

COMMON ENVIRONMENTAL CHALLENGES AND OPPORTUNITIES FOR COOPERATION BETWEEN PAKISTAN AND INDIA

Omais Farooq Khan*

Abstract

Pakistan and India have been repeatedly enlisted as the most vulnerable countries to climate change. Both countries face a series of common environmental issues owing to climate change, smog, drought and floods, to name a few. However, since the Uri attack in 2016, India has virtually suspended SAARC by not participating in annual summits. Since then, stern gridlock has been witnessed in bilateral relations between Pakistan and India. In this regard, the first half of the paper highlights common environmental issues faced by Pakistan and India and later suggests areas of cooperation to overcome these challenges. The qualitative analysis shows that common environmental challenges faced by Pakistan and India provide an opportunity to break the ice between two neighbouring yet antagonist countries and rejuvenate the bilateral dialogue process. The paper aims to highlight the importance of cooperation over common environmental challenges, which has the potential to end the deadlock between Pakistan and India and spillover cooperation in other areas of common interest.

Keywords: Climate Change, Common Environmental Challenges, Gridlock, Bilateral Relations, Cooperation.

Introduction

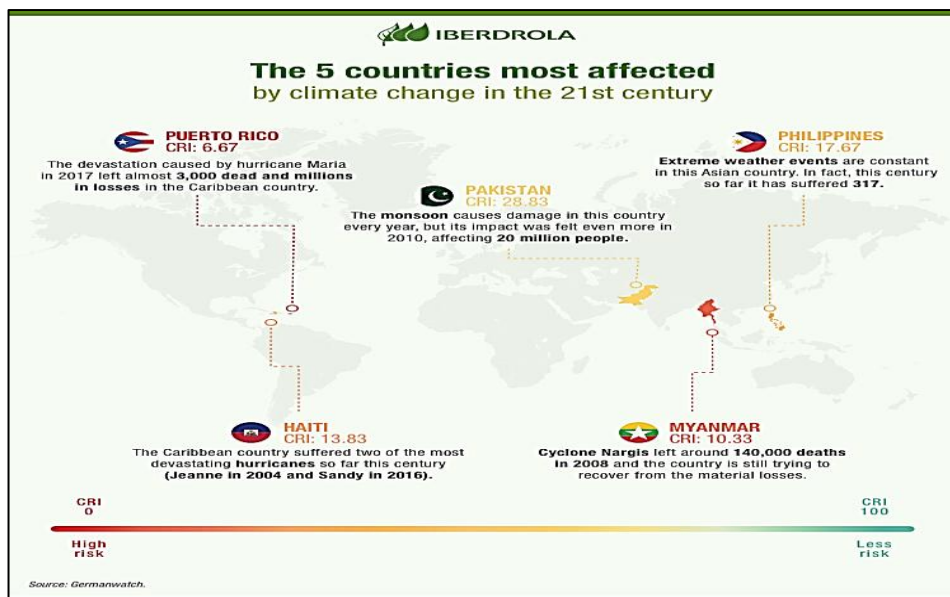
The Conference of Parties-26 (COP26), under the guise of the United Nations Framework Convention on Climate Change (UNFCCC), testifies that the global average temperature is on track to reach 2.7 degrees Celsius,¹ which is critically higher than the agreed 1.5 degrees Celsius during COP 21 (Paris Agreement 2015). Moreover, the United Nations has reiterated that the most significant threat faced by the human race in modern history is 'climate change.'² Environmental challenges and climate change do not respect borders and impact countries' socio-political and economic progress, regardless of ethnicity, nationality, or even the developed countries have made. Most recently, the renowned biologist and naturalist David Attenborough told the UN Security Council that the human race is facing the biggest threat to its security and survival: climate change. This claim has raised concerns regarding the already fragile environment of South Asia. Numerous reports and findings have ranked South Asia as the biggest victim of natural calamities due to environmental challenges and human-induced

*Mr. Omais Farooq Khan is a graduate in International Relations from University of Pannonia, Department of Modern Philology and Social Sciences, Veszprem Hungary. He contributes to national and international magazines and journals. His areas of research are securitization, politics of climate change, environmental peace building and India-Pakistan relations. The authors' email address is omaisfarooqkhanrf@gmail.com.

climate change. Most South Asian or SAARC (South Asian Association for Regional Cooperation) members are middle-income countries. They lack the resources and political will to mitigate or adapt to recurring environmental challenges.

