Asian journal of International Peace and Security (AJIPS)

ISSN-e: 2707-8809

Vol. 9, No. 3, (2025, Autumn), 122-135

Climate Change as a Threat Multiplier to National Security of Pakistan: Implications and Way Forward

Qurat ul Ain,[1] & Noor Fatima[2]

Abstract:

This research focuses on the way of analyzing the threats of climate change on the human security of Pakistan, the economic stability, resource governance, and the national security of this country. It investigates the implications in terms of internal displacement, the potential of conflict, and food insecurity and long term development planning. The study seeks to make such contributions by analyzing the effects of climate change on various areas of national security and the way forward in the case of Pakistan. This study is based on qualitative research methods, using secondary data collected to examine the linkages between climate change and national security dimensions. It argues that the issue of climate change is a serious security challenge that requires an integrated climate-informed policy framework. Besides being a member of international and domestic discourses, Pakistan has been embracing diverse measures to reduce the negative impacts of climatic changes on its socio - economic sectors. But climate change is a worldwide problem which requires joint efforts of the world leaders. The findings reveal that climate change significantly intensifies existing socio-economic vulnerabilities, increases risks of internal displacement and food insecurity, and poses long-term challenges to sustainable development and security governance in Pakistan.

Keywords: Pakistan, climate change, non-traditional security threat, socio-economic challenges, resource governance, economic stability

INTRODUCTION

In modern security debate, non-traditional security threats are those transnational issues (e.g. pandemic, environmental degradation, or climate change) that destabilize the state without necessarily engaging military conflict. Pakistan is considered to be one of the most climate-prone countries in the world, although the country produces less than 1% of the total global greenhouse gas emissions (World Bank, 2022). Extreme weather events, melting glaciers, unpredictable monsoons, temperature rises and urbanization have increasingly exposed the nation to climate risks. The policy and strategic planning of Pakistan is now obliged to recognize the problem of climate change as a national security issue.

[1] PhD Scholar, Department of Politics & International Relations, International Islamic University, Islamabad, Pakistan. Email: anniesassi750@gmail.com

[2] Associate Professor, Department of Politics & International Relations, International Islamic University, Islamabad. Email: dr.noorfatima@iiu.edu.pk

Pakistan has been among the top 10 most vulnerable countries during the last 20 years with 10,000 deaths and financial loss of more than 4 billion during 173 extreme weather events due to climate change. Such problems pose a threat of producing climate-related conflict over limited resources, such as water, that have been brought about by effects of climate change. Climate change can lead to disasters like floods, heat waves or tsunamis which can increase the tensions between two communities that are historically hostile. Any of these situations would be a significant threat to Pakistan and have grave consequences on any government in the short term with a climate disaster or even as a measure to prevent them (World Bank, 2022).

This research examines the impacts of problems that are related to the climate change on the national security of Pakistan. Specifically, it argues that Pakistan, which already experiences significant number of security problems, is also susceptible to climate change, in a non-conventional way. In the study, the researcher seeks to explain why Pakistan is one of the countries to be most exposed to climate change with low levels of greenhouse gas (GHG) emission levels. The primary indicator of the change in climate is that due to the rise in temperature, glaciers melt and more is evaporated, and this influences both living and non-living organisms. Global warming has threatened the planet Earth due to climate change, and the poorer countries are more susceptible to the adverse effects of climate change because they lack greater resilience and coping strategies in comparison with the rich one (SDPI, 2024).

In the given research, it is indicated that Pakistan is not able to endure an adequate reaction to the climate change since it is a developing state suffering a whirlwind of various security issues. It implies that both domestic and international efforts can be combined to make the country more resilient to climate change impacts. This study suggests that instead of perceiving climate change issues as ordinary low politics, there is need to treat them as high politics. To act on the existential threats posed on Pakistan by climate change, the national policy makers of security and institutions in the state need to come up with a national action plan. The study also suggests that the prioritization of climate change is expected to appear in the implementation of the regulations and the initiation of the feasible climate change mitigation and adaptation programmes (Brito, 2017; Chaudhry, 2022).

LITERATURE REVIEW

Climate change is increasingly discussed as a non-traditional security issue for Pakistan because it shapes economic stability, social well-being, and long-term national resilience. Many researchers point out that Pakistan is highly exposed to climate risks due to its location, population pressures, and limited capacity to manage extreme events (Kreft et al., 2021). Shifts in rainfall patterns, rising temperatures, and rapid glacial melt have led to more frequent floods, droughts, and storms. Recent assessments show that Pakistan remains among the most climate-affected countries, highlighting the seriousness of these challenges (Eckstein et al., 2022). Major disasters such as the 2010 and 2022 floods damaged key infrastructure, displaced communities, and burdened state institutions (World Bank, 2022).

