



Youth Perspectives on Climate Crisis Awareness and Human Security: Analyzing Pakistan's Human and Economic Security Landscape

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Abstract

This study examines the relationship between climate awareness, economic and human security in Pakistan. The climate crisis has become a crucial topic in national security discussions, with experts and politicians stressing the urgency of taking immediate action to mitigate its effects. The National Security Policy (NSP) 2022-2026 is one of the first security documents in Pakistan to recognize the interconnectedness of human and economic security as key components of national security doctrine. In this framework, climate change is an independent variable in the realm of security, as it is causing a shift in the economic and human security framework of Pakistan. The study reveals that the youth, who make up over 48 percent of the population, recognizes the threat it poses to human and economic security in Pakistan. In this context, lack of awareness on governmental policies related to climate change, and not treating the threat of climate change as a national security issue are pertinent issues linked with the national security paradigm.

Keywords

Climate Change, Human Security, Economic Security, Rising Temperature

Introduction

The changes in global climate conditions have been unprecedented, and they are increasingly impacting the human lives and the security apparatus of the state. Climate crisis is directly linked with the human and economic security as it is multiplying the threat of resource scarcity, hunger, and economic recession. Consequently, it worsens the economic, human, social, and ecological factors. Pakistan from the past few decades has been severally affected by the climate change in the form of rising temperature, flooding, and unusual weather patterns. As per Global Climate Index (GCI), Pakistan ranked fifth most vulnerable country to climate change (UN-Habitat, Pakistan Country Report 2023, 2023). From 1998-2017, total 145 events of climate change were reported in Pakistan with an average of five events per year (David Eckstein, 2018). Therefore, changing climate conditions are directly affecting daily lives of the people.

Theoretical Framework

The post-cold war era brought a major transformation in the concept of security as United Nations Human Development Program (UNDP) gave the concept of Human security that has prioritized individuals in the realm of security. The framework of human security interlinks security, developments, and the rights. United Nations Commission on Human Security explains the need of human security in response to multiple traditional and new threat including poverty, ethnic violence, climate change, economic inequalities, health emergencies, and terrorism (Human Security in Theory and Practice, 2009). The 1994 Mahbub ul Haq report on human security gave a multifaceted comprehension of security that involved the political, economic, development, environmental, and humanistic aspect of an individual's security (Human Development Report

1994, 1994).

Under the advocacy of UN-General Secretary Kofi Anan, an independent commission was formed in 2000 to assess the security threats and ways to enhance human security. In this context, one of the commission members illustrates that the commission defined human security in terms of protection-empowerment framework. It defines human security as, 'Protecting the vital core of all human lives in ways that enhance human freedoms and human fulfillment' (Human Security: Concepts, Interoperability and Capability Branch, 2019). This meant 'protecting fundamental freedoms, 'protecting people from critical (severe) and pervasive (widespread) threats and situations' and empowering individuals and communities to develop the capabilities for making informed choices and determining their own well-being (Ogata, 2005). Under this framework, the theoretical description of human security is a viable framework to analyze the connectivity of climate change and economic security.

The existing literature on climate change and security in Pakistan has identified multiple factors including climate-induced social, economic and political stresses (CRSS, 2023). It is being observed that most of the studies on climate change and national security has focused on water scarcity and potential conflicts on it. (Khan, 2019) explains national security and climate change from a non-traditional security paradigm. From energy sector to agriculture, climate change is increasing the issue of resource scarcity, environmental degradation, and water aggression particularly in terms of national security. Numerous studies have lined climate change and traditional security issues. For example, (Malik, 2020) focus on the effects of climate change on the freshwater systems in Pakistan and the potential armed conflict in future on the water resource. Another dimension within the existing literature is the connection of human security and climate change from non-traditional security perspective.

In addition, (Ramay, 2009) is of the view that human security is considered as a major factor that links security and climate change. The issue of food insecurity, drought, migration, flooding, and rising temperature are linked with the security profile of Pakistan. Similarly, (Sultan, 2022) illustrates that climate change can act as a strong impact factor that can threaten the military security of Pakistan. As changing climate conditions can adversely affect military assets and infrastructure, troop transportation, border security measures, operational preparedness and force capability. In this context, this study has focused on the youth awareness about climate change, human and economic security to fill an indigenous research gap in the literature.