The year 2019 has proved to be the most volatile and precarious year for Pakistan and India, as the relationship faced a series of grave escalations after the Pulwama episode. However, in all these economic, cultural, religious and territorial differences, India and Pakistan also shared a common threat that has affected millions across the border and given setbacks to their economic growth. That common threat is climate change. According to the Global Climate Risk Index (2021),³ Pakistan and India continuously ranked among the countries most affected by environmental challenges and climate change from 2000 to 2018.

Figure 1: Five Countries Most Affected By Climate Change



(Source: www.iberdrola.com⁴)

In 2021, Pakistan and India stood 8th and 14th on the Climate Risk Index, respectively. Over 500,000 people have died on both sides of the border owing to recurring environmental challenges and human-induced climate change. Moreover, in 2020, ninety-nine cities out of two hundred were ranked as the most polluted cities in India and Pakistan. Air pollution is now killing more people in India and Pakistan than terrorism. Similarly, neighbouring yet antagonist countries face frequent heatwaves and droughts during the annual summer season. India and Pakistan also lie at the foot of Himalayan Mountain ranges which, according to numerous observations, are the most susceptible to climate change compared to other mountain ranges worldwide. Hence, heavy rainfalls and floods have become common during the annual monsoon season. One

of the main contributors to heavy rains and floods is Glacial Lake Outburst Floods (GLOF), which are common in Indus Water Basin during summer.

Common Environmental Challenges Faced by India and Pakistan

The Paris agreement, COP 26, and the sixth annual assessment report by the International Panel on Climate Change (IPCC), environmental challenges and climate change are becoming more frequent and devastating.⁵ Not only developing or least developed countries but also developed countries are equally affected by the impact of unprecedented environmental challenges. The extreme dry seasons, monsoon rainfall and glacial retreat are some of the common environmental challenges the world is facing. More disturbing is that these challenges and climatic changes are more pronounced, consistent and intense in South Asia. Maldives, according to the German watch, India and Pakistan ranked among the top twenty most affected countries in the 21st century, owing to recurring environmental challenges and climate change.⁶ India and Pakistan are facing numerous environmental challenges and climate-induced changes such as depletion of water resources, climate-induced migration, draining Indus water basin, malnutrition, retreating ice glaciers in the Himalayan range, weaponization of water, droughts and heavy rains, constant heatwave and air pollution. Some of the common environmental challenges and climate-induced changes faced by India and Pakistan are as under:

a) Indus River Basin

Indus River Basin (IRB) is a transboundary basin with its origin in the Himalayan Mountain range and originates from Tibet Plateau. IRB has a total area of 1.12 million Km and is distributed among South Asian countries such as Pakistan (47%), India (39%), China (8%) and Afghanistan (6%).⁷ The share of IRB distributed between India and Pakistan explicitly depicts the role of IRB in the lives of billions of people living along the Basin. India and Pakistan are renowned for their agriculture sector, and millions of people and their livelihood depends on Indus Water Basin and its tributaries. According to the Economic Survey of India, agriculture in India contributes around 18% to the total GDP. It is a source of livelihood for over 70% of the population, mainly in rural areas.⁸ But the contribution and livelihood opportunities are shrinking with each passing year. Pakistan also faces similar trends in the context of agriculture and its role in absorbing the largest workforce in the country. According to the economic survey of Pakistan, the contribution of agriculture to GDP is following a decline as it only aided 19.3% of the total GDP in 2020.⁹ There can be other reasons, but scientists have revealed that climate change is one of the primary reasons behind the changing nature of the Indus Basin.¹⁰

b) Melting of Snow and Glaciers

The first and most obvious impact of changing climate is melting snow and retreating glaciers in the Karakorum and Himalayan ranges. These mountain ranges hold the world's largest glaciers outside the North Pole. Being susceptible to the changing climate, these glaciers also pose the biggest threat to livelihood in India and Pakistan. The global average temperature is increasing, but according to the IPCC report, South Asia is

facing a substantial annual increase in the average temperature. There have been changes in monsoon patterns, but the impact has been exacerbated due to GLOF.

