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Kashmir Conflict and Environmental Issues: An Appraisal

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Abstract:

The modern world entered the 21st century with multiple issues related to human societies in different parts of the globe, including rapid climate and environmental changes. Intergovernmental Panel on Climate Change (IPCC) issued cautions regarding global greenhouse gas emissions. Long standing political territorial issues like Kashmir are making the situation more complex due to recent climate and environmental changes in the South Asian region. The main objective of this paper is to highlight the political tension between Pakistan and India on Kashmir with the blend of environmental issues in the wake of massive climate changes in the region. The problem of environmental and climate changes in the presence of rigid political policies make the territorial dispute more complex and the consequences may become unexpectedly horrible. In this era, nontraditional security threats such as population data manipulation and inflicting damage to opponent countries through floods and other environmental changes can have dire consequences for the target states. This study is qualitative and analytical for which secondary data have been collected from diverse sources. Thematic analysis method has been used to evaluate the data, generate the patterns and draw conclusions.

Keywords: South Asia, India, Pakistan, climate change, environmental issues, nontraditional Security threats

INTRODUCTION

The world entered the 21st century with multiple issues related to human societies including wars, starvation, displacement, diseases, pandemics and consequent loss of life and property. However, the most highlighted issue among all remains the rapid climate and environmental changes on the planet Earth. In the recent era, global climate and environmental issues have been highlighted on many international forums and now these are not only the topics of natural sciences but also related to Social Sciences. It has become more important to address environmental and climate

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change issues and their impact on socio-political relations among people and states (Thorpe & Jacobson, 2013). Millions of people are suffering from the calamitous effects of life-threatening weather disasters intensified by environmental changes such as prolonged droughts, hazardous storms, scorching heat waves and severe floods in different areas of Asian, African, Caribbean, Pacific and European regions.

The Intergovernmental Panel on Climate Change (IPCC) has issued cautions regarding the global greenhouse gas emissions that must be controlled and should be reduced significantly by 2030 to avoid a complete disaster for the planet. Climate change involves long term changes in overall weather or in some parts of the planet. Massive climate change is primarily caused by increased levels of greenhouse gases, mainly carbon dioxide, in the environment. Climate change has wide-ranging impacts, including rising global temperatures, frequent heat waves, rising sea levels and frequent extreme weather events (United Nations, 2022).

Among many other severely hit areas by climate changes, one is Kashmir which remains a disputed territory between India and Pakistan (and later China) since the Britishers left the South Asian Sub-continent in 1947. Thus, the question arises How the weather and climate change issues are making the unresolved political issues more complex and complicated over time?

LITERATURE REVIEW

Historical Background and an Overview of the Kashmir Conflict

The Britishs created the State of Kashmir including the areas of Kashmir valley, Jammu, Gilgit and Baltistan, Ladakh, and some adjoining areas and sold it to Gulab Singh in 1846 under "Treaty of Amritsar" since Gulab Singh had rendered his support to the British interests in the Punjab and Afghan expedition (Naqushbandi, 2023). Since the partition of the Sub-continent into two dominions in 1947, Kashmir remains a disputed territory, though its major part is occupied by India (Wani & Suwirta, 2013).

When the British left in 1947 after dividing the Sub-continent, the state of Kashmir like other princely states had to decide either Pakistan or India like other princely states. Kashmir was a complex case since it was ruled by a Hindu ruler but with a Muslim majority population, but the Hindu ruler Hari Singh after some months decided to join India. Pakistan had an intention to annex Kashmir owing to its Muslim majority population and its geography. Both India and Pakistan went to war and occupied some parts of it, yet Kashmir is still a major dispute between the two countries. Since both Pakistan and India are long rivals, the Kashmir conflict is a constant threat of nuclear war and other military conflicts in the Sub-continent.

