makes it the victim of natural calamities. Statically the floods in 2010 and 2012 had a disastrous impact and it is expected that in the coming years due to the rise in global temperature the melting of glaciers in the Himalayas will increase thus increasing the rate of floods. Likewise, it will be a concern for people living along the coastal line who will be at immediate threat of backwater flooding. Pakistan will have to take serious measures to cope with emerging climatic changes otherwise the country will have to face drastic consequences.

Change in Climatic Patterns in Pakistan:

In Pakistan, climate change has emerged as an issue of national security impacting the socio-economic sectors. While analyzing the climatic transformations in Pakistan, temperature rise, severe heat



waves, climate-induced migration, and rise in seawater level are a few evident indicators. Pakistan is one of the countries that contribute the least amount of Greenhouse Gases (GHG) in the atmosphere. However, it is in the top 10 countries that are most vulnerable to climate change. The climatic patterns of Pakistan are greatly expected to change by the end of this century. There may be seen a rise of 4° C to 6° C in annual mean temperature thus changing the patterns of rainfall. Due to the rise in



annual temperature and increased variability of rainfall the sea level may rise to 60 centimeters³.

Like other countries, climate change is a potent non-traditional security challenge for Pakistan. In 2021, Pakistan's temperature raised to a level that was intolerable for human beings. Research indicated that if the weather continued to this level it may result in organ failure⁴. Turbat, Sibi, Jacobabad, Larkana, and Nawab Shah are some of the cities that are facing temperature extremes since 2017. The floods of 2010 and 2012 forced thousands of People in Pakistan to leave their houses and migrate to other areas. Similarly, the country faced flood situations in 2016, 2019, and 2021. The areas that are more vulnerable to climatic transformations are the coastal areas in Sindh, Balochistan, and the regions around the Indus River Basin. Extreme climatic events and cyclones in the coastal areas have become more frequent. Cyclone Jal (2010), Cyclone Tauktee (2021), and Cyclone Shaheen (2021) are a few of the deadliest cyclones that left thousands of people homeless. Moreover, the glacier burst in the northern areas of Pakistan in 2010 flooded several villages leaving some 2500 people displaced⁵.

³ Chaudhry, Qamar Uz Zaman. Climate change profile of Pakistan. Asian Development Bank, 2017.

⁴ Moriah Prescia, "The Immediate Threat of Climate Change in Pakistan," Climate Refugees (Climate Refugees, September 30, 2021), <https://www.climate-refugees.org/spotlight/2021/7/30/pakistan>.

⁵ Jawed Ali Khan, "CHANGING CLIMATIC PATTERNS AND THEIR IMPACTS WITH SPECIAL FOCUS ON PAKISTAN," accessed 2011, <https://pecongress.org.pk/images/upload/books/3-Changing%20Climate%20Patterns%20and%20their%20Impacts%20with%20Special%20Foc.pdf>.

Challenges faced by Pakistan: Discussion and Analysis

As mentioned earlier, climate change had profound effects on Pakistan's national security impacting different economic, social, and environmental sectors. In this regard, a few challenges are mentioned below:

a. Impacts on the Agriculture Sector:

Pakistan is an agrarian -economy, contributing 21% to state Gross Domestic Product (GDP). The agriculture sector not only ensures food security but provides jobs as almost 45% of the total workforce is employed in the agriculture sector. Agriculture productivity in Pakistan indicates a major decline due to climate-induced issues, i.e., waterlogging, salinity, and overflow of water in rivers and streams⁶. According to some reports, there is a substantial decline in the production of Wheat, Maize, and Basmati Rice. This has raised economic concerns for the country as this sector is highly vulnerable to temperature, sustainable supply of freshwater, availability of fertile land, and productive workforce. Pakistan is the world's 5th most populous country and alterations in agricultural patterns and means of production will have a disastrous impact on the economy of the state.

b. Impact on the Society:

Climate change will significantly affect the people already living a miserable life. The climate-induced resource scarcity will hit the country and it will raise societal insecurities. Powerlessness and poverty will raise multidimensional vulnerabilities,

⁶ Ibid.



including food scarcity, unemployment, health issues, etc. Migratory flows of population, due to natural disasters both within the country and outside raises concerns for religious and ethnic minorities. People belonging to these groups often face discrimination while accessing shelter and health care services.

Furthermore, Climate change has the most daunting effects on the health sector in Pakistan. The increased frequency and duration of heatwaves that are intolerable to human beings causes heart attack, organ failure, and heatstroke. Moreover, with the rise of water levels and floods water pollution has emerged as a major issue. Water-borne diseases like Cholera, Malaria, and Dengue have become more common. These problems when combined with poverty raise an extra burden for health authorities. Moreover, the issue of smog has increased in Lahore, Gujranwala and other regions of Pakistan causing breathing problems.

c. Economic Impact of Climate Change:

The economy is the main factor for a state's progress and prosperity. However, climate change poses a potential threat to the economic sector mainly food and energy. As mentioned before, the effect of climate change alters agriculture production thus causing food insecurity. In addition to that, the energy sector may also face problems due to these changes. The change in rainfall patterns and increased floods may disturb hydropower generation, thus enhancing the need for thermal energy. Moreover, the increase in global temperature has enhanced the need for energy demands for air-

conditioning requirements. These changing consumption patterns ultimately increase the emission of greenhouse gases thus contributing to climate change.

Mitigation and Adaptation Strategies:

With the rising population, weak governance, and climate change vulnerabilities sector, Pakistan needs some major steps to cope with the crises in the coming years. The recent events have awakened the Government to take stringent adaptative measures for crisis management. Some of the important adaptive measures to mitigate climate change are as under:

- The recent natural disasters show the lack of early warning systems in Pakistan. The recent snowstorm of Murree was updated by National Weather Forecasting Center Islamabad. However, the news went unheeded by the local authorities. In such crises, the Disaster Management Authority (NDMA), traffic management, and Ministry of Information and Broadcasting must collaborate on informing and reaching out to the people.
- There is a need to promote climate-smart policies for sustainable agriculture production. Government must take incentives to raise awareness and educate farmers in rural areas about the impact of climate change on agriculture production.
- Climate change must be mainstreamed as a potential challenge to national security, thus speeding up the actions at federal and provincial levels.



- To build climate-smart practices, scientific research, innovation, and technological development must be promoted.
- Though Pakistan has very little share in the global emission of GHG, it must transform into a carbon-neutral economy.
- The role of academia and research must be stimulated to enhance awareness of climate change and ways to curtail its daunting impacts.