c) Floods

Seasonal monsoon rains and floods are the most common environmental challenges India and Pakistan face. The super floods of 2010 took the lives of nearly 1600 people, displaced millions, and caused damages worth \$10 billion.¹¹ Since 2010, Pakistan has been facing floods in every monsoon season. However, the recent torrential monsoon of 2022 in Pakistan has wreaked havoc across the country. One-third of the country has submerged under water as 81 districts have been declared 'calamity-hit' and 40 districts as 'flood-affected.' Horrific floods took the lives of over 1700 people, displaced nearly 7.9 million, and every third of Pakistani is living in the open sky.¹² Pakistan is currently facing a second round of 'death and destruction' as flood-affected areas face a shortage of necessities such as food, shelter, drinkable water and proper sanitation services. Similarly, in 2019 abnormal monsoon rains in India took the lives of over 2,100 people and affected 2.5 million people in 22 provinces.¹³ In 2022, during the same monsoon spell which devastated Pakistan, India also faced torrential water pouring in Assam, Gujrat, Karnataka, Uttar Pradesh and Madhya Pradesh, which took 1,800 lives and displaced nearly 1.3 million people, as stated by the National Emergency Response Centre.¹⁴

Pakistan and India are still facing and expected to meet the aftermath of floods during the monsoon seasons for a couple of years, as millions of people are now at risk of acute malnutrition and exposed to waterborne infectious diseases like malaria, dengue, typhoid and most commonly diarrhoea. Moreover, floods are the most common impact of climate change faced by India and Pakistan, and there is no sign of mitigation and adaptation to such floods. Therefore, if India and Pakistan keep behaving like 'business as usual,' neighbouring countries can face severe impacts of floods in the future.

d) Heat Waves and Droughts

Yet another environmental challenge India and Pakistan often face is heatwaves and droughts. Heatwaves and droughts have been consistent and severe across the globe. Even Europe is not protected from the wrath of increasing global temperature; every year is warmer than the previous one. Heatwaves and droughts are leaving long-term impacts on developed countries with the resources and technology to mitigate them. South Asian countries, particularly India and Pakistan, which are more inclined to heatwaves and droughts, are the least equipped to cope. With each passing year, changing climates exacerbate the impacts of these heatwaves and droughts in India and Pakistan. According to Carbon Brief, since 2011, extreme weather events have been more certainly the cause of anthropogenic activities or human-induced climate changes.¹⁵ It further says heatwaves contribute 43% of extreme events, including drought (17%) and floods (16%). Heat waves have become a norm in India and Pakistan for the last couple of years. In 2015 alone, over 2000 people lost their lives to heatwaves in the financial hub of Pakistan, Karachi, and its surrounding districts, as the temperature reached 45 degree Celsius.¹⁶ During the same summer, the heatwave took the lives of 2,300 people in India.¹⁷

Frequent delays in monsoon rains and excruciating heat waves lead to drought-like situations in India and Pakistan. Pakistan Council of Research in Water Resources (PCRWR) has cited that Pakistan has already crossed the water scarcity line back in 2005 and will run out of water by 2025.¹⁸ In the last couple of years, the drought has reached a critical level in parts of Balochistan and Sindh, which led to thousands of deaths and millions of Internally Displaced Persons (IDPs). According to the report issued by the Ministry of Climate Change Pakistan, the leading causes are atmospheric conditions, geopolitical heights, and low-pressure systems, which are more natural than anthropogenic.¹⁹ But the report further says that human-induced climate change has exacerbated the severity and frequency of such events.²⁰ Since the 2010 floods, heatwaves, floods, and droughts have been witnessed on seasonal bases. Similar research had been done in India to testify whether such extreme events are natural, anthropogenic, or perpetrated by the arch-rival Pakistan, as mentioned by a couple of Indian politicians. The research group from the Indian Institute of Technology (IIT) examined observation and simulated temperature, including humidity impacts.²¹ The observations showed that human-induced climate changes caused such extreme events.

e) Worsening Air Quality

Worsening air quality is one of the most recurrent human-induced phenomena India and Pakistan face. For almost five consecutive years, cities in India and Pakistan remained among the world's top ten most polluted cities. However, by November 2021, 48 cities from India and Pakistan made it to the list of the world's top hundred most polluted cities.²² In India, the worsening air quality is choking people across the country at a critical rate, as more and more people are dying each year. The Lancet's research shows 1.67 million lost their lives in 2019.²³ In addition, people face most health issues: strokes, respiratory complications, lung disorders, asthma and cardiovascular diseases. Although only six cities of Pakistan were on the list, according to the same research journal, annually 135,000 people died in Pakistan owing to the air quality.²⁴