Methodology

The study employs a mixed-method research to evaluate the level of climate awareness and associated security risks. Case selection technique has been applied on this study by identifying qualitative identifiers from the qualitative data base. Five major factors have been identified by the United Nations linking climate change and human security were used to derive a qualitative assessment of the issue. Additionally, quantitative data was collected to gain an insight about the public awareness and their perception about human and economic security risk. Consequently, a survey based on purposive sampling has been conducted to assess the awareness about climate risk and its human and economic dimension within the youth population of Pakistan. The inclusion criteria of youth population in this study includes university students of Pakistan with minimum of twelve years of education. A sample size of 250 individuals between the ages of 15 and 29 were selected. Ten closed ended questions and one open-ended question was asked by the respondents related to climate change awareness from the respondents. Consequently, descriptive statistics were used for robust analysis within the SPSS software.

Discussion and Results

Five factor given by United Nations has been selected to assess the impact of climate crisis on the human and economic security landscape of Pakistan. Analyzing Pakistan's case from these five factors illuminates that Pakistan is vulnerable to climate change and the issue of climate crisis needs a rigorous transformation of Pakistan's security profile.

- **Climate change intensifies competition over land and water**

The existing studies endeavors that the changing climate conditions can increase the competition over territorial and water resources resulting an increase in the resource driven conflicts. The rising temperature level across the globe is a major concern for climate experts as it can lead the states towards intense drought, barren grazing lands, reduction in livestock and crop

production. Particularly, as happening in the case of Pakistan, rising temperatures and resultant flooding and land sliding negatively affecting the agriculture sector that contributes to 24 percent of the GDP. Small farmers become more vulnerable to these conditions. For example, according to a recent report published by the Planning Commission of Pakistan, between June to August 2022, Pakistan suffered a loss of 3.7 billion dollars due to heavy flooding. The long-run effects of the calamity is estimated to be 9.24 billion dollars that mostly affected the agriculture, food, livestock and fisheries. Sindh and Baluchistan has been the most affected provinces as thirty-five percent of the people are associated with cultivation in the flooded areas. 4.8 million acres of land in Sindh and 0.9 million acres of land in Balochistan was affected (Baigal, 2023).

According to estimates, global demand of water is expected to increase by 55 percent between 2000 and 2050 meaning that 3.9 billion people would be living under severe water stress (Environmental Outlook to 2050, 2012). Water stress in Pakistan is also becoming a security question for economic and human security due to number of factors. Firstly, lack of reforms in the water-intensive agriculture mainly due to the elite interest perpetrates water insecurity. The recent statistics shared by IRSA (Indus River System Authority) entails that in 2024, Pakistan is facing 30 percent of water shortage that is required for its cash crops including cotton and rice mainly because of the lower level of snow fall in the northern areas in winters. Kharif crops like rice, cotton, sugarcane, and maize require warm and wet climate with heavy rainfalls. They are usually sown in the month of April.

It is noteworthy that a report, New Security Challenges has been released by US State Department entailing resource scarcity and climate change as new confronting challenges to the global community. In this context, by giving the example of 2022 floods in Pakistan, the reports illustrates that climate change can destabilize a strategically important region fueling the issues of state fragility, conflict over inequality, identity and resource distribution, weak governance, inequality, poor infrastructure and social resilience (Report on New Security Challenges, 2024).

- **Climate change affects food production and drives up hunger**

In Pakistan risk for food security are highly driven by the changing climate patterns that affects the agriculture production and consequently the food chain. The Global Hunger Index (GHI)¹ of 2023 has ranked Pakistan at 102 number with 26.6 score to the level of hunger. These statistics illustrates that hunger in Pakistan is at a serious level (Global Hunger Index 2023: Pakistan, 2023) (Azam, 2025). According to the Integrated Food Security Phase Classification recent estimates, approximately 8.6 million population in parts of Sindh, Khyber Pakhtunkhwa, and Baluchistan are facing adverse food security crisis. The report has given estimates from March to June 2024 with 7 million people in IPC Phase 3 (Crisis) and 1.6 million people in IPC Phase 4 (Emergency) (IPC Acute Insecurity Analysis, 2024). On the other hand, drought has become a frequent phenomenon mainly in Sindh and Baluchistan since 2013. In 2019, drought affected 26 districts comprising five million people of Baluchistan and Sindh.