Kashmir lies in the northwestern part of the Indo-Pak Subcontinent. Kashmir is among the most dangerous disputed territories in the world since it lies among the three nuclear powers and the most populated countries: Pakistan, India, and China (The Carter Center, 2002). The north-western portion is administered by Pakistan and includes Azad Jammu and Kashmir, and Gilgit-Baltistan. Significantly large parts of the state including Jammu, mainland Kashmir and Ladakh are administered by India. The division was agreed upon through the Line of Control (LOC) between Pakistan and India in 1972 as per UNO's resolutions, whereas north-eastern Ladakh has been controlled by China since 1962.

After the annexure of a large part of the state of Kashmir in 1948, India enacted Articles 370 and 35A of the Indian Constitution. Through these constitutional clauses of the Indian Constitution, the state of Jammu and Kashmir was granted special status and only the native residents were allowed to establish themselves permanently, own property, and get financial aid for local education and development but foreigners or nonresidents were not allowed. The autonomy of Kashmir was abolished by the Indian Federal government on August 5, 2019, without the consent of the Kashmiris. After abrogating Article 370, the Indian Federal government reorganized the state of Jammu and Kashmir into two zones of the Indian Federal Union (i.e., of India), Kashmir and Ladakh. Afterwards, a series of decisions were taken to convert forest lands of the territory for non-forest purposes, and forest land of around 727 hectares was allowed to be used for 198 projects of other purposes within one month (Parvaiz, 2020). Moreover, around 15,000 acres of the state land, mostly of eco-sensitive nature including wetlands and rivers and over 42,000 acres were allowed for infrastructural development under the new administration in Kashmir (Parvaiz, 2020). The Indian Federal government announced many 'land banks' for attracting investors, from outside Kashmir, aspiring to establish industries and other businesses. These measures of settling other than Kashmiris in the state are violations of UNO's 1948 resolution on Kashmir and the international climate and environmental agenda of protecting the climate-sensitive territories.

Severity of Environmental Issues around the Planet Earth

The human population has increased massively in recent decades which has contributed to the need for deforestation and industrialization. The trica of massive population, unprecedented deforestation for human habitation and agriculture and multifold industrialization have adversely impacted the climate of planet Earth. These changes in the Earth's climate are appearing in the form of rise or fluctuation in the average temperatures in certain regions, the devastation of agriculture owing to the disturbance caused by heat waves or non-normal rainfalls, and melting of ice in glaciers and iced poles and the consequent rise of sea levels (United Nations, 2022). Besides, deforestation has disturbed the habitat of both flora and fauna and has imposed serious threats to the ecological balance and biodiversity required for the sustenance of ecosystems (Mori, Lertzman, & Gustafsson, 2017). Change of land from biologically sustainable ecosystems to human habitat and agriculture also affects the climate of a certain region and the diversity of life residing in it (Parvaiz, 2020). There is a strong relationship between land use change and climate change in a certain geographical region (Shibabaw, George, & Gärdenäs, 2023). Imposed imbalances in land cover dynamics lead to catastrophes both for arrable and forest lands (Hu, et al., 2021).

Human beings are affected by any severe change in weather and climate since their biological survival depends on bearable temperatures and the availability of sufficient water. Owing to impending risks caused by massive climate changes, it is important to address the factors responsible for these changes (Viner, et al., 2020). The weather and climate are severely disturbed owing to human interference with nature's patterns of land in a certain geographical region (Majid & Kanth, 2016). It is the human race which disturbs nature and consequently, itself is disturbed by the disturbance (Mori, Lertzman, & Gustafsson, 2017). Among all the disturbances, the severest one is the fluctuation in the average rainfall which severely affects both humans and agriculture (Lai, 2022). For the sustainable survival of humans and the planet, environmental and climate changes need to be addressed both at biological as well as socio-political levels (Thorpe & Jacobson, 2013).

RESEARCH METHODOLOGY

This research is primarily qualitative in nature and mainly relies on secondary data. A stream of data has been extracted from the writers who have explored the historical background of the political issue of the Kashmir region. This stream of data highlights the emergence of the currently prevailing political conflict among the three nations that fall among the top five largest populated nations besides their geographical importance.