Consequences

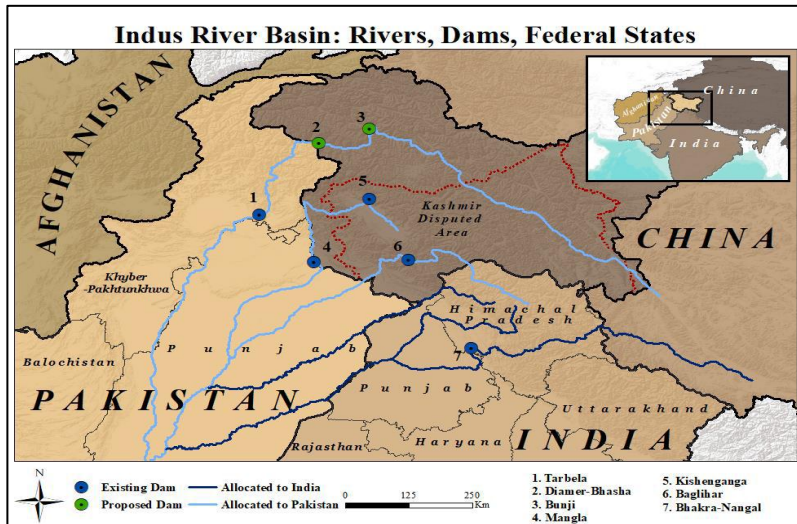
Before applying environmental peacebuilding to create a platform for breaking the ice and opening avenues for cooperation, it is much needed to highlight the consequences of abovementioned environmental challenges and their impact on India and Pakistan.

a) Weaponizing the Water

The increasing variability of IRB is a notable indicator of strained relations among South Asian states, particularly between India and Pakistan. Moreover, the existing mechanism and institutions are not well-equipped to cope with such unpredictability. There is a strong belief among the power elites in New Delhi that India cannot use the IRB's full potential and consider IWT as a primary hurdle. India has been constructing mega dams in Indian Illegal Occupied Kashmir (IIOJK) in violation of the IWT. In the past, the Permanent Indus Commission (PIC) objected to the development of Dulhasti and Salal dams on IRB and its tributaries. Moreover, India continued to work on

Kishanganga and Baglihar hydroelectric projects on Chenab and Jhelum River's tributaries in violation of the IWT.²⁵

Figure 2: Indus River Basin



(Source: Council on strategic risks.org²⁶)

India has long been using different tactics to escape from the IWT and exploit the water resources originating in IIOJK. The abrogation of the special status of Kashmir and adjacent territories manifest India's heinous interests in the water resources of Kashmir, which then transcends to Pakistan. With the increasing electricity demand, particularly in the summer season, India is looking for water resources in IIOJK to sustain its bustling economy as it has overcome the first hurdle, i.e., altering the special status of IIOJK.

b) Food Insecurity and Malnourishment

Once famous for rice paddies and fisheries, India and Pakistan are facing societal trauma, and farmers are helpless against above mentioned environmental changes. During the last decade, renewed environmental challenges and climate change have hampered India and Pakistan's agriculture growth. According to a World Bank report, the agriculture sector in Pakistan used to accommodate 43.6% workforce of the country. It contributed 21% to the total national GDP before the floods of 2010,²⁷ which has dropped to less than 38% and 18%, respectively.²⁸ Since 2021, Pakistan's agriculture sector is constantly facing a downward trend.

Moreover, a similar trend has been witnessed in next-door neighbour India. Still, the effects are more grave and agonizing as over 50% of the population is associated with the agriculture sector and contributes 15.4% to the total GDP. Research says that due to the higher population density and greater susceptibility to extreme events, India's crop production is expected to decrease by 30% by the mid-century.²⁹ Furthermore, the lack of governance has only exacerbated the crisis. In India, the situation has reached a critical point as farmers have committed suicide and staged a protest last year in Delhi against the

government's agriculture policies. It is detrimental to millions living along the Indus River as agriculture is a primary source of their livelihood.