Studies also note that climate stress can weaken the economy, reduce agricultural productivity, and worsen food and water insecurity (Rasul & Sharma, 2018). These disruptions have implications for

social stability and human security, as environmental shocks often increase displacement and competition over limited resources (Yamin et al., 2021).

Over the last few years, Pakistan stands out as a focal point of investigation in the world discourse of climate-security, in large part because of the extent and magnitude of extreme weather, and the socio-political consequences thereof. Research and policymaking agencies constantly rank Pakistan among the most climate-beatable nations on the planet, highlighting the fact that climate-related stress factors are intensifying economic instability or uncertainty, societal injustice, and political deficits of the nation (World Bank, 2023; Germanwatch, 2023; SDPI, 2024).

The weakness in the institutions of governance structures aimed at addressing the climate challenges is a common theme that runs throughout studies projected on Pakistan. The policy environment of the country and the effectiveness of various policies in planning and frameworks, such as the National Climate Change Policy (2012, revised 2022 have been praised as comprehensive but have been criticized in their ineffectiveness at developing policies, schedules, and various initiatives (MoCC, 2022; SDPI, 2024).

Despite a growing body of research, important gaps remain. Much of the existing work focuses on environmental impacts rather than examining how climate risks directly interact with Pakistan's security planning. There is also limited region-specific research, even though provinces experience climate threats differently. Additionally, the effects of climate-related migration on urban pressures and social tensions are understudied. These gaps show the need for more integrated and security-focused research on climate change in Pakistan.

RESEARCH METHODOLOGY

This study adopts a qualitative research methodology to explore how climate change acts as a threat multiplier to national security, intensifying risks such as resource scarcity, internal displacement, and socio-economic instability. Data has been gathered through an in-depth review of policy documents, climate impact assessments, and academic literature, supported by semi-structured interviews with experts in security studies, environmental policy, and disaster management. The material was examined using thematic analysis to identify the specific pathways through which climate stress amplifies existing vulnerabilities within national security frameworks.

CLIMATE CHANGE AS AN ENVIRONMENTAL PHENOMENON VERSUS A SECURITY CONCERN

Climate change, as an environmental phenomenon, refers to long-term alterations in temperature, precipitation patterns, and the increasing occurrence of extreme weather events. These changes represent physical and ecological processes that affect natural systems but do not, in themselves, constitute security threats. Climate change becomes analytically relevant to security studies only when such environmental stresses intersect with existing social, economic, and institutional vulnerabilities. Without this distinction, environmental change risks being treated as inherently destabilizing, which obscures the conditions under which security risks actually emerge.

Climate-related security threats arise when climatic stresses intensify resource scarcity, economic fragility, governance pressures, and social instability. In the context of Pakistan, dependence on climate-sensitive natural resources, limited adaptive capacity, and uneven development increase the likelihood that environmental disruptions translate into human insecurity, internal

displacement, food insecurity, and pressures on national stability. By framing climate change as a threat multiplier rather than a direct cause of insecurity, this paper clarifies the pathways through which environmental change evolves into security challenges, thereby strengthening the analytical focus and aligning the discussion with established climate–security frameworks.

Pakistan, Climate Change and National Security

The dormant national security can be awakened by threat multipliers such as poverty, persecution, internal population movement, shortage of resources and inter-provincial competition. Due to a convergence of geophysical and topographical variables that expose the state to the recurring extreme weather events which are projected to increase with the climatic change, is a great threat to the national security of Pakistan. Moreover, it is also a subject of serious concern that much of the Pakistani economy relies on natural resources, which can be affected by the adverse impacts of climate change. Pakistan has already made several measures towards mitigating the adverse effects of climate change on its economic sectors, apart from the international and national discussions. However, due to its global scope, climate change needs a concerted effort on the part of the world leader (Saad, 2024, Aslam et al., 2024).

The fact that the source of Pakistan surface water is over 70 percent by the Indus Basin, which supports the importance of the consequences of climate change on the security policy of Pakistan. Indus River originates in the Tibetan plateau and flows through Jammu and Kashmir that is currently under Indian control. Another significant source of the Indus is the Kabul River which flows into Pakistan through Afghanistan into the Indus bringing approximately a third of the water into the river. Reduced river flows on the western side of the border due to climate change could be one of the causes of tensions between India and Pakistan. Moreover, the Kabul River flow has been reduced because of climate change that creates a security risk.

