

Climate Change is a Threat to Pakistan's National Security

1. Introduction

1.1. General statements

1.2. **Thesis statement:** Climate change presents a multifaceted challenge to Pakistan's national security in the form of infrastructural vulnerabilities, food insecurity, internal displacement and the increased demand for military resources.

2. National Security Challenges Posed by Climate Change in Pakistan

2.1. Infrastructural damage

2.1.1. Transportation system destroyed

2.1.2. Power grid impaired

2.1.3. Communication network disrupted

2.2. Food insecurity

2.2.1. Low crop yield

2.2.2. Soil degradation

2.2.3. Water scarcity

2.3. Internal displacement

2.3.1. Loss of homes

2.3.2. Health risks

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Climate Change is a Threat to Pakistan's National Security

Asia is considered to be one of the most vulnerable regions to changing climate conditions; Pakistan is ranked on the global climate index as the fifth most vulnerable country to climate risks. Although the country contributes to only 0.9% of the global carbon emissions but still floods and droughts have become regular for the country. The annual mean temperature of Pakistan over the past fifty years increased to 0.5° and is expected to increase by 3°C to 5°C with the existing global emission. After the 18TH amendment to the constitution of Pakistan, climate change became a provincial issue with the Ministry of Environment handed over to the provinces which implies that planning and policy implication became a local issue. Over the course of the past two decades, 10,000 individuals have lost their lives to climate-related disasters in Pakistan, while 173 extreme weather events have led to financial damages of approximately \$4 billion. Climate change presents a multifaceted

challenge to Pakistan's national security in the form of infrastructural vulnerabilities, food insecurity, internal displacement and the increased demand for military resources.

The 2022 floods in Pakistan had detrimental effects on the infrastructure of the country.

These floods were caused by multiple reasons including high precipitations, melting of glaciers and development of an intense low-pressure system over land due to heatwaves in May and June. These ^{Floods} had a devastating impact on the country's transportation infrastructure, causing widespread damage to roads, bridges, railways and airports. According to a report, more than 5730 km of roads were damaged and more than 246 bridges were affected across the country, cutting off entire towns and cities. The cost of rebuilding ~~the~~ the transportation infrastructure is enormous, ^{thus} placing an additional burden on ~~the~~ Pakistan's weak economy. Similarly, the floods of 2022 inflicted significant damage on Pakistan's power sector, impacting both generation and distribution capacities of the country's power infrastructure. The Post-Disaster Needs Assessment evaluated the

damages at 81 million USD. Submerged power stations and damaged transmission lines resulted in a blackout in the flood-affected areas of Pakistan. Likewise, the disrupted communication network ^{exacerbated} the national security challenges. Floodwaters damaged telecommunication towers, fiber optic cables and mobile network infrastructure, leading to a widespread cellular outages and internet disruptions across affected areas. An ~~announced~~ ~~inadequate~~ ~~response~~ was ~~delayed~~. Therefore, climate change can be seen viewed as a significant threat to Pakistan's national security in the form of ~~a~~ infrastructural damage.

Food insecurity has ^{also} emerged as a critical national security challenge for Pakistan due to the effects of climate change. Pakistan, being an agrarian economy is highly vulnerable to changes in climate patterns. Unpredictable weather patterns, including prolonged droughts ~~significant~~ and unseasonal rainfall significantly impact crop yields. It had been estimated that 65% of Pakistan's main rotational crops, including 10-15% of its rice production had been destroyed by flash floods. Pakistan produces and supplies

5% of world's cotton demand and it is the fourth largest rice exporter. Hence, Pakistan's low cotton and rice production ^{contributes} to the global and national food insecurity. The changing climate patterns in Pakistan results in the degradation of soil quality; Poor soil health affects plant growth leading to lower crop yields. Unhealthy soil can also lead to erosion, making ~~the~~ ^{the land} less arable overtime. Moreover, degraded soil affects water quality, as harmful substances can leach into ground water and nearby water bodies. Climate change exacerbates water scarcity; Rising temperatures ~~tend to~~ result in a higher rate of evaporation, which ~~means~~ ^{loss of water from the} implies ~~the drying out of~~ rivers in Pakistan. The drying out of River Indus is ~~an example~~ is an ~~adversing~~ indicator of the threat of water scarcity. Millions of people relied on it for drinking and ~~approximate~~ agriculture purposes. This is how climate change is a threat to Pakistan's national security in the form of food insecurity.

Climate change is also responsible for internal displacement which is one of the major

national security challenges for Pakistan. The devastating floods of 2022 affected 33 million people and 8 million were displaced. About 1700 people lost their lives out of which one-third were children. Such extreme weather events have led to a widespread destruction of homes, thus forcing people to relocate to safer areas within the country. The increase in migration from rural areas to urban centres has placed immense pressure on the already overburdened urban infrastructure, housing and services, contributing to social unrest and the poor living conditions. Disaster-affected areas also face several health risks including infectious diseases, mental health issues and malnutrition. 39% of Pakistan's population lives in poverty and loss of livelihood by floods and droughts have added to the difficulties. Women and children are prone to ~~mal~~ malnutrition due to damaged livelihoods, especially in rural ^{areas of} Sindh and Punjab. Thus, health risk: ~~is another factor~~ ^{is} due to changing climate conditions is another factor that gives rise to internal displacement within the country. Internal displacement can in turn give rise to

~~conflict~~ conflict over resources further straining the national security of Pakistan.

Climate change in Pakistan is a significant national security challenge, not only due to its direct environmental impact but also because it places a growing demand on military resources. As extreme weather events like floods, droughts and heatwaves become more frequent and severe, the military is often called upon to provide humanitarian assistance in the form of disaster relief, rescue operations and emergency response. The Pakistan army played a central role in providing humanitarian aid during the floods of 2010. The military deployed thousands of troops to assist in search and rescue operations, using helicopters, boats and specialized equipments to reach areas that were inaccessible due to flooding. The Pakistan army also set up relief camps and provided medical care in makeshift hospitals for those affected by waterborne diseases. This shows how climate-induced disasters require military resources to address immediate humanitarian needs. Additionally, climate-induced displacement

and heatwaves. Urban areas must incorporate climate risks into their urban planning strategies. For example, developing smart drainage systems and sustainable energy grids in Karachi. Additionally, disaster preparedness must be practiced at provincial level in Pakistan; Strengthening and expanding early warning systems for natural disasters is crucial to minimize the loss of life and property. Enhancing meteorological services and improving data collection mechanisms can provide the public with timely alerts, enabling them to take preventative actions. Furthermore, climate finance is an essential route for financing funds to aid climate change mitigations and adaptation actions. The Paris Agreement serves as a landmark climate change process. It states that the developed countries will provide financial assistance to developing countries for mitigation and adaptation against the impacts of changing climate. Unfortunately, the international climate finance is flawed and misleading. In 2020, the 'true value' of climate finance by developed nations to developing countries was just \$21-245

billion against the reported figure of \$833 billion. The promise made by developed nations of providing \$100 billion every year to developing nations has been fulfilled just once in the year 2022-2023. The government of Pakistan recognises that 'financing the mitigation and adaptation gap' is a challenge. Hence, there is a need for innovative financing solutions like carbon pricing instruments (carbon tax, cap-and-trade), nature performance bonds in which a company is required to pay a certain amount as bond, which will be returned if they meet specific environmental targets and debt-for-climate swaps which is essentially an agreement between two countries where one country agrees to forgive a portion of another country's debt if they invest that money into projects that help fight climate change. Therefore, climate-resilient infrastructure, disaster preparedness and innovative financing solutions are the ways in which Pakistan can combat climate change, in turn reducing the threat it causes to Pakistan's national security.

It is evident that climate change presents

a multifaceted challenge to Pakistan's national security in the form of infrastructural vulnerabilities, food insecurity, internal displacements and the increased demand for military resources.

The national security threats posed by climate change in Pakistan are ~~diverse~~ diverse and far-reaching. From the destruction of transportation networks to the declining agricultural productivity, climate-induced events exacerbate existing vulnerabilities and strain national resources. The increasing displacement of populations and ~~the~~ ^{the} demand for military intervention further underlines the urgent need for adaptive strategies. Addressing these challenges requires a multi-faceted approach, including developing a climate-resilient infrastructure in Pakistan, enhancing disaster preparedness and adopting innovative financing solutions. This can ensure that the country is better equipped to handle future environmental and security challenges.