In a post-COVID world, India is the most vulnerable country where poverty is witnessing an upward trajectory and added 85 million people into poverty.³⁰ Food shortages, food insecurity, and failed crop season due to environmental stresses, particularly water resources, will continue contributing to poverty and malnourishment in India and Pakistan. In most cases, women and children are the victims.

c) Climate-induced Displacement and Migration

Regarding the consequences of climate change in India, the situation has gone from bad to worst in just a few years. Currently, 600 million people are at risk due to climate change, and extreme events are already pushing millions to migrate. According to the database, extreme events displaced 70 million people in India from 2013 to 2018.³¹ The devastation of climate change and climate-induced displacement has already been witnessed in Afghanistan during the War on Terror. Afghanistan saw over 13 million displaced people in the northwestern part of the country due to prolonged droughts in 2018.³²

d) Threat to the Indus Water Treaty

The IWT was brokered by the World Bank, which penned the obligations and rights regarding the use of the Indus Water Basin water flowing through India and Pakistan. The treaty gave all the rights to use the water of Eastern Rivers (Ravi, Sutlej and Bias) to India and Pakistan to use the water of Western Rivers (Indus, Jhelum and Chenab).

IWT has survived the bitterest rivalry between India and Pakistan for over five decades. However, droughts and delayed monsoons are hitting parts of India and Pakistan, and water resources in the Indus River basin tributaries are shrinking due to changing climate. For the last couple of years, IWT has been pushing to its limits and presents an example of a 'time bomb,' which can explode anytime.³³ The critical analysis of the treaty shows that IWT is not equipped to cope with contemporary environmental challenges and climatic changes.³⁴ Pakistan's freshwater resources have been draining during the last few years due to unexpected rains and delayed monsoon seasons. Similarly, India's energy demands are increasing yearly to sustain its economic growth. In this regard, India has started to invest heavily in constructing dams and reservoirs on the western tributaries of the Indus Water Basin. Being upper riparian, Pakistan believes that there are chances that India will control water flow and store Pakistan's share of water. The increasing demand for water across the border and maximization of advantage from tributaries of the Indus River can jeopardize the success of IWT and eventually abandon the Treaty.

e) Economic Consequences

India is a growing economy of over a trillion dollars, and Pakistan's economy is making a snail pace progress; traditionally, agriculture has been the backbone of the economy owing to its contribution to the GDP. However, as mentioned above, this more

significant share of the agriculture sector to the country's GDP has been hampered due to repeated environmental challenges and climate change in India and Pakistan. According to the Stanford study results, climate change made India's economy 31% smaller than it could have been otherwise. In such extreme climate scenarios, the share of agriculture in overall employment has dropped and has cost India around 2.5% of its GDP every passing year since 2015. Moreover, nearly 60% of the population is involved in agriculture, and over 80% of exports are associated with this sector.³⁵ Besides, agriculture's share of national growth is already declining with each passing year, and any interruption in energy supplies can prove detrimental to the economy of India and Pakistan. Furthermore, India has lost \$36.8 billion, 1.36% of the total GDP, because of the fatalities due to air pollution.³⁶ Similarly, Pakistan has lost \$3.8 billion and lost 9,989 lives owing to extreme events between 1999 and 2018.³⁷

Environmental Cooperation

The debate about whether climate change is natural and whether it's a myth or a reality has long ended. The fifth and Sixth Annual Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC) are the testimony to it. Environmental challenges and climate change can be felt globally, but the impacts are apparent in South Asia, as it is the biggest victim of natural calamities.³⁸ The effects of climate change will be profound and become more severe because of the increasing birth rate in the region. Moreover, the whole region, including India and Pakistan, is miserably unprepared to reduce or even mitigate the impact of environmental challenges.³⁹ The changing nature of glaciers and delay in monsoon rainfalls further exacerbate the effects of climate change. By mid-century, South Asia will be the home to enormous numbers of food-insecure people.⁴⁰

In a most recent development, Pakistan adopted its first-ever National Security Policy (NSP) during the 36th National Security Committee meeting and categorically made human security the main agenda of the NSP.⁴¹ The formal and comprehensive version of NSP is yet to be released, likely generating healthy debate among policymakers and academia. Similarly, last year (2021), the European Commission approved a standard environmental policy (the European Green Deal) to achieve the European Union's (EU) National Determined Contributions (NDCs). It demanded productive and practical contributions from the members.⁴² There are two takeaways from the collective effