

**RESEARCH PAPER****Climate Change: Rising Security (Non-Traditional) Threat to Pakistan****²Dr.Nasreen Akhtar and ²Dr. Inamullah Jan***

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***Corresponding Author:** Inamullah.jan@iiu.edu.pk**ABSTRACT**

Climate change has become the main domain in security and political studies. The main objectives of the present study is to analyse the impacts of climate change on Pakistan's national security that is highly vulnerable in terms of climate change. Climate change is considered a grave non-traditional threat to the modern state system and its security. Climate change has become an essential non-traditional security realm that has immensely challenged Pakistan's security. Rapidly changing climate is posing a great challenge and the threat to state machinery and increasing a security threat to Pakistan. The research seeks state's policies in dealing with climate change and formulates the answers at national and international level which are absolutely essential for maintainable political and economic development of the state. Food crisis owing to climate crisis changing the societal behavior and undermining the nation building in recent time. Severe climate change is increasing vulnerability in agriculture, forests, water and live stocks, fisheries, forests etc. State institutions have done not much to adapt to climate change which makes the country more vulnerable. This research is significant because two heavy floods in Pakistan in 2010 and 2022 seriously challenged the country's capability and extremely influenced the capacity of state and society. The research is conducted on qualitative and interpretative methodology to grasp the present study and to inquire that what are the identifiable security threats which emanating in the security environment of Pakistan.

KEYWORDS Climate Change, International Regime, Security, State and Societal Behavior, Threat**Introduction**

Climate change or crisis is the consequence of namely large scale shift in terms of weather and these large scale weather shifts of great implication, globally, for peace and stability, therefore, climate change seems to be the most threatening global crisis. Since Pakistan does not have sufficient resources it seeks global cooperation and collaboration with international regimes such as Conference of Parties (COP), the United Nations (UN). Pakistan's climate is becoming increasingly unpredictable, resulting in frequently devastating flooding in some regions -Balochistan, Sindh, KP, and Punjab. Changing climate is likely to continue in future. Reports reveal that crime rates have been increased, flood affected people involved in criminal activities to feed their families. Thus climate change has also altered the social characteristics in the country. Climate change is an emerging international issue. It has increased the serious concerns of all developed and developing states.

Climate change –a non-traditional security threat- is posing sever challenges to Pakistan national security, state and society both. Climate change is posing the most gravest and urgent threat to the states' security- developed and developing countries are facing serious crisis by the rapidly changing climate in the world. Pakistan in the last two decades

has faced serious challenges caused by the unexpected climate change. From 2010 to 2022, there have been floods in every alternate year with the great loss of lives and economy. The country started tackling the issue since last two decades but not on revolutionary basis. There are many impacts and challenges of the increasing climate change on the security (national) of Pakistan- climate change has emerged as the non-traditional security threat and it an existential multiplier threat to the state and society. Experts on climate change have strongly considered the changing climate as a grave threat to the modern state and nations “when framed as a threat to national security and a country’s ability to protect itself and its citizens climate change becomes a more urgent menace” (Lieven, 2020), mass migration and threats to sensitive installation –during floods- pose a great challenge to the state’s apparatus.

Given the fact that the emission of greenhouse gases by Pakistan is lowest still the vulnerability is great due to manmade and natural calamity, for instance floods, bad governance, incapacity, and other cataclysms. Climate change highly indicated by rising temperature, changing patterns of rainfall, melting glaciers, and the worst flooding system, but during the natural calamity bad governance poses adverse effects on both living and nonliving things- it exposes the incapability of the state machinery . The menace of global warming is causing more damage to the poor and underdeveloped countries with no mechanism to counter it. Also, there are prospects that all these catastrophes are increasing in severity and frequency to impact the human and state’s security.

Pakistan has seen the most devastated floods in its history, but the last two floods (2010-2022) have more perilous- they increased economic, social and security issues. Flooding owing to the changing pattern of rainfall in 2010 and 2022 seriously caused massive humanitarian crises and loss of lives on a broader scale (Britannica, 2010). However, floods have increased Pakistan’s vulnerability to climate change though Pakistan is contributing less than 1% of global greenhouse emissions (Ministry of Planning Development and Special Initiatives, 2022). Both left crops, homes, and infrastructure in complete destruction and affected millions of people vulnerable and homeless-forced people to migrate from rural to urban areas. Reports reveals that these floods also increase criminality, displacement, women’s invulnerability, and disease in the country. Climate change is not merely a natural phenomenon this is also human’s behaviors which caused the great disaster.2022 flood in Pakistan shows that societal behavior and their actions have also contributed in increasing the vulnerability during and after the catastrophe.

Pakistan being an undeveloped state is collaborating with international regimes those dealing with a global changing climate crisis. Owing to flood 2022 which caused a great damage of over US\$30 billion Pakistan attracted the world towards this critical issue. At Sharm el Shaikh, Egypt, Group of 77 established fund “fund for loss and damage” in COP 27 to assist the countries those have suffered due to climate change (Ministry of Foreign Affairs, 2022).Though, the international community provided funds to Pakistan but flood victims, mostly, would not receive due share due to the serious lack of accountability and check at provincial level. In Pakistan, highly rising temperature is leading to melting its glaciers thus climate change has caused several serious problems such as mass migration, food security, poverty, drought, and water scarcity etc.