*¹ GHI is based on four factors including undernourishment, child wasting, child mortality, and child stunting,

CURRENT IPC ACUTE FOOD INSECURITY MAP AND POPULATION TABLE (MARCH – JUNE 2024)

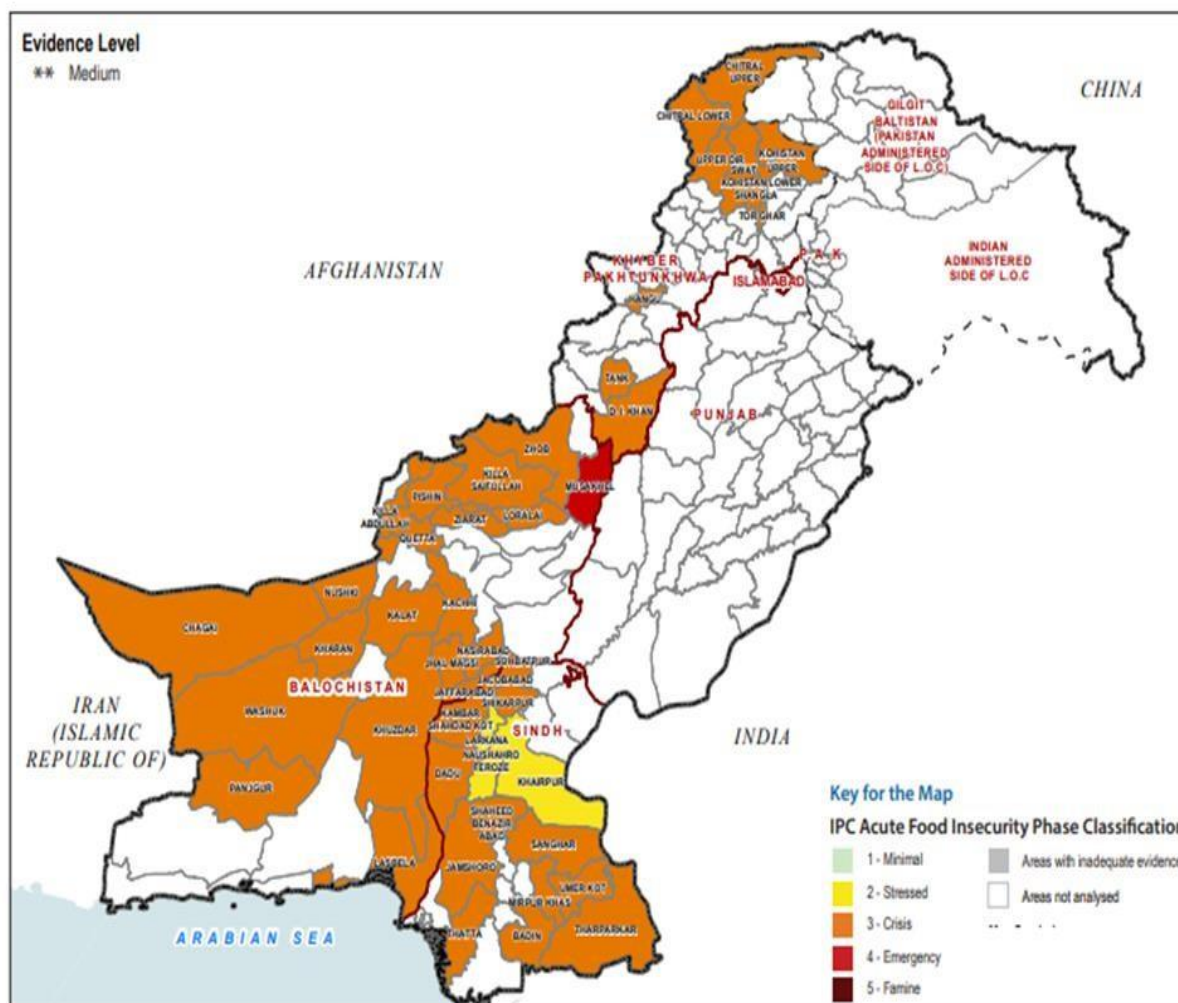


Figure 1

Source: (IPC Actue Insecurity Analysis, 2024, p. 3)