For the other stream of data i.e., on climate and weather changes, the researchers have relied on secondary data taken from some contemporary researchers and international organisations who are addressing climate changes and their contributing factors both at global and regional level. The relationship between average and unusual rainfalls, temperatures and rainfalls, deforestation and climate changes and subsequent changes in crop production have been critically reviewed while focusing on the relationship between the hazards of climate changes owing to the Kashmir conflict in the region.

DATA ANALYSIS AND DISCUSSION

This section mainly addresses the relationship between the Kashmir conflict and the regional climate changes and subsequent effects on Kashmir and Pakistan. Kashmir is important for Pakistan for its geographical location on the upper side of Pakistan and the major rivers flowing into it.

Many rivers flowing down into Pakistan have either their riverheads or their tributaries in the Kashmir region. A headwater is the starting point of a river flow. Such headwater can initiate from snowmelt or rainfall in the mountains, or it can also bubble up from groundwater and can convert into a lake or large pond and convert into a stream or river. Pakistan's economy significantly relies on agriculture which cannot be nurtured without irrigation water; therefore, Kashmir is called the "jugular vein" of Pakistan. In 1960, the 'Indus Water Treaty' was signed between Pakistan and India regarding the rivers flowing from India into Pakistan. However, the issues still exist since the excess of water during summer because of rains and snowmelt often causes floods, whereas, at other times, there is often a shortage of irrigation water in the lower-eastern parts of Pakistan. A smooth supply of irrigation water is an essential requirement for the agriculture sector in downstream areas.

In the last few decades of the 20th century and the first two decades of this century, the subcontinent has seen a massive increase in the horrific contributors to adverse climate change. These contributors include CO_2 emissions, greenhouse gases, agricultural pesticides, and industrial wastes. As a result of all these climate-disturbing contributors, extreme climate changes are expected to hit the region adversely in the coming years. Kashmir has suffered from the consequences of regional and global contributors to climate change. Like other parts of the world, and more specifically of the subcontinent, Kashmir is expected to have unusual variations in low and high temperatures in various months, rainfall and snowfall, and related weather phenomena. The figure-1 taken from Ahmad, Parvaze, Majid and Kanth (2016) illustrates the extreme variations over 30 years between 1985-2015.

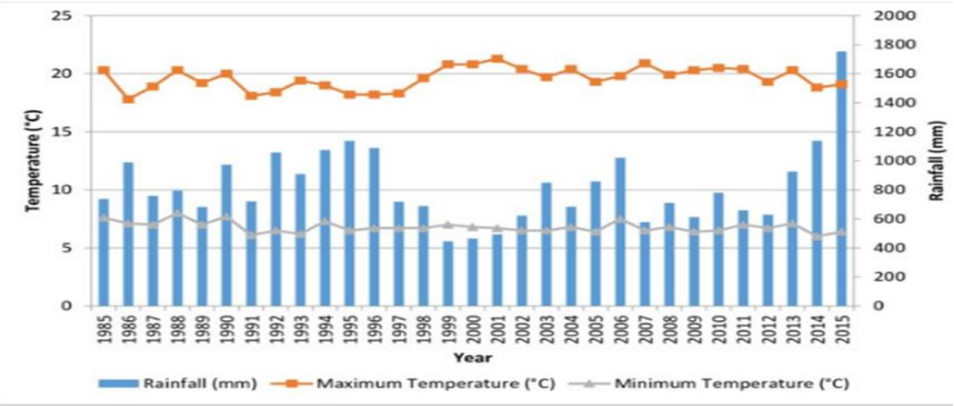

Figure 1: Variations in Temperature and Rainfall between 1985-2015

In Kashmir, there are three separate climate zones including the subtropical Jammu region; the moderate Kashmir valley; and Ladakh, therefore, the mountains that surround Jammu and Kashmir have a significant impact on its climate (Zaz, Romshoo, Krishnamoorthy, & Viswanadhapalli, 2019). Since the Kashmir region lies at the upper altitude/side of Pakistan, climate changes in Kashmir make an impact on Pakistan as well. The figure-2, taken from BBC News ("Pakistan floods," 2022), shows the average rainfall from 1961-2010 in different provinces of Pakistan.

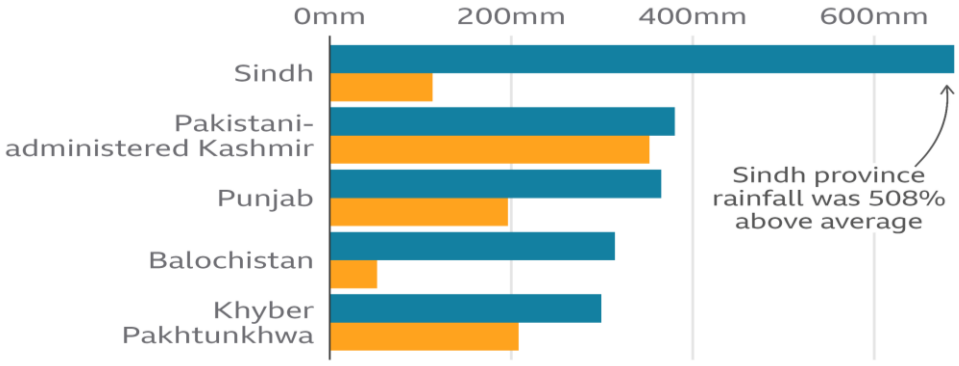

Figure 2: Comparison of Average Rainfall between1961-2010 with that of the Year 2022 (Jul. 1- Aug. 30)

The year 2022 brought more rainfall than the average extracted from 1961-2010 (as is shown in the above figure). The figure-3, copied from Pakistan Meteorological Department (2022) shows the excessive differences in rains of 2022 with that of the average in year 2021.

The excessive rainfall of the year 2022 caused the disaster of the flood water flowing from the Himalayan and its allied ranges. A significantly larger portion of flood waters came from the mountains lying in Kashmir and adjacent areas. The Kashmir conflict contributes to the mismanagement of flood water which plays havoc in the downstream areas lying in fertile and populated areas of Pakistan. The rains-cum-flood disaster inflicted around 84 districts of Pakistan which make up almost one-third of the country's total land including the fertile land of agriculture and human habitat. The total financial loss was estimated at around USD 30 billion (The World Bank, 2022).

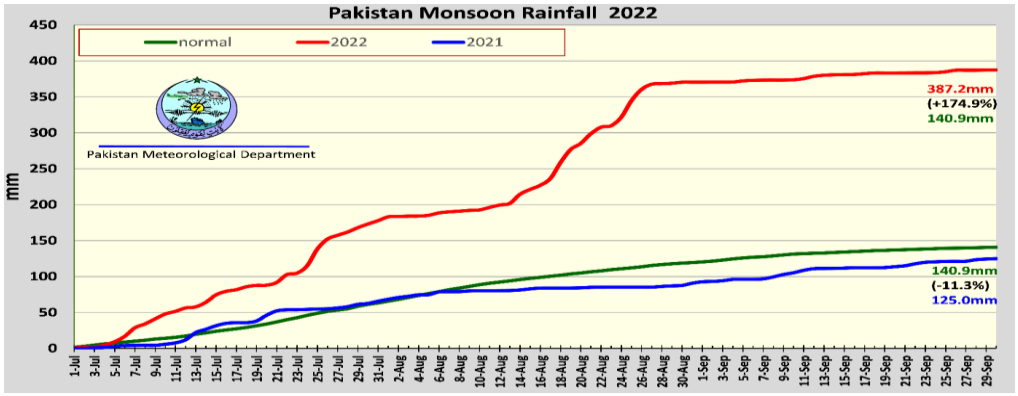

Figure 3: Comparison of 2022 Monsoon with the Year 2021 and the Normal Patterns

Forest lands in the disputed Kashmir are also under constant threat, partially due to political and military turmoil, and the related economic and climate factors. Forests are crucial natural resource that serves as a habitat of ecological biodiversity and contributes to the ecosystem (Mori, Lertzman, & Gustafsson, 2017). Forests also have their role in water quantity and water quality dynamics. Forests play a massive role in the conservation of water, resisting soil erosion and recycling and preserving nutrients in terrestrial ecosystems. In recent decades, deforestation has become a widespread phenomenon occurring at an unprecedented rate which has disturbed ecosystem services of nutrient preservation, rainwater catchments and reservoirs. Habitat loss of fauna and disturbance in biodiversity are also the byproducts of deforestation. As per the United Nations Food and Agriculture Organization (UNFAO), globally 3percent of the total forest area has decreased between 1990 and 2015. Deforestation is also a key driver of changes induced in the biogeochemical cycles at both local and global levels. In the era of rapid climate change, this practice of deforestation for any desired purpose has become a grim environmental concern. Deforestation has had its effects on the production of crops in the previous 10 years, as is shown in the figure-4, taken from CEIC (2023).

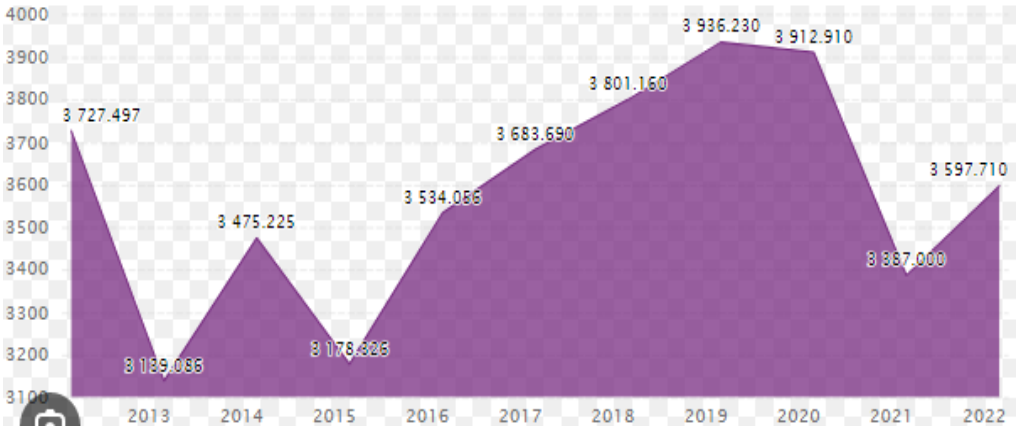

Figure 4: Variations in the Production of Crops over the Years 2012-2022 in Indian Administered Kashmir

In recent decades, deforestation in Southeast Asia has increased significantly and has negatively impacted regional/local rainfall (Lai, 2022). The figure above also shows a significant decrease in crops in Kashmir during the years 2021 and 2022. This may also worsen the changes in annual base flow, sediment load, stream flows and soil erosion. During dry seasons, deforestation coupled with

urbanization may decrease the base flow too. The mere removal of 1 percent of forest cover can increase the suspended sediment load of a stream by 8.7percent annually due to loss of canopy cover. Similarly, loss of soil nutrients by soil erosion, soil fertility and structural stability along with infiltration capacity of soil, all are significantly affected by deforestation at local as well as global levels. These altered physical and chemical properties of soil ultimately result in a net loss of agricultural land productivity and trigger the onset of desertification.

Contemporary research on environmental and climate studies includes changes in land use practices and land cover. 69-76percent of the planet's 'ice-free land surface' is altered by humans (Hu, et al., 2021). Forests are meant to capture and store carbon in their biomass and serve as Carbon Sinks. Removing these forests would not only release the carbon stored in them but also eliminate one of the sources serving as a carbon sink. Deforestation contributes to the global accumulation of anthropogenic greenhouse gases (GHGs) in the lower atmosphere and hence contributes to global climate change. This increase has raised the global average temperature of the lower atmosphere by one degree Celsius since pre-industrial times. Additionally, climate change, evinced by an increase in temperature, has directly influenced the transmission dynamics of vector-borne diseases by manipulating the survival ratio, density of mosquitoes and the incubation time of the pathogen. Land use/cover change (LUCC) is the second largest contributor of GHGs followed by the burning of fossil fuels (Shibabaw, George, & Gärdenäs, 2023). Land Use Change (LUC) occurred massively during the years 2010-20. The types of LUC include agriculture expansion and contraction, afforestation and deforestation, urbanization desertification and mining. Land use changes, particularly deforestation in both temperate and tropical regions significantly worsen the impacts of the emissions of anthropogenic Greenhouse Gases (GHGs) such as methane and CO_2 into the lower atmosphere.

Global impacts of climate change such as hurricanes, droughts, heat waves and forest fires are appearing abruptly, frequently and fiercely. Scientists and politicians are keen to address climate action strategies to combat climate-induced disasters. In the above-mentioned scenario, if India clears forests to settle human population for any political or financial purposes and benefits, it will result in environmental havoc specifically for a developing country like Pakistan which lies downstream of the rivers and their tributaries flowing from the Indian Administrated Kashmir. This situation would also enhance the political conflict in the region since both countries aspire to keep the whole region of Kashmir. Therefore, to eliminate or even reduce the hydrological, environmental and climatic changes specifically in regions that are highly marginalized due to conflict, political instability, and migration, it is recommended to devise and enforce transboundary land-management policies by involving the international community. Modifying the dynamics of LUCC to address current or future negative impacts in biodiversity-rich areas requires the collective 'transboundary-joint efforts' of neighbouring nations in a certain region, in the light of international agreements and accords.

Clearing forests for human settlement is a prominent issue in environmental and population related studies and research. Numerous studies e.g. Mori, Lertzman and Gustafsson (2017), Parvaiz (2020), Hu, et al. (2021), Lai (2022) and Shibabaw, George and Gärdenäs (2023) on tropical rainforests have established a strong correlation between population density and deforestation. Both India and Pakistan are a signatory to many international agreements, conventions, and laws

on the protection of the environment. Being developing countries and densely populated, it is very difficult for them to meet global environmental commitments on the protection of forests. Both India and Pakistan need to work on land use and land management strategies to stop deforestation and prevent the release of terrestrial stored carbon content.

Deforestation in Kashmir can significantly alter the spatial and temporal climatic patterns and trends in the sub-continent. Since a significant number of water heads and rain catchment areas are located in Kashmir, deforestation can bring more streamflow and base flow in the rivers of Pakistan, especially during the monsoon season. Owing to massive deforestation, a change is expected in the average rainfall in Kashmir with the passage of decades in the current century (Kaur & Prabhjyot-Kaur, 2016; Parvaze, Ahmad, Parvaze, & Kanth, 2017). A disturbed pattern of rains and low/high temperatures is expected in Kashmir in the coming years. Apart from environmental disasters, irregularities in the water flows can cause a huge loss to infrastructure and livelihood of the masses. In this climate imbalance affecting a large part of the Indo-Pak Sub-continent, the Kashmir conflict has gained prominence as a monster challenge of climate change.

To highlight the risks factor related to prevailing conflicts and climate change, the disastrous flood of September 2014 in and downstream of rivers of the Indian administered Kashmir can be quoted as an example. The noticeable factor was the ambiguities in the use of administrative power in the state during and after that disaster (Nagano, 2021). The flood caused multiple damages to the residents in the territory, including 1.2 million directly affected people and around 300 missing or dead.

Figure 4: Relationship among Risk, Exposure, Hazard, and Vulnerability

According to the above diagram, taken from Viner, et al. (2020), changes due to climate shifts and socio-economic transformations are interrelated and based on procedural initiatives taken by ruling powers without addressing the threats, exposure, vulnerability, and risks in general and for marginalized communities in particular. Therefore, it is evident how these risk mechanisms are correlated and have substantial effects on the Kashmir conflict in the South Asian region. Indian government never considers the Kashmiris' problems due to 'Hindu-Muslim traditional prejudice' (Singh, 2020). The flood in Kashmir in 2014 was a natural disaster, but the Indian Federal government responded later than required, leaving the residents to take immediate measures of rescue on their own. The flood struck the downstream areas lying in Pakistan as well including

Pakistani administered Kashmir. Even in such a massive disaster, India, Pakistan and the international community could not manage collective rescue efforts owing to the conflict.

Kashmir is a multilayered risk of disputes among the major stakeholders: Pakistan, India, China, and the people living in the territory and the people living in the areas dependent on Kashmir for certain reasons. The major risks include land, water and location of the territory which make Kashmir both crucial and a bone of contention among the stakeholders. The human population both inside Kashmir and the dependent areas, fauna, economy, and climate are the major affectees of the dispute which is apparently an incomplete agenda of the partition of British India into two dominions in 1947. Kashmir is now more than a mere border dispute among Pakistan, India, and China. Indus Basin is one of the largest in the subcontinent and it has significant importance in the agriculture of the region. The areas included in Pakistan, especially in its fertile provinces i.e., Khyber Pakhtunkhwa, Punjab and Sindh mainly rely on water coming from the Indus River and its tributaries. Any disturbance either in the form of excessive water causing floods or less water causing draughts severely affects the agricultural lands of these provinces. Agricultural lands in these provinces especially in Punjab and Sindh are connected with canal-irrigated systems which require a consistent and smooth availability of irrigation water for better production of the crops to meet the food requirements and raw materials for agriculture-related industry in the country.

It is feared that in case of excessive and sudden outbursts of rain, there can be excessive floods in Pakistan because it has not built sufficient dams to store flood water. Whereas, in case of less rain, India is expected to store water in the dams built in its administered area of Kashmir and Indian Punjab. In both cases, Pakistan is expected to be hit severely either by unmanageable floods or the drought. Both floods and droughts would hit Pakistan's agriculture in its three provinces Khyber Pakhtunkhwa, Punjab and Sindh. Ultimately, the food requirements for the increasing population in the country would get severely disturbed and the country's economy would be devastated.

Since food for the dense population and raw materials for agriculture-related industries are two important requirements of both Pakistan and India, any disturbance in the supply of irrigation waters to Pakistani lands can create a severe conflict between the two nuclear weapons-equipped countries that also have large traditional military forces. To live in peace and for the safety of around 2 billion people in the subcontinent, it is very important to ensure peace between the two nuclear powers. Since Kashmir keeps significantly large water sources flowing down to the arable plains, the Kashmir conflict needs to be amicably settled among the stakeholders.

Since Kashmir lies in the upper part of the subcontinent, it is a sensitive area for the defence of both Pakistan and India. Parts of Kashmir also connect Pakistan with China, thus the land becomes strategically significant for the land connection of Pakistan with China, especially in the context of the 'Belt and Road Initiative' (BRI) and 'China-Pak Economic Corridor' (CPEC). The 'Belt and Road Initiative' is viewed as important for the economic uplift of Pakistan. The CPEC and BRI are also important for the trade-focused economy of China which plans to connect to a significant part of the globe through Pakistani sea waters. Owing to Kashmir's strategic importance and being a conflict among the three largest populated countries of the world, the territory is always vulnerable to both military warfare and climate warfare. In both kinds of warfare, the territory and the people living in it are at continuous risk. The people inside Kashmir and the adjacent areas are prone to economic and life insecurity.

CONCLUSION

Kashmir has evolved as an issue of multiple challenges and opportunities both for the world and the regional stakeholders. Kashmir is important for its land, location, water, connectivity, altitude, tourism opportunities and weather along with many other factors. Owing to the military risks, and consequent ill-management of water in rivers flowing in the region are sources of continuous threat to the territory and downstream areas. Moreover, owing to the territory's location on the upper side of the industrially dense subcontinent and the lower side of massively industrially dense China, Kashmir is exposed to massive outbursts of climate change. Climate change and the consequent risks in Kashmir may worsen the conflict between India and Pakistan as per the notion of nontraditional security risks. India can create problems of water/rivers related to climate change hazards and thus can cause jeopardize peace in the region. Environmental issues are affecting global and regional politics and increasing very swiftly and converting traditional threats into nontraditional threats in general and in the South Asian region in particular. Serious efforts are needed to resolve the Kashmir conflict between India and Pakistan to reduce nontraditional security threats e.g., environmental issues along with traditional ones.

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