Understanding the Climate Change and State’s Policy

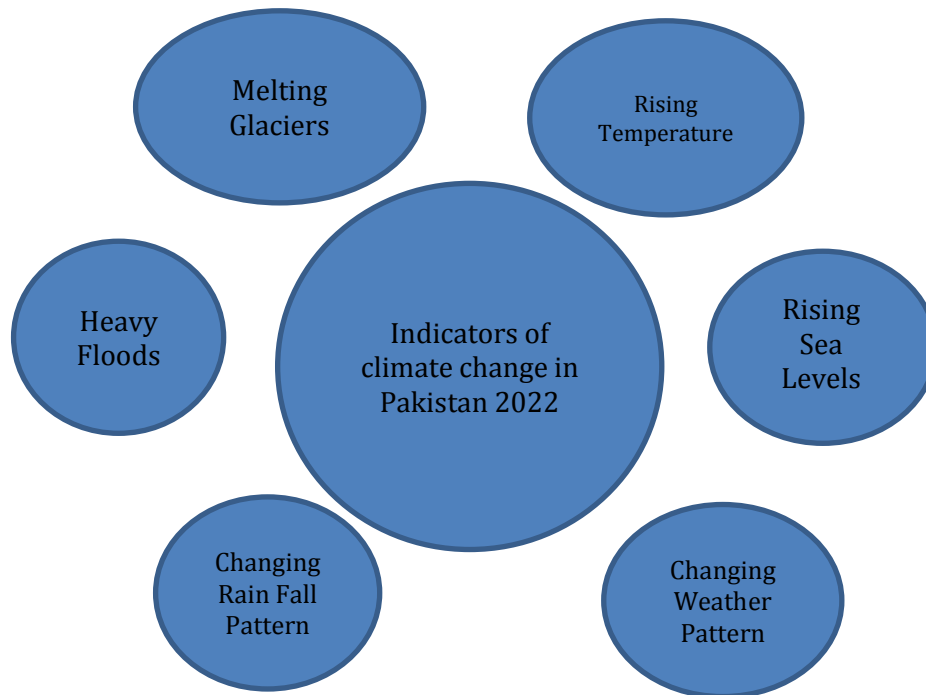
Since Pakistan is an agrarian state water security remains a major concern for Pakistan’s survival and stability- on one hand climate change has dramatically increased water insecurity- agriculture sector needs water to produce quality crops-as Pakistan is an agrarian state. On the other hand Pakistan is experiencing rise in variability of flows in rivers due to melting of glaciers and the changing pattern of rainfall. Sea level along the Karachi coast has been recorded approximately 1.1 mm per year (Interactive Country Fiches). It is expected that the annual callous temperature in Pakistan by the end of this century will rise

to 3-5°C along with rise of 60 centimeter in sea level. Rise in temperature may also strive for increased demand in energy. It is reiterated by the political leaders that water security is most important for a country's survival (Amanullah, 2018). Similarly, water shortage is another existential threat. In Pakistan, particularly, it gets severe due to the water dispute between India and Pakistan. Securitization of climate change can and does turn into military conflicts between the two rival states in South Asia.

Pakistan is an agrarian state but, unfortunately, with almost 37% of population lacks food security (The Express Tribune, 2020). Pakistan is an agricultural country and sufficient in the production of major crops- wheat, cotton and sugarcane. Food insecurity was observed during and after the worst flooding of 2022 in Pakistan. The issue increased by the climate change, impeded food production and accessibility. In 2022 heavy rainfalls had been observed- especially in the harvesting seasons causing- decline in food production especially the production of wheat-climate change has reduced the quantity and quality of wheat-this author has observed the Punjab's agricultural sector in South Punjab.

Changing pattern of monsoon, rainfalls, and melting of glaciers lead to high disasters such as floods and droughts. Growing locust spread and production is also a result of changing climate conditions. In Pakistan, every year a large number of crops are being infected due to locust's attack on crops. Climate change is though an environmental issue but its economic, social and political impacts (Scott, 2012) are underway. In 2018, Pakistan designed its first ever food security policy directing at the eradication of poverty and hunger and encouraging sustainable food production (Syed et.al, 2022). Climate change is an economic security issue the adverse effect it causes is loss of reduced crop and its quality, damage to human life ,property and , live stakes.Climate change has been recognized and accepted as a" major consequences for water supplies, health of humans, and socio-economic sectors (Gemmenne et.al. 2014).

The floods of 2010 raised questions on the governance issue and as well inability of disaster management. In 2012, the country's first National Climate Change Policy (NCCP) was introduced – the Environmental Ministry of Pakistan initiated the most needed policy and started in February 2013 with the collaboration of the United Nations Development Programme (UNDP). The first policy gave significant recommendations in three major areas: energy, agriculture and transport. The policy aims at the "protection and preservation of the environment and enhancing citizens' life quality". The "National Climate Change Policy" planned at making the country more resilient to climate change and joining the world community in leading to a low-carbon society- low carbon societies needs to control carbon (Bracco, 2019). The most important initiative includes Ten Billion Tree Tsunami Program, which was the state's top priority. In 2019, the government established a think tank to coordinate with the various ministries and to mitigate the intensity of the climate change. But 2022 floods showed there were several factors which increased the damaged. Figure 1 shows that there were several indicators in increasing the intensity of the worst floods.