Slow economic growth in Pakistan; a factor that is further worsened by intense energy crises due to stealing electricity, non-recovery of dues, mismanagement, bribery, and losses made by giant public sector organizations run by ineffective individuals also affect the capability of Pakistan to keep adequate level of military preparedness. The natural disasters and domestic unrests related to climate change always require the employment of military forces in cases of relief and maintenance of law and order at the cost of military contingencies. Natural disasters, in particular, floods, storms, and hurricanes and the rise in sea level have a severe adverse impact on the security of the country as they damage military equipment and vital energy and transportation infrastructure (Mukherjee et al., 2023).

The climate change would exacerbate the conflict over limited resources, which will be hazardous in terms of the national security of Pakistan. Tensions among provinces over resource distribution, disparities among ethnic groups, population displacement, unequal and unorganized urbanization, food insecurity, and poverty are some of the conditions that could cause conflict prone situations which may undo the successes of Pakistan in war on terrorism. Climate change threatens food security as it is one of the limited resources. Though the agriculture in Pakistan is highly susceptible to climatic change, the country has over forty percent labor force and contributes to nineteen percent of GDP. The majority of agricultural practices applied in the country squander a lot of the

fresh water resources and are old and inefficient. Their work is also overworked due to bad priorities in regards to types of crops that are grown (Saad, 2024.)

The mountain rocks are unstable and this leads to large-scale rock falls as a result of increasing temperatures. An avalanche that struck the Pakistani Siachin region in April 2012, in the Gayari sector, killed 135 Pakistan Army soldiers. One of the causes of this great land slip was climate change. During the same year, rock slides also occurred in the other Himalayan Mountain ranges which resulted in material and human loss. This is a huge ecocide to the $350 million mountain climbing sector which constitutes most of the tourism sector in Nepal due to increased temperature. Hence, the Himalayan Mountain range is a location where the little state is losing a lot of economic gain due to the problems of climate changes in the region. Following the Gayari incident, there were voices that were well known among the people to include those of the Chief of Army Staff of the Pakistani Army who were calling of demilitarization of the Siachin region. Consequently, climate change would render military positions and locations unsustainable. In case of the rise of sea level, naval installations will be threatened. Therefore, military security is less secure due to the climatic change. This risk is not typical because it does not belong to the military of an aggressive country.

The climate change as a security issue is discussed more in different national, regional, and international forums. According to scholars, it has implications on the present and future security. It was first mentioned in the IPCC report of 2014. The consequences of the climate change and their security implications are part of a separate chapter of the Fifth Assessment Report of the IPCC. It presents the argument that there are already security challenges that are brought about by the changes in climate which would only be intensified. The statement notes that climate change will challenge governments differently and will have an ever-growing power that affects the conditions of both security and national security policy. It is possible to conclude that the rapid shift to the environmental changes had a significant effect on the migration pattern that endangers the social security. Climate change threatens to bring civil war and other forms of violent conflicts. Climate change inevitably leads to clashes of resources as it will cause scarcity. An event which is deemed a major danger to the lives and property of Pakistani citizens is essentially a problem of national security (SDPI, 2024; Chaudhry & Rashid, 2023).

Causes of Climate Change in Pakistan

Climate change is primarily caused by human activity. A change of temperature is the major factor. Burning fossil fuels such as coal and oil has led to an increase in the quantity of carbon dioxide in the atmosphere. The increase in the green-house effect has led to an increase in global warming. This has been attributed by the fact that our atmosphere contains chemicals like water vapor, carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons which do not allow heat to escape the atmosphere of the earth thus leading to the weakening of the ozone layer and increase in temperature.

The Intergovernmental Panel on Climate Change (IPCC) came up with the conclusion that there was more than 95 percent chance that the warming of our planet over the last 50 years was due to human activity. When modern society relies on the industrial activity, the carbon dioxide concentrations of the atmosphere have grown 280 parts per million to 400 parts per million over

the past 150 years. Another conclusion that the team made was that the human-induced greenhouse gases such as carbon dioxide, methane, and nitrous oxide, were likely the culprits behind a significant part of the observed global temperature increase over the last 50 years, or about half of the 40 years between 1750 and 2010 or so (MoCC, 2022; SDPI, 2024).