- **Climate Change forces people to move**

Climate migrants has been becoming a serious concern in many parts of the world including Africa, Madagascar, Congo, Afghanistan, and significantly in Pakistan. The main climate stressors that are causing displacement of communities includes drought, cyclones, rising sea levels, environmental degradation, heavy rainfall, and desertification (5 Facts on Climate Migrants, 2015). In 2016, in the Presidential Memorandum, Barack Obama illustrated the link between climate change, socio-political instability, and migration. The memo explained climate change as a multiplier threat and associated it with national security (Turrentine, 2019). Climate migration has been one of the major emerging issues in Pakistan. Pakistan is identified as one of the top ten countries most susceptible to climate change, leading to a rise in displacement. According to global estimates, climate migration in Pakistan will exceed to 600,000 by 2030 and have a high probability to reach one million (Ibrahim, 2023). It is evident that due to bleak living conditions people would relocate for a sustainable living.

The 2022 flooding has displaced around 8 million Pakistanis mainly from Sindh and Balochistan (Joles, 2022). Lack of social and institutional preparedness, and inadequate resources are some main causes of increasing climate migrants. The existing studies on two districts of Pakistan including Muzaffargarh and Tharparkar identifies that there are three types of migrations in these areas i.e., seasonal, temporary, and permanent. It is also noted that women are more affected by the climate-change inducements. Women face severe issues of health, low wages for

work, gender- based violence, and the pressure of household chores (Maryam Shabbir Abbasi, 2021).

- **Climate change increases poverty and inequalities**

It is observed that people with lowest income groups are more affected by the changing climate patters because they already lack adequate conditions to house hold and resources. In addition, mostly people associated with agriculture, livestock, fishery, and forestry are subject to climate crisis. Consequently, it further deteriorates the score of socio-economic inequalities and poverty. World Bank estimates that by 2030, approximately 132 million people will be in extreme poverty because of climate change and most of the people of South Asia and Sub-Saharan Africa would be affected by climate conditions (Health and Climate Change, 2024). Another study linking climate change and poverty in Pakistan was conducted by Oxfam. They selected three climatically and geographically diverse regions of Pakistan to assess the effects of climate change on the level of poverty. Badin, a coastal area from Sindh, Rajanpur from Punjab dependent on agriculture sector and affected by flooding, and Khuzdar from Balochistan drastically affected by drought. The results of the study show that poor communities tend to be the most vulnerable communities to climate change and natural hazards (Climate Change, Poverty, and Enviornmental Crisis in the Disaster Prone Areas of Pakistan, 2009). Due to lack of awareness and resources to deal with the risk of disaster, marginalized communities would further face poverty and inequality. This situation directly increases the human and economic security risk of state and society.

- **Climate Change increases security risks for women and girls**

Women in global south are already subject to social inequalities and lack of awareness as compared to men. Women are more prone to the climate related health and economic risks. Consequently, climate change is increasing the social injustices and making women population more vulnerable. United Nations estimates that eighty percent of the people displaced due to climate change our women. (Waheed, 2023). In 2010 floods in Pakistan, 49 percent of the displaced person in Sindh were women (Ranjitha Puskur, 2022). The consequences of flooding of 2022 on women security has been adverse. Approximately 650,000 pregnant women were deprived of basic health facilities and they had to deliver the child without any health care in the open sky.

Quantitative Data Analysis to evaluate the level of awareness in the youth population Table 1

Descriptive Statistics for Climate Change Awareness (N=250)

Variable	Mean	Mode	Median	SD	Skewness	S.E. of Skewness	Kurtosis	S.E of Kurtosis	Range
Climate Crises Awareness	1.33	1.33	1.33	.30	-.51	.15	.35	.31	1.56