Figur:1 Climate Change Indicators in Pakistan

Pakistan is playing a significant role internationally, contributing in COP26 and signing the global methane pledge (Khan, 2021). The country is one of the world's major methane emitters, predominately through its agricultural sector. Pakistan seeks international collaboration and financing to meet its commitment. While Climate-Smart Agricultural (CSA) practices generally save money in the long run, it is important to understand how these changes would impact large-scale farmers and their workers (Chaudhury and Ayub, 2019). The government, under the former Prime Minister, Imran Khan, made significant developments "to mitigate and adapt to the effects of climate change-introducing the use of electric vehicles (Siddiqui, 2022). Pakistan also aims at the reduction of emission by 50% till 2030 but it is conditional on the provision of \$100bn financing for the sake of clean and just energy transition. The PTI (Pakistan Tehreek -e -Insaf) government had also decided to establish a task force to mitigate the challenges. Pakistan adopted National Security Policy (2022-2026) with extending the concepts of "Comprehensive National Security", a formation of security that identifies that traditional and non-traditional threats and opportunities together impact on overall national security (Qasim, 2021). This is first ever national security of Pakistan. Beside traditional security, it also focuses on human and economic security.

Securitization of Climate Change and Multiplier Threats in Pakistan

Securitization of climate change could augment the issues which require cooperation instead of confrontation and competition at regional and global level. The securitization of climate change *is dominating* "international agenda creating both concerns-an expectation of effective change due to the fact that security *issues* constitute a high politics matter" (Brito, 2017)- changing climate has become matter of a serious states' security in the modern world. As we know, climate change is acting like a multiplier threats in the present prevailing issues connected to economic, societal and political security and environmental dynamics, (see figure 2). The comprehensive impact of these issues is measured to be a serious challenge Pakistan's national security.

Over the next century- as stated by an expert on climate change-the climate change, acute water shortage, poor infrastructure, and steep population growth has the potential to wreck Pakistan as an organized state and society”, (Lieven , 2020). Lieven states that among all kinds of external and internal threats, climate change is the gravest threat *non-traditional* to the security of Pakistan (Lieven , 2020). In 2022, we observed the worst flooding system, particularly in Swat, Khyber Pakhtunkhwa (KP). This flood was the most devastating in Pakistan’s history that damaged infrastructures, killed and displaced the people, damaged agriculture sectors, increased economic and security crisis, and poverty- during interview with a local resident of Swat revealed that during that calamity they were helpless and would not receive any swift assistance form the provincial or Central governments (Rizwan, 2023). People had encroached the river sides to develop hotel industry- without the government’s approved policy.

Unpredictable rainfalls and natural calamity, earthquakes’ has increased the existential threats and exposed the state’s vulnerability. People those lost their shelters, orchards, and livestock greatly needed rapid assistance to survive but the slow response of the governments exasperated the social and global reaction. Swat valley attracts local and foreign tourists and known for its beauty and tourism which is a great source of economy badly affected during worst the floods, more than 10,000 tourists were strand in valley. Many hotels and restaurants- illegally constructed- were washed away by the worst flood .The same disaster hit Swat in 2010, and the similar negligence was shown by the provincial authorities who granted permit for illegal construction at the vulnerable sites (The Express Tribune, 2022).

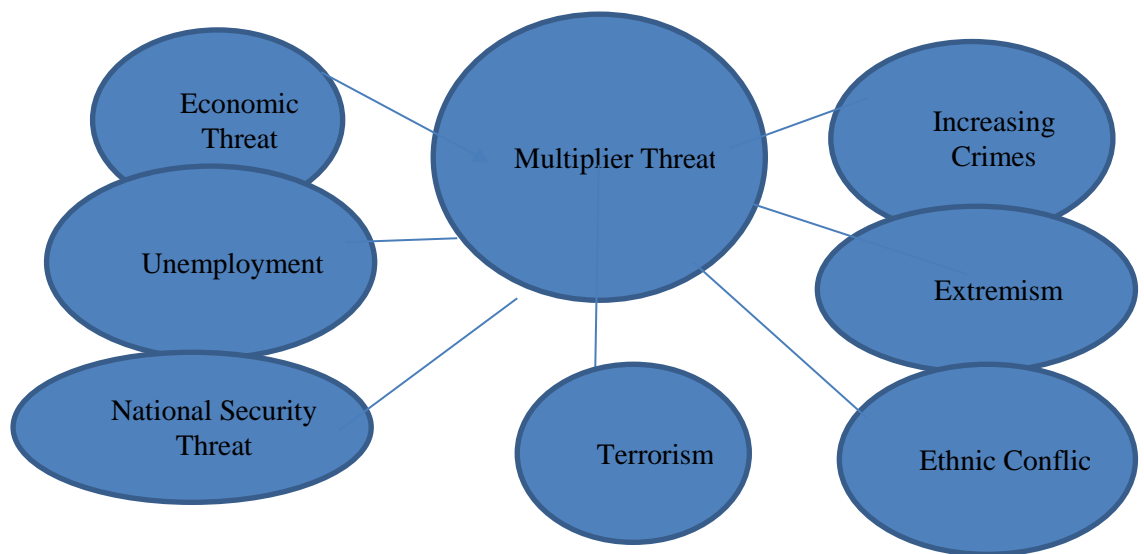


Figure: 2 Multiplier Threats in Pakistan

Intensification Climate Change: Non-Traditional Threat

Climate change has become a non-traditional security threat. States are developing policies to deal with a common environmental threats. We need to understand the impacts of increasing global warming and the survival in a modern and digitalized world. The modern states are branded by the power politics or traditional security threat if they experience internally or externally. But climate (change) does not recognize the boundaries and has the strong potential to affect any state or nation. Climate change, because of a number of reasons, has serious impacts on the national security. State’s territory is a part of “national security”, therefore, any physical change into a state’s territory is considered as a threat to the country’s sovereignty. Geographical location also determines the national security- mainly security endangered by the melting glaciers and the rise of a sea-level. National security is a multidimensional notion. Its internal dimensions are of great importance. Hassan Askari states “the broad categories of security are; external or

territorial, internal, societal and human security or the Nation of comprehensive security, terrorism and extremism, linkages between external and internal security, soft power and influence”,(Askari, 2022). In the current setup the concept of security has been extended and non-traditional threats have increased security threats. For example, “the effect in the wake of climate change include economic and business costs” (Global Business Policy Council, 2021). In some of cases, the losses are significant to justify that climate change is an economic security issue. Climate change has potential to affect all state’s powerful elements; population, military, intelligence capacity, social factors (Methew, 2011) and behavior. In 2012, an avalanche hit Pakistani base at Glacier, Siachen, and trapped more than 150 soldiers. This incident shows that the modern military is unable to meet these challenges. Inhospitable climate at glaciers, in sea, or on the ground may create a strong disaster in the country.

Industrial development, advance technology, population growth, and poor management of the resources, in developing states, have combined to alter the planet’s natural environment is dramatic and alarming” (Floyd, 2010) for the survival of state and society both. Human security is being challenged by the rising climate change. Climate change or environmental affects greatly effecting the values of the common people and communities (Dixon, 1998). In the recent flooding crisis the People migrated from Southern Sindh to Balochistan were engaged in criminal activities-young girls were kidnapped and transported from Sindh to Balochistan (Rabail, 2023). We have seen during natural and manmade crisis criminal activities increased, criminal gangs become active, and human security eroded. Climate change poses a great security threat to the entire nation and state- a poor country like Pakistan cannot provide speedy remedy to resolve such ‘natural disaster’ problems. In 2008, United Nations High Commissioner for Refugees warned about the danger of the large scale displacement owing to climate change the middle of the century about 250 million people would become “climate refugees, forced to permanently flee their homes and communities due to floods, droughts, hurricanes, and famines related to climate change (Sunjic, 2008). Two worst floods 2010-2022 compelled the people to leave their home towns and settle in urban areas and different cities in Pakistan.

The Global Humanitarian Forum(2009) reported that climate change affects people in several ways. Firstly, food security which emphasizes that the issue of reduced agricultural yield, low livestock production and reduced fish suppliers have resulted in hunger amongst the poor and children across climate change affected areas where the environment is degraded. Secondly, health issues which greatly impacts the society.

Pollution is also an international issue and it has changed the climate with growing concentration of carbon dioxide, water vapour etc. Climate change would make the ice caps in the Antarctic and Arctic melt and also increase sea level by 100 meters” (Mukherjee 2002)-Tsunamis and melting glaciers are serious existential threats. According to the recent study Pakistan’s glacier are melting and they become the major cause of worst floods during summer. Unprecedented heat waves not only melting ice in Europe Alp’s but in the Himalayan. Glacier melt increases to harsh monsoon and rainfall driven by a warming Arabian Sea (Chaudhary & Clarck, 2022). Climate change is increasingly and naturally variable, it varies from place to place, and climate record is extremely fragmented and unreliable. Climate change in the past had caused high range floods (Rana, 2009), and even altered the land maps owing to sea level- the heavy floods compelled the people to migrate. In 2010, Indus River in South Punjab displaced many people and destroyed huge sector of agriculture- crops, orchard, and infrastructure, this destruction change has affected the food production that has alarmed the national security. In 2022, Suleman Mountain Range was the main cause of heavy flood in South Punjab- heavy monsoon rains were recorded during the last four decade which affected over 100,000 people, damaged 4000 homes and over 200,000 acre crop in Dera Ghazi Khan and Rajanpur (Pakistan Today, 2022.)