Other causes of climate change include deforestation and rise in the use of pesticides in residential and farming situations. The second largest contributor to global warming is deforestation which contributes approximately 24 percent of all greenhouse gas emissions. The amount of carbon dioxide that is emitted by deforestation of tropical rainforests in the atmosphere, according to the estimates made by scientists, is more than the sum of all automobiles and trucks moving around the world (Islam & Wahid, 2023).

The usage of more chemicals in the household and agricultural environments, especially fertilizers, leads to climate change. The intensity of fertilized soil containing a lot of nitrogen can affect the storage of heat by crops (fertilized nitrogen oxides are able to capture 300 times more heat per unit of volume than carbon dioxide), and the runoff of fertilizers leads to the creation of dead zones in our oceans. Over-fertilization of groundwater leads to high levels of nitrate that increase the safety of people besides these impacts.

Climate Change as a Threat Multiplier: Implications for Pakistan

Pakistan is already grappling with several problems, such as overpopulation, political uncertainty, terrorism, bad institutions of the state that are full of corruptness, national discord, a fragmented economy, inefficient social frameworks that create endless social conflicts, and unemployment. The effects of climate change become a self-perpetuating problem where already severe socioeconomic problems are exacerbated. Almost 90 percent of population increase in contemporary times is covered by the developing nations already dependent on indigenous renewable sources such as agriculture, forests, and fresh water sources. One of the fastest growing populations in the world is Pakistan which is growing at a rate of 2.4 percent. It imposes an added burden on the resources. To accommodate the development requirements of a rising population there would be more concerns regarding climate change. Moreover, the very process of climate change retards development.

Long-term effects of climate change are reduction in rain, rising number of drought and floods and the predictability of seasons, such as higher temperature and late onset of the colder season. These shifts affect crop sowing, maturing, and harvesting in a negative way. To be more precise, increased temperatures can result in poorer crop yields and insect and pest proliferation. Climate change affects weather patterns and intensity of weather events. As an example, the agriculture economy of Pakistan relies on the stable water supply. The water is not only healthy when it is there but also when it has the right amount or at the right amount. Excessive rains in the short run are destructive and not beneficial when they cause torrential rainfalls. Similarly, prolonged droughts may be devastating to the farming economy of the country.

Citizens of the entire Pakistan, and mainly those of Sind province who have lost their means of living as a result of water scarcity visit Karachi with the hope of finding a job. They are compelled to reside in low lying slums prone to cyclones, sea storm surges as well as gradually increasing sea levels. Each heat wave or rain has demonstrated the level of incompetence of the infrastructure of the city to face even the existing emergencies. Some of the new threats of climate change that will

jeopardize the security of Pakistan include intense heat waves, increased sea levels, and storms, just to mention a few. Frequency and intensity of sea storms in the Arabian Sea are on the rise because of rising surface temperatures, and it is a grave danger to the human security.

Also depending on the Hub River as the drinking source of water, a megacity of Karachi is now constructing a new water source on the River Indus since it was not adequate to serve the city. With the adverse effects of climate change, there is already a serious challenge to the provincial government in terms of the availability of drinking water which would continue to be worse or maybe turn violent. There are already social divisions, which transpire due to the lack of resources and water pollution. To find a solution to the problem of polluted water of the city inhabitants, Chief Justice of Pakistan invited Chief Minister of Sindh (Khan et al, 2023).

Pakistan has suffered economic growth reversal caused by climate shocks several times. Flooding and droughts destroy infrastructures, supply chains, and fiscal burdens because of the cost of rebuilding. Asian Development Bank (2022) suggests that climate-related catastrophes may affect the GDP of Pakistan to the extent of 9 percent by 2050 unless the mitigation and adaptation strategies are enhanced. The inability of states to respond to other security issues and a weakened ability to increase their legitimacy are caused by economic instability.

Since its economy is largely agrarian and it is highly vulnerable to the effects of climatic change, Pakistan is now more at risk of the vagaries of monsoon rains, severe floods, and prolonged droughts. Pakistan has become a victim of increased disasters caused by climatic conditions. The 2022 floods caused displacement of more than 33 million people, demolition of millions of houses and economic damages estimated to be more than 30 billion dollars (UNDP, 2023). These macro environmental shocks put pressure on governments, destroy local economies and increase the divide between the communities and state. Extreme weather also limits the ability of security institutions to effectively respond because of the overlapping crises. The Pakistani agriculture is also traditional. Experts in the field of water resources have indicated that some countries in the world are able to produce much agricultural even with a low per capita supply of water. They are also more efficient in the usage of water. The historical reliance of the traditional cropping activities in Pakistan on the presence of ample water resources will make any reduction in water supply negative towards the agricultural sector (Malik, 2023).

Another issue of serious concern in the mountainous terrain is landslides and GLOFs all of which are correlated to climate change. These are areas with large populations, i.e. Kyber Pakhtunkhwa and Kashmir. Agriculture and daily consumption of water by the population require local water supply. Precision timed water cycles are capable of replenishing water sources like springs and streams with water. Fluctuations in precipitation activity or increased ranges are serious problems to the population.

Human beings live in harmony with nature. Excessive use of the resources on either end is unhealthy to the relationship and will eventually cost the two parties money. Migration to replace the resources and means of subsistence has been experienced in the Indus Delta region. Climate change is seen as the main cause of soil degradation especially in the Sindh province and this results in a continuous increase of the sea level and reduction in the intake of freshwater. It is a menace to security on two categories. To begin with, it deprives the poor of their livelihood. Second,

others think that this is caused by overconsumption by the upper riparian of the Punjab province (Saad, 2024).

Migrants, internally displaced individuals, and the representatives of religious and ethnic minorities would be especially susceptible because of the typical restrictions on their mobility, especially in the hazardous regions, and barriers to treatment, including those caused by domestic affairs. Climate change can bring about growth in number of child marriage, premature births and domestic violence. The food output will reduce, which in turn will expose women and children to malnourishment and malnutrition.

As has been mentioned, climate change aggravates threats. Hence, the climatic change can aggravate the inter-provincial strife. Due to the demise of fish and their farm produce about 20-25 percent of the population in the district of Thatta Keti Bander and Darwish shifted to other localities. As agricultural production reduces, rural communities are compelled to move to the cities and other nations according to migration pattern studies. Already, having over a third of its population in urban areas, Pakistan is the most urbanized country in South Asia. Cities are outpacing growth in urban areas with no commensurate increase in municipal services and job opportunities (Rauf & Ahmed, 2023).

Migration in itself is not an issue but when accompanied with the scarcity of resources, absence of civil amenities, population stresses and the inability of the state structures to manage the arrival of the people, social tensions are fueled. The protests and agitations against the unavailability of supplies such as gas and electricity and the loss of livelihood because of natural disasters are indicators of an increase in public dissatisfaction. The lack of resources due to climate change can create tensions in the Pakistani society that already has social divisions. Conflicts are most probable when gaps were present between the haves and the have-nots and ethnic and geographical disparities were present, and governing bodies were feeble enough to promote violence and provide equitable redistribution techniques (Rehman, 2023).

The absence of water is a major threat to Pakistan due to conflict between states and within states based on this. In the case of the construction of giant water body dams such as the Kalabagh Dam on the Indus, interprovincial tensions that may degenerate into a war have been witnessed in the last decade. The project is highly contested both in Sind and Khyber-Pakhtunkhwa even though it will offer a lot of economic value through power generation and agriculture. The conflicts between provinces due to the perceived claim of water resources are one of the causes of instability that can lead to a significant conflict threatening the state security.

There should be favourable climate to sustain life. In fact, the balance between living and non-living organisms could be drastically changed in case of the rise in temperature. Climate regulates the life cycles of people and animals, bacteria, viruses, and other disease causing pathogens. A healthy environment involves all living things having an enabling atmosphere. Climate change causes more temperatures to increase, and thus, the amount and nutritional value of crops are reduced, which leads to food insecurity, and directly, it impacts human health.

The implications of climate change on health are in different forms; they can be the water shortage problems and alterations in the habitats of disease-carrying insects that include ticks, flies, and mosquitoes. Water supply is associated with wellbeing in all living organisms. It is not an

exaggeration to say that life is only possible with access to water. Climate change, such as droughts, flash floods, heat waves, cold waves, cyclones, and other related problems, might damage human lives and properties. The right amount of water of the correct quality is the one that is essential to cleanliness and health. Climate change has both direct and indirect impacts on the water quality and quantity. The issue of food security also relates to health-related issues (Raza and Gul, 2024).

In countries such as Pakistan, which are poor, people use over 60 percent of their income on food. The increase in prices would cause malnutrition, poor health and stunting either due to reduced food supply or increased costs of production. This is especially vulnerable to poor populations in remote areas such as the Thar Desert where cases of child deaths are common. Food insecurity has already become a problem in Pakistan; it is especially difficult in the remote desert areas. Malnutrition means that the disadvantaged populations are much weaker to resist health challenges and, consequently, any occurrence of extreme weather conditions, which has been linked to climate, results in loss of human lives (Fatima & Khalid, 2023).