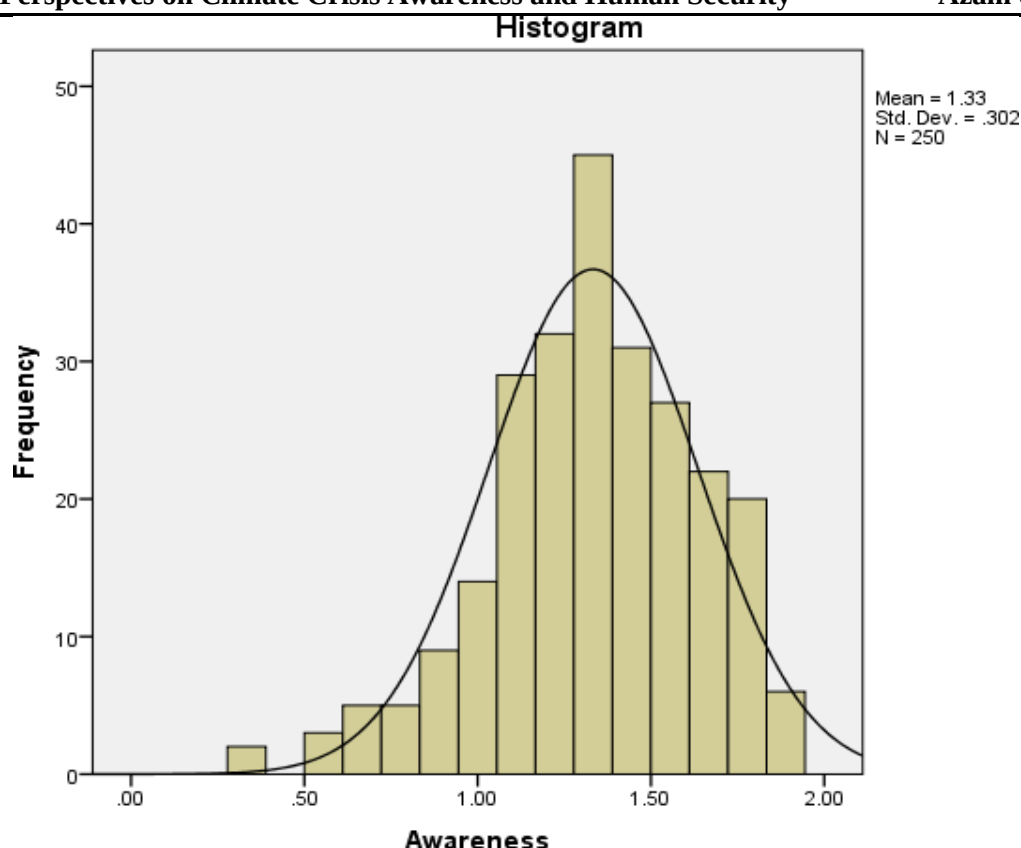
Note: SD= Standard Deviation; S.E of Skewness= Standard Error of Skewness; S.E of Kurtosis= Standard Error of Kurtoses

The statistical details of climate change awareness and perceptions of young population in Pakistan are outlined in Table 1. According to the table, the mean awareness score is 1.33 which refers to the overall general awareness in the sample. Therefore, the median and mode values are both 1.33, indicating a moderate awareness level among the respondents as most scored around this score, while the standard deviation of the sample population is around 0.30, it is also found that there is a slight variation in the levels of awareness amongst the respondents. The skewness value of -0.51 suggests that awareness scores are slightly skewed, with more respondents having higher values to the left of the center. As far as the kurtosis is concerned, the kurtosis value of the data is 0.35 indicating a distribution slightly more than the normal distribution.

From this table, it can be understood that there is a moderate level of awareness among youth in Pakistan regarding climate change. The scores generally fall within the average range, indicating that youngest women have a similar level of knowledge about this issue as male member have in the sample. Therefore, gender-based awareness is almost similar in this sample. Additionally, the distribution of scores is slightly skewed towards the higher end, rather than following a normal distribution curve.

Graph 1

Graph showing the distribution of awareness scores about climate change among youth population in Pakistan



Source: Compiled by the researcher

The histogram illustrates a shift slightly towards the left implying most participants have relatively moderate to high levels of awareness of climate change. The negative coefficient indicates that more participants have a higher awareness score and fewer participants have a low awareness score. It shows that even though the majority of the respondents have a moderate level of climate change awareness, a few of them have lower levels of awareness and this suggests that the issue of climate change and human and economic calculus needs a rigorous resolve by the government.

A survey was conducted to analyze the opinion of youth about climate mitigation and consequences of climate change on the economic security of Pakistan. The following themes gives an insight that they had little awareness about climate mitigation as compared to economic security and is link with climate change.