The flood 2022, also extremely affected the major part of Balochistan. This province faces manmade and natural calamity-the 2022 flood however affected mostly poor people of Balochistan. The flood washed away the mud houses, livestock, crops, destroyed bridge, communication and transportation infrastructure. Balochistan was cut off from rest of the country that increased the threat of food security. The floodwater swept away full or parts of many mud houses, cattle, and crops besides damaging transportation and communication infrastructure (Javad,, 2022). During flood Lieutenant General, Sarfraz Ali, was leading the flood relief operation, in Balochistan, lost his life including team . The army rescues the people when they trapped or faced any kind of calamity in Pakistan. Flood 2022, has raised the concerns and questions for the provincial and central authorities. Sindh's some parts were badly affected by the devastated flood and people faced the same challenges and problems like Punjab, Balochsitan and KP but the Sindh government would not provide enough relief to the people that resulted in protest and agitation, consequently the Supreme Court of Pakistan intervene and ask the provincial government to provide the detail of the relief and management in Sindh – Chief Justice , Umar Atta Bandial, said “flood issue is not a pertaining to the administrative power rather it is a fundamental right of the people” (The Express Tribune, 202).

Rising Climate Change: Rain Fall Patterns and Impacts on Pakistan

The changing rainfall patterns and extreme weather events, drought and floods, have huge impact on present agriculture, threatening food security-in the years climate change has immensely changed the pattern of rainfalls that has caused various problems for the state and society. In June 2022, Pakistan received nearly 190% more this led to a severe flooding situation in the country and the government imposed a national emergency (Carbon Brief, 2022). Five day consecutive period of rain in the various parts of Pakistan were mayhem and caused the country wide flooding. The UN Secretary General, Antonio, tweeted- “Pakistani people are facing monsoon on steroids and launched 160\$ campaign to the people of Pakistan and urged the international community to help Pakistan” He said in his tweet “I have never seen climate carnage on the scale of the floods here in Pakistan”, (Antonio, 2022).

Global warming, rainfall, flooding system, and earthquake, all have hit the mankind on earth “climate change is threatening the collective existence of mankind as a result of the consequences of the impact of the evolving changes on natural processes of the environment (Gary,2020).Although, climate change is badly affecting the developed countries but Pakistan- without resources and will- is the most vulnerable state in the world.

Climate Change and the Affected Sectors in Pakistan

Pakistan is facing the gravest impacts owing to rapid climate change. As we have seen in the last decade intensified and frequent climate change in the shape of floods, rain falls, have increased vulnerability to the state and society. The impacts are not limited, they have seriously affected mainly significant sectors; agriculture, food security, water, health, biodiversity, forestry, and social behavior.

Agriculture Sector

Pakistan is an agrarian state and geographically, located in a hot region- South Asia. Atmospheric shifts and temperature rises are higher than the other regions. The rivers are mainly supplied by the glaciers of Hindu Kush-Karakoram Himalayan and as a result of global warming, they are reducing rapidly; the economy is agrarian so vulnerable. The country is facing perils of inconsistency in monsoon weather and the amount of rainfall every year causing great floods and drought. So water security, food security, energy security, and agriculture sector are at grave risk (Boone, 2008).In Pakistan wheat, cotton, rice, and sugar cane, maiz are cultivated, these crops are extremely important and need

excessive of water. It is predicted that by 2040 as the temperature goes up, the agricultural production will reduce by around 8% to 10% (Cradoc, 2020). Climate change is threatening our crop production system. In Pakistan, rice and wheat are the major crops and leading staple food of the agriculture sector (Shahbaz, 2021). Pakistan is an agricultural country which has 47% of its people attached to this sector. Impact of climate change induce serious threats to the agrarian economy of Pakistan. Food security is now negatively impacted through abrupt temperature variations in the region. In Punjab, farmers are affected whose sole revenue dependent upon crop production in arid lands (Ahmed, 2013).

Food Security and Implications for Pakistan

Climate change is causing reduction in food production, it is considered as the detrimental conditions for sustainability of the food system (Braun, 2013). Rice production in Sindh badly affected due to sever temperature (Joyo, 2018). Another crop which is important in Pakistan, wheat also affected. The per capita availability of wheat cereal under the impact of climate change to check the level of food security as wheat is considered as a basic nutrient in Pakistan. In irrigated regions, rising temperature in November and January had a negative link with wheat productions (Tariq, 2014).

Climate Change in Pakistan: Contending Approaches

The indication of the fact that more people in Pakistan have lost their lives due to unexpected monsoon and the changing patterns of rainfall, and heavy floods than terrorism, describes the vulnerability of the state to non-traditional security threats. Security threats due to climate change vary from interprovincial rivalry to poverty, scarcity of resources and internal displacement of people. Displacement mostly results in urban migration and is predicted to as much as 70 percent by the end of this century-thus “climate change poses a grave threat to safety and security to Pakistan (Khan, 2019). Rising climate change has exacerbated Pakistan’s non-security threat. Unexpected floods, droughts, and higher temperatures that impact agricultural harvests are among major climate change-related factors that can increase rural-urban migration. Even urban centers do not have the ability to counter the effects. Even the largest cities of Pakistan like Karachi, Islamabad and Lahore do not meet the living standards as prescribed by the World Health Organization in terms of air quality and water efficiency.