East-west conflict subsumed threats that emanated due to environmental concerns in the cold war. Similarly, Pakistan is a country that is already grappling with a number of political and economic problems; therefore, it cannot afford to overlook the emerging non-traditional security threats posed by the intricate climate change phenomenon. Even the military mighty nation would have been able to have the internal systemic breakdown because of the size of the emerging challenges. Political stability and institutional strength are the manifestations of such resilience that the nation needs to be able to manage threats to the national security. Pakistan is faced with a poor economy, overpopulation, and political instability but this is aggravated by climate change which serves as a multiplier to other problems. The most serious problem is the water security of Pakistan which climate change has exacerbated (Rauf & Ahmed 2023).

Findings

The main clue of the climate change is the rise of temperature which melts the glaciers and ice sheets in the poles and evaporates more which impacts both living and non-living objects. Due to climate change, the world earth is confronting the frightening effect of global warming, however, Pakistan is more vulnerable to security challenges caused by climate change compared to industrialized countries because it is less resilient and coping ability.

Pakistan lies in a semi-arid climate. Climate change will result in higher temperatures which is expected in this region and consequently some parts of the provinces of Sindh and Balochistan will not be habitable anymore. The threats of large-scale climate change that might adversely affect water, agriculture, health, economy, biodiversity, forest, and socio-economic sectors and lead to the emergence of conflicts make it a threat to the national security of Pakistan.

The country of Pakistan is among those countries that are prone to the impacts of climate change because of its diversified geographical composition and variations in climatic conditions. This has raised the risk to national security of the nation since there are no resources, there is no overall knowledge on climate change and inertia of the state institutions (SDPI,2024).

Climate change is a serious non-traditional security issue to Pakistan with ripple effects of significant environmental stability, economic resilience, human security, and national defense.

The Pakistani country is unaware of the causes and effects of climate change and thus, it is hard to prepare to meet the challenges. The task that the Ministry of Climate Change of Pakistan can put the strategies on the table when it comes to the climate change is not in line with the hard task.

However, Pakistan simply does not regard the fight against climate change as a national priority in spite of the sheer difficulty of that problem. Disaster management is the only sphere in which the state apparatus is somewhat ready, when it is compared to the enormous potential, which climate change may bring to cause death and destruction.

The threat is not commensurate to the capacity of Pakistan to adjust and deal with the complex challenges of changing climate.

Climate change is anthropogenic in the aftermath of unsustainable and uneven economic growth. Unsustainable economic growth has a direct impact on climate change because it will lead to increased green-house gas emissions. To a larger degree, the matter is aggravated by the impoverished economy and the fast-growing population of the country.

Climate change is expressed in the increasing temperature that leads to the melting of glaciers faster, GLOF, more intense evaporation, the rise in demand, a decline in crop production, impacts on living and non-living organisms, e.g. plants and animals, the rise in sea surface temperature, heat waves, and alterations in rainfall resulting in torrential floods, soil erosion, droughts, and desertification among other things (Khalid & Fatima, 2023).

Policy Recommendations

The national security threat presented by climate change is so prominent that Pakistan needs to construct an elaborate national action plan. The solution is to inform the people on the adverse effects, adapt, mitigate, and find global means of coping with the issue. It is very important to save the available resources by means of sensible steps such as improved management of water resources. Resource conservation and sustainable use should be a priority in the management of water. In that regard, the upgrading of the outdated infrastructure, as well as the improvement of the cost recovery system, would be rather helpful.

The transformation of the situation in the country should be well-informed following the adverse impacts of climate change. Hence, one should ensure that full policies developed using legislative means are implemented. It must be able to show its readiness to take the challenges directly on a national scale. The responsibilities of different levels of government and state bodies should be well stated and their performance reviewed.

Science, agriculture, and meteorology There are numerous institutions that study and analyze the factors and effects of climate change. They cannot collaborate effectively thus their actions should be aligned to have a synergetic effect. These organizations are supposed to spread their knowledge on a global level as well as domestic spread in a bid to educate people in every level of the society besides sharing information with the media, think tanks, universities, and research institutes.

To reduce the climate change issues, long-term projects in Pakistan need to be initiated to promote reforestation, re-establish irrigation systems and most importantly, enhance water use efficiency. The problem of scarcity of resources can be addressed by proper management and exploitation.