Climate Mitigation Awareness

Climate mitigation is a strategy that seeks to lower the quantity of greenhouse gases that are released into the atmosphere to slow down global warming. One of the examples of the climate mitigation policies implemented by the government of Pakistan is the “Ten Billion Tree Tsunami”, which is the program whose goal is to plant ten billion trees in the country as the result of deforestation and to improve the level of carbon sequestration.

Among the 250 participants, 85 participants (about 35%) said or agreed that they knew the answer to the question regarding climate mitigation policies that have been started or launched by the government of Pakistan. on the other hand, more than 60 percent of the respondents were not aware about the concept of climate mitigation and the policies to combat the issue by the Government of Pakistan. Thematic analysis in this context was applied to determine key themes and subthemes based on the participants' responses regarding climate mitigation policies and awareness.

Awareness of Climate Mitigation Policies

• Specific Policy Knowledge

Some of the specific policies that participants mentioned included the “Ten Billion Tree Tsunami”, the National Climate Change Policy (NCCP), and the National Adaptation Plan (NAP). These responses showed limited recognition of individual efforts towards combating climate change through tree planting, encouraging the use of renewable energy resources, and capacity

enhancement. Most of the respondents know about the Ten Billion Tree Tsunami project but did not know much about other policy frameworks. In this context, it is significant to note that this project was launched by the government in 2018 with a viable media and awareness strategy. Therefore, people had more awareness about this project as compared to other policies of climate change.

- **General Awareness and Renewable Energy Initiatives**

Several participants referred to measures of climate change like the use of solar and wind power in place of fossil energy. This shows an understanding of efforts to reduce climate change but perhaps not individual policies. In addition, due to price hike in electricity prices, people are generally showing more interest in alternate and low-cost sources of energy. Some respondents mentioned the significance of hybrid vehicles, and renewable resources including solar, wind, and hydropower.

Awareness of the Economic Effects of Climate Change in Pakistan

To address the question of how climate change is affecting Pakistan's economy, 132 out of 250 respondents (52.8%) stated that they are aware of the human and economic impacts of climate change. However, 61 respondents (24.4%) reported having no awareness, and 57 (22.8%) selected the option of "may be." This suggests that approximately half of the population lacks a clear understanding of the consequences of climate change on Pakistan's human and economic security. A thematic analysis was conducted on the responses to identify major themes related to the economic consequences of climate change on various sectors in Pakistan. This trend indicates that the respondents have a general understanding of the connection between climate change and economic security.

Economic Effects of Climate Change

- **Agricultural Impacts**

Numerous participants described the consequences of climate change on agriculture and how it has impacted their lives. Some of the concerns identified included low yields, high cost of irrigation, and diminished agricultural returns crucial to farmers' livelihoods and food availability in the Pakistan region.

Agriculture contributes significantly to the economy of Pakistan where climate change affects precipitation patterns, increases the frequency of catastrophes such as drought and floods, and increases temperatures which in turn affect crop yields, livestock productivity, and income levels of farmers which overall leads to food insecurity. For example, number of respondents expressed that, climate change adversely affected the growth of crops as the weather was not suitable for producing qualitative products. In addition, Floods, droughts, scarcity of water, shortage of food are main consequences of the climate change.

- **Water Scarcity**

Participants identified water shortage as another major issue. They pointed out that variations in rainfall, melting of glaciers, and elevated evaporation rate can ration water for irrigation, industries, and domestic uses. This has compounded the problem of water scarcity in Pakistan and affects several sectors. Respondents were of the view that, climate change seems to worsen the issue of water scarcity in Pakistan as the country struggles to manage demand due to population growth, urbanization, and poor water management regimes. In addition, thawing glaciers, increased evaporation rates, and changes in rainfall patterns will all contribute to overall water scarcity, water conflicts, and interruptions to hydropower generation. Another important dimension highlighted by the respondents was the grave conditions for livestock. As through limited water availability, the health of livestock is affected which translates to productivity loss henceforth leading to economic loss in the livestock sector. Therefore, overall due to water scarcity the yield reduces, and as a result, it impacts the economy.