Food security is one of the biggest challenges caused by the climate change. Agriculture sector being a largest source of income of state and also an employment source is under threat due to the phenomenon. Food insecurity is neglected in Pakistan and the states would not pay heed in providing the food security to the people of Pakistan- food insecurity, however, became one of the major causes of civil war in Syria (Ruskin, 2017). Pakistan’s ruling elite may not comprehend the consequences of the rising vulnerability owing to climate change, therefore, “allocation of resources, poverty alleviation, planning in agricultural sector, urban development, health, crime, resources and even diplomacy, needs to include climate adaptation strategies as a core component” (Sanaullah, 2020).

Climate change has contributed to the great security challenges for Pakistan. Being highly dependent on agriculture sector for its revenue generation, the state has been affected by the changing patterns of rainfall, droughts, earthquakes, and floods. The expected rise of global temperature is increasing great implications for a developing state like Pakistan especially in terms of economic destruction. Pakistan being highly dependent on agriculture requires water resources which are also getting scarce due to climate change (Ringer, 2015). Indus River has been reduced to 40% and continuously affecting the country’s crops (Yusuf, 2022) which means the source of millions for their bread and butter and the backbone of the state.

Like other states, developed and developing both, the heat wave in Pakistan in July 2022 with the record temperature exceeding 120 F has triggered many problems in Pakistan. A number of people died due to warmer temperature. On the other hand, there is massive flooding and damages in other parts of the country, water shortage, devastated floods in whole country in general and Balochistan in particular. Pakistan should treat these climate disasters as a full-fledged national security emergency before they stoke conflict that adds further stress amid the country's other numerous challenges. Pakistan has been ranked 14 among the 17 extremely high water risk in the countries of the world, Pakistan's ground water resources are getting down, mainly supply for water irrigation -if the situation remains unchanged Pakistan may face water scarcity by 2025 (Maqbool, 2022).

Pakistan has been ranked among the top 10 most vulnerable countries on the Climate Risk Index for past 20 years, with 10,000 fatalities due to climate-related disasters and financial losses amounting to about \$4 billion from 173 extreme weather events. Climate change and these problems spark climate-related conflict over resources such as water. Climate-related disasters like heavy floods would also exacerbate tensions among groups who already have a history of conflict- several non-Baloch people from Sindh entered Balochistan during the flood 2022 and increased insecurity among the local folk (Rabail, 2023). These circumstances would cause serious social and political threat to the country. It is not only flood and rainfalls increasing heat waves further led to food insecurity, which can also be a source of undermining peace and stability (Siddiqui, 2022) in Pakistan. High temperatures have damaged crops and orchards cutting down the wheat production of Pakistan-the months of March and April 2022 were the hottest and driest months in Pakistan's history since 1960 (Bahtti, 2022). Due to the highly rising temperature the grains of wheat could not complete biological cycle and shrank into size. Climate change has turned the arable land to unusable land and also adversely impacting the livelihood of small farmers. Pakistan is seriously facing wheat shortages amid Russia's war in Ukraine. Pakistan's domestic wheat production in 2022 was reduced by 10% (Bhatti, 2022). Thus gape between supply and demand drastically increased and Pakistani people faced serious shortage of flour in the last two months this year. Pakistan Statistics Bureau, weakly, measures price fluctuation of much needed commodities in country and revealed the rapidly increasing prices of the daily use essential items-vegetables, pulses, oil, flour, rice and onion etc (Bukhari et.al, 2023).

Climate Change is a serious issue and if not sufficiently addressed, it would have dire security implications for Pakistan in all sectors like social, economic, geographic and political sectors. According to the Climate Risk Index (CRI) report of 2016, Pakistan is the 7th most vulnerable country to climate change and global warming while it was 10th in 2014. Climate change being negatively related to economy, poses serious threats for economic sector due to less generation of agriculture and water shortage. Mainly, climate change affects the poorest people in society. These effects increase the mass migration and also criminality due to increase in natural calamities and disasters and these factors seriously increasing security threat at societal level. These non-traditional security threats have more potential to wane the state's capabilities.

A thoughtful question arises that can climate change as a non-traditional security threat could be a national threat to the security of Pakistan? As Methew said, climate change has a potential to threaten the traditional security components. Droughts and floods with frequency can lead to instability in terms of protests, political exploitation and rising radicalization. Any influential group may use the sufferers and vulnerable people. Arab Spring (2011) is one of the best examples of such cases where spike in prices triggered the people's resilience and led to Arab Spring. Pakistan needs to learn from these events because states like Tunisia and Syria were experiencing droughts due to climate change. Climate change adds challenges especially in terms of security in fragile societies

The World Bank (2021) reports revealed that “climate change has affected occupation of individuals as well as influenced other ways, similar to outcomes of disastrous events because of environmental change made numerous individuals needy and helpless”. Majority, in the developing states, people “have less guard framework against these cataclysmic events because of their poor monetary conditions or less created foundation causing risk to them” (Akram& Hamid, 2015).