There is also conservation of resources, which lowers the GHG emissions, which cause global warming. To save resources, it is necessary to consume less fossil fuel, eliminate the use of forests as a source of fuel and to utilize fresh water more efficiently.

By modifying this largest category of individuals in the fundamental information of society, social awareness, responsibility and conduct, one can influence the social change over a long period of time. Therefore, there is a need to incorporate the issue of climate change in the curriculum. The teachers in the learning institutions should be trained to be the role models and agents of social change. This aim requires a public sensitization highlighting the seriousness of the threat and viable adaptation and mitigation measures.

Innovation is important in mitigation and adaptation. Pakistan is a place near a high amount of solar radiations that could be harnessed and changed into electricity without necessarily leading to global warming.

Coal-fired power plants are the most damaging producers of emissions. They should therefore not be constructed. The ban of nuclear facility building in their country has already been enacted by China having learnt the bitter lesson. This very polluting technology should not be offered to Pakistan by China in the name of the China-Pakistan Economic Corridor. Pakistan needs to underline the necessity of renewable energy projects, and in this matter, China has a technological edge globally.

China is one of the world leaders in production of cheap solar energy panels and other related equipment. Instead, Chinese knowledge of solar energy should be imported into Pakistan rather than the coal-fired power plants.

Even though, Pakistan has one of the best irrigation systems globally, this will not sustain the impact of the climate change in both the present and the future unless it is well-invested with new regulations to effectively store and distribute the irrigation water. Losses that are caused by seepage of the distribution network and canals should be reduced. By tracking the seepage, one will avoid the degradation of the fertile soils due to the water logging as well as introduction of rising salinity in addition to conserving water.

A shift in the use of water in agriculture, industry, cities, and on animals must be realized. Administrative and systemic wastes are experienced during transporting and distributing water. The water distribution networks that are inefficient and old have to be revised. The transport and distribution of water should also not be tolerated in the case of corruption and incompetence.

International organizations are also capable of making significant contribution towards the realization of the international conventions, treaties and agreements. Pakistan ought to seek financing through Green Climate Fund in order to finance its adaptation and mitigation programmes. Furthermore, Pakistan ought to strive to make independent efforts in developing and implementing climate change fighting projects, and communicate information about these projects with a sense of real pride in the international circles.

CONCLUSION

Climate change effects are not any different than slow poisoning; they would drain the resources available on the earth and make humanity entirely white. Such phenomenon does not only introduce latent problems but also increases the already existing dangers. Climate change has been causing suffering in the global community without much attention being given to it. This is not likely to persist since the challenges are increasing exponentially as opposed to being linear. Politicians, academics, and scientists mostly agree that the times of the imperceptible climate change have passed. An agreement on the coordinated effort in the country would facilitate easier ways of dealing with the challenges caused by issues related to climate change.

The National Climate Change Policy acknowledges the vulnerability of the water resources, agriculture, forests, coastal areas, biodiversity, and delicate ecosystems sectors and tries to help Pakistan to reach the development objectives as identified in the Vision 2030 statement in the Planning Commission. The policy also provides the measures to be implemented in adaptation and mitigation. It also gives recommendations on measures that ought to be undertaken to bolster the state institutions as well as enhancing their readiness in handling disasters. In the case of Pakistan, it is important that household water management should be enhanced. The storage capacity in the country would be increased, resources evenly distributed, water conserved, unsustainable practices ceased, and rainwater gathered.

The adaptations strategies of the country should be modeled in such a way that the resources are not squandered. In 2010 and 2022, the super floods struck the most prolific corner of Pakistan on 4.1 million hectares of agricultural land. It caused damages to infrastructure and established human settlements over a long period of time and loss of crops, property, and animals. The fact that people are deprived of few goods, moves them nearer to the poverty line, where millions of people are already languishing in abject poverty. Frustration, aggressiveness and extremism are the outcomes as the social boundaries are becoming more and more polarized with the increasing number of dissatisfied individuals. On the whole, it impedes the process of development in Pakistan and providing its citizens with a decent life.

The food security of the country would be impacted in case water availability would be reduced due to climate change and population increase. Besides the production of crops that will endure on water, the amount of water required based on the current patterns of their usage should be minimized by conservation and the use of better irrigation methods. Studies could be utilized to develop types of crops that are more adaptive to the changing climatic condition. Adaptable crops can also be grown and yield a large amount of food even in adverse climatic conditions when there is a shortage of water and elevated temperatures. This is because Pakistan has the potential to enhance its adaptive capacity by developing such breeds due to the large research facilities available at its agricultural universities and agricultural research centers.