- **Infrastructure Damage**

The disruptions to infrastructural systems, due to natural disasters like floods and storms, were cited often by the participants. They are too expensive to restore and affect economic activities thus causing further economic imbalance. The survey reveals that respondents were aware of infrastructural losses cause by changing patterns of climate. They expressed that every calamity, especially floods and storms, lead to destruction of properties that are expensive to rebuild. In addition, displacement of people and livestock also results in pressure on state

machinery and infrastructure. One of the respondents said that, floods, earthquakes, glaciers melting and many other disasters bring down infrastructures which cost money and hinder economic activities in that region for some time, money is spent in the construction of those infrastructures.

These themes show how climate change is affecting Pakistan's economy in several nuanced and profound ways. These effects suggest that there should be the need to come up with proper policies and measures to prevent such occurrences and tackle the impact of economic effects caused by climatic change.

It is interesting to note that only 51.8 percent of the population is aware of the link between climate change and economic security, while a slightly higher percentage of 57 percent is aware of the link between climate change and human security in Pakistan. This is concerning, especially considering the significant contribution of the agriculture sector to Pakistan's GDP. In fact, a majority of 75.1 percent of respondents acknowledged that soil erosion and water scarcity are directly linked to climate change and economic security in Pakistan. This demonstrates a strong understanding and awareness of the far-reaching consequences of the climate crisis on the economic security and sustainability of the people of Pakistan. This is further supported by the fact that 76.1 percent of the youth population believes that climate change exacerbates poverty and unemployment in Pakistan.

Furthermore, only 27.1 percent of the respondents were aware of the policies of the Pakistani government to address the climate crisis. Additionally, just 33.2 percent of the population knows that Pakistan has a national policy for climate change, industry, and agricultural awareness. However, 33.4 percent of the respondents stated that they are not familiar with Pakistan's national policy for climate change, industry, and agricultural awareness, and 32 percent were unsure. Moreover, 65 percent of the population believes that policymakers in Pakistan do not consider the climate crisis a matter of national security. These results suggest that the government needs to improve its efforts in promoting and creating a national consensus on addressing the climate crisis. These results suggest that there is a need to establish a connection between government policies and the public in order to increase the responsiveness of the people and the effectiveness of governmental policies. The following table outlines the opinion of youth population regarding main economic effects of climate change in Pakistan.

Table II

Thematic Illustration of Economic Effects of Climate Change

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|--|
| <ul style="list-style-type: none"> • Displacement and migration effecting skilled labor • Increased pest and disease incidences • Hydroelectric power challenges • Heatwaves can reduce labor productivity, increased healthcare costs, and damage to infrastructure. • Direct costs of Natural Disasters • Insurance and recovery costs due to natural disasters • Increased costs for irrigation and pest control • Reduction in farmer's income • The issue of food insecurity • Loss of property and animals • Increase in imports and export reduction • Unemployment, and poverty • Slower GDP Growth • Reduced Investment • Decreased Ecosystem services • Decreased tourism revenue • Decline in agricultural productivity • Damage to infrastructure due to natural disasters and changing climate patterns |
|--|

Source: Compiled by researcher

Conclusion

The results indicate that a majority of the youth population has a low level of awareness about the existing national security policies related to climate change and its consequences on the human and economic security of Pakistan. In this context, society is the main stakeholder. Therefore, a high level of awareness within the public, particularly the youth can act in a twofold way. On one hand, it can create community resilience and on the other hand, the public pressure and awareness can act as a catalyst in enhancing the institutional preparedness of the government to deal with the climate crisis and its consequent impact on human and economic security framework.

Recommendations

The following recommendations are proposed to enhance climate change awareness among youth and strengthen institutional responses:

- **Integrate Climate and Security Education into Formal Curricula:** Embed climate change and its intersection with national, human, and economic security within educational syllabi at school, college, and university levels
- **Design Targeted Youth Awareness Campaigns:** Launch comprehensive awareness campaigns using youth-centric platforms, such as social media, community events, and digital content to create National and Provincial Youth Climate Councils. In addition, there is a need to institutionalize platforms for youth engagement in environmental policy dialogues at both national and sub-national levels.
- **Localize Climate Messaging:** Adapt awareness materials to local languages and cultural contexts to ensure greater outreach and relevance. Another integral element is to focus on region-specific climate issues (e.g., floods, droughts, heatwaves) to connect policy discourse with lived experiences.

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