Increasing Climate Change and Implications

The effects of climate change are more intense in a few places on earth, for instance, an arctic region where glaciers are melting faster. In Pakistan Northern region, Hindu Kush, and the Himalayas, mountains are facing effects of climate change. Snow is melting at a faster pace in the Northern region of Pakistan. During summer the flow of water increases in the Indus River because glacier melts in the Northern region. Almost 90% of water in the Indus River flows in three months which is crucial for agriculture (Menhas, 2016). In case of any minor change, Pakistan’s agriculture gets affected badly (discussed on page 7). Climate change has also impacted weather conditions – hard weather seriously affected human lives and livestock.

Pakistan is facing serious outcomes of climate change such as water crisis, food security, disease, and social issues. Pakistan is a developing state and it lacks sufficient resources in mitigating the impacts of sever climate change. But state’s behavior has been an obstacle in comprehending the serious implications for the state and society. From the perspective of green theory, the environmental requires a change in human values and behavior and therefore presents an opportunity for political innovation to the nation states to transform their policy patterns to meet the global challenges. Indeed, global warming is a challenge but the state of Pakistan does not have economic resources and competency to provide the safe mechanism and effective implementation of adaptation policies or it has been neglecting this rising challenge and never perceive it as a “security threat”.

Increasing global warming is extremely causing the rapid melting of Himalayan glaciers rapidly. This making vulnerable to climate change in all kind of areas whether it is arid, semi-arid, or coastal areas (Hadid 2021)-people in mountains areas pay more heavy cost of the catastrophic climate change- they mostly depend on nature. Periodic natural threats, such as heavy flooding, are extremely affected agricultural production, and trigger food shortage and security in the state, as we have mentioned, these elements are potential threats to Pakistan’s national security. Climate change is causing rapid glacier melting that leads towards high levels of water in the rivers causing floods, dangerous for standing crops (Anwar, 2020). High and low rainfall is another outcome of climate change leading towards low agricultural products (World Bank, 2021).

Due to a lack of political stability, no sound food policy exists in the country. Pakistan is an agrarian country, and its economy, mainly, depends on it. Currently, food production is not according to the need of the growing population. According to the Pakistan Bureau of Statistics report “61% of the population is expiring severe food insecurity (Khetran 2021). Study shows that food insecurity, in Pakistan, has been an issue for the last many years.

The increase in the food prices, changes in climate leading towards unpredicted and an alarming food security challenge, especially for developing nations like Pakistan. Increasing high temperature, degradation of land resources, water-logging, and soil erosion all climatic changes directly affected the agricultural production which is the main source of food in Pakistan, and increasing issue of food security in Pakistan (Arif et al. 2019). No concentration was given at the national and regional level, in the past, to address climate change.

An Existential Non-Traditional Threat to Pakistan: An Empirical Aspect

Pakistan faces many environmental challenges, which are posing serious threats to human security. Climate change is seriously deteriorating health, agriculture and economic sectors of the country. The main reasons are; deforestation, increasing population and lack of resources to mitigate and adapt to climate change effects on state and society. In South Asia, Pakistan is facing water crisis. Lack of adequate reservoirs to store water, water dispute with India, old irrigation system, water wastage, lack of awareness, and misuse of water in daily life has greatly caused water insecurity in Pakistan.

Deforestation has caused great environmental impact-deforestation commercial profits and domestic use- people cut the tree for different purposes – furniture, energy, and economic purposes. A farmer cut trees and sold out because he needed money to marry his son. The previous government launched to increase forest, which included Green Pakistan Program, Billion Tree Tsunami and REDD Plus (Huma, 2018). But the recent flood in Khyber Pakhtunkhwa has which hit Pakistan damaged 10 Billions Trees Tsunami Program (BTTP) Billions Tress Afforestation Program (BTAP) .Several sites have been damaged .Flood 2022, was started from Kalam in Swat damaged the plantation sites, rivers, bridge, billion trees programme was badly affected and affected Rs. 108.530 million in economic loss (Pakistan Today, 2022).