Climate change threat is very serious, and Pakistan should not overlook the issue. The danger is so immense that it can significantly derail the ongoing attempts to ease poverty and stimulate development to put people back to the level of hunger and poverty. The answer lies in energy efficiency and clean development strategies. The solutions presented are not comprehensive, yet they have a high probability of improving the national security by reducing the susceptibility to

climate change. International cooperation is needed to solve the issue that cannot be solved by a single country, however powerful and strong it might be. Its largest population and socio-political setting are leading to serious water shortage in South Asia because of climate changes.

References:

Ahmad, S. B., & Khan, M. S. (2022). Cyber threat to Pakistan national security: National security and threat perception. *Pakistan Review of Social Sciences (PRSS), 3*(1), 1-12.

Aslam, M., Hussain, S., & Salah-ud-Din, S. (2024). Climate change: A threat to national security of Pakistan. *International Journal of Contemporary Issues in Social Sciences, 3*(3), 1517-26.

Chaudhry, K. T. (2022). Environmental policy analysis of Pakistan: A theoretical perspective. *Journal of Development and Social Sciences, 3*(4), 507-21.

Chaudhry, Q. U. (2017). *Climate change profile of Pakistan.* Asian Development Bank.

Eckstein, D., Künzel, V., & Schäfer, L. (2022). *Global Climate Risk Index 2022*. Germanwatch.

Hassan, T. U., Ali, E., Hussain, H., Haq, A. U., Ali, E., & Ismail, M. (2024). Climate change: Non-traditional security threats for Pakistan. *International Journal of Learner Diversity and Identities, 31*(1), 51-58.

Islam, M., & Wahid, S. (2023). Climate change and environmental degradation: The impact of deforestation and agricultural practices. *Journal of Environmental Studies, 15*(2), 45-60.

Khalid, A., & Fatima, S. (2023). Climate change impacts on glaciers, agriculture, and ecosystems. *Journal of Climate and Environmental Studies, 18*(2), 120-35.

Khalid, F., Taj., M. B., Jamil, A., Kamal, H., Afzal, T., Iqbal, M. J., Khan, T., Ashiq, M., Raheel, A., Sharif, M., & Tirmizi, S. A. (2020). Deforestation dynamics in Pakistan: A critical review. *Life and Environmental Sciences, 57*(3), 27-34.

Khan, I., Akram, A., Fatima, S., Ahmad, B., Rehman, Z., Arshad, N., ... & Ahmad, Z. (2022). Problems of agriculture in Pakistan: An insight into their solution. *Pakistan Journal of Biotechnology, 19*(2), 73- 83.

Kreft, S., Eckstein, D., & Melchior, I. (2021). *Global Climate Risk Index 2021*. Germanwatch.

Ministry of Climate Change Pakistan (MoCC). (2022). *National climate change policy 2012* (Revised 2022). Government of Pakistan

Mukherjee, A., Mishra, V., Sinha, A., & Gupta, R. (2023). Climate change, natural disasters, and national security challenges in South Asia. *Journal of Asian Security and International Affairs*, 10(2), 215–233.

Rasul, G., & Sharma, B. (2018). The nexus approach to water–energy–food security: An option for adaptation to climate change. *Climate Policy, 18*(7), 1-13.

Rauf, A., & Ahmed, S. (2023). Climate change and water security challenges in Pakistan. *Journal of Environmental Policy and Sustainability*, *15*(2), 120-34.

Saad, A. (2024). Climate change, soil degradation, and livelihood insecurity in the Indus Delta. *Journal of Environmental Policy Studies, 12*(1), 55-70.

Shahzad, K., Lu, B., Adil, D., Safi, A., Umar, M. & Afridi, N. K. (2023). Assessment of biomass energy barriers towards sustainable development: Application of Pythagorean fuzzy AHP. *Geological Journal, 58*(4), 1607-22.

Sustainable Development Policy Institute (SDPI). (2024). *Climate change and national security in Pakistan.* Sustainable Development Policy Institute.

World Bank. (2022). *Pakistan floods 2022: Post-disaster needs assessment (PDNA).* World Bank.

Yamin, F., Rahman, A., & Huq, S. (2021). Climate change, displacement, and human security: Implications for vulnerable communities. *Global Environmental Change, 66,* 102-13.

Yamin, F., Rahman, A., & Huq, S. (2021). Climate change, displacement, and human security: Implications for vulnerable communities. Global Environmental Change, 66, 102-13.

Date of Publication	November 15, 2025