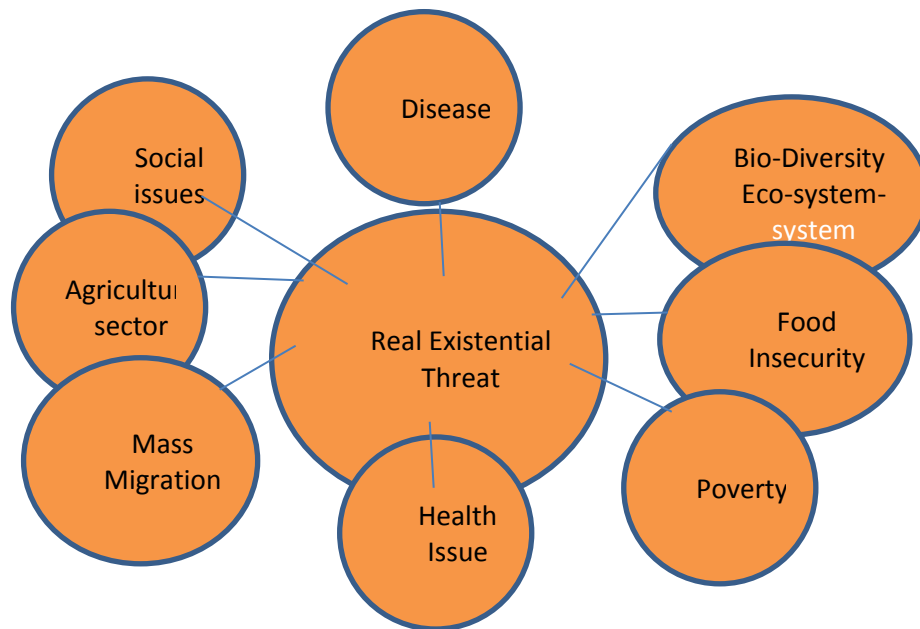


Figure. 3 Existential Threat in Pakistan due to Climate Change

Air pollution is a major problem in Pakistan- this is manmade phenomenon. The United Nations Environmental Programme (UNEP) reported in 2022 that Air pollution is and climate change are deeply connected. Moreover, highly ineffective energy use, speeded growth in vehicles, population, and increasing industrial activity are the major causes of deterioration of ambient air quality. Quickly rising energy demand, fuel substitution-emitting coal and oil, and high energy intensity- are the key factors contributing to air pollution. Data shows that carbon monoxide levels in Karachi and Lahore exceed WHO’s recommended levels- Peshawar, Rawalpindi, also high compared to WHO’s permissible levels (Khan, 2005).

Every year air pollution has turned into an important environmental problems in Pakistan. (Islam, 2023) air pollution in Lahore is the result flawed of development policies “ urbanization in the city in the form of new housing societies has led to huge distance covered by the cars air pollution comes from smoke from transportation, use of generators, cooking sectors, barbeque in cities, The effects of global climate change in Pakistan are

already evident in the form of growing frequency of droughts and flooding, increasingly erratic weather behavior, changes in agricultural patterns, decreasing water, and the loss of biodiversity. In 2017, a German Think Tank ranked Pakistan as seventh the most vulnerable country to climate change in the world and it is being consider a major security threat multiplier in the country but the impacts of biodiversity loss are yet to become mainstream (Jaffery, 2018).

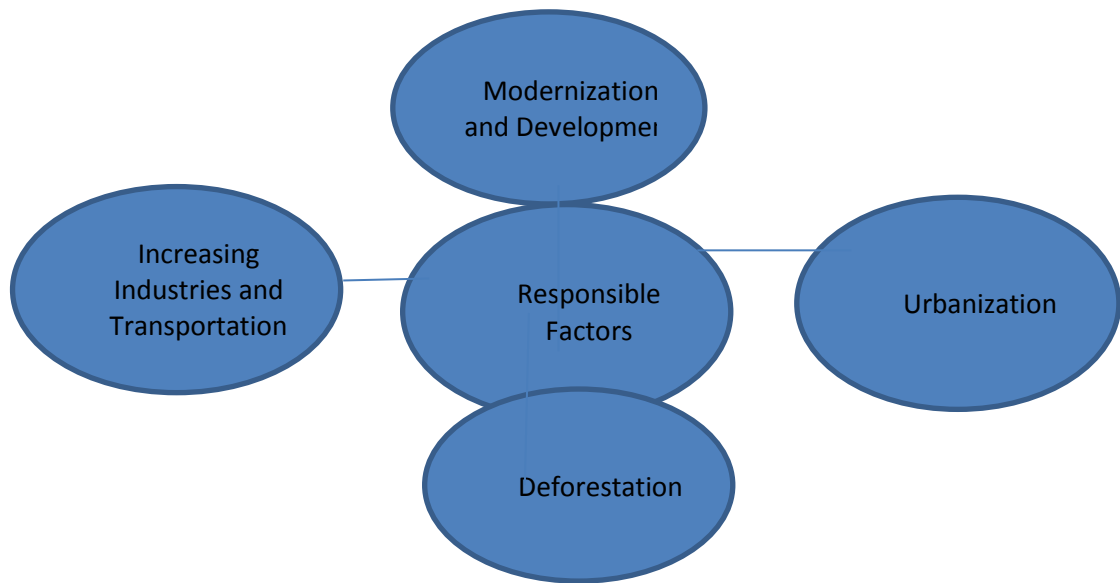


Figure. 4 Factors

Conclusion

Pakistan is the most vulnerable state in terms of climate change. Climate change - a non-security threat- is posing serious threat to Pakistan’s national security. Though natural calamity is not predictable but it could be managed by the state’s policy and effective mechanism. We need to examine the social behavior as well. Constructions of buildings on natural sites, and increasing pollution by vehicles are manmade disaster. The state needs to educate its people. Pakistan is an agrarian state but agriculture is being neglected. The state and farmers’ priorities have been changed. Pakistani governments may not have the interests in uplifting this sector which is a potential source of food. Water scarcity and insecurity are the serious threat. The state needs to build Dams on emergency bases to avoid water crisis in future. A comprehensive and applicable policy should be introduced that may alter the people’s behaviors and improve the governance at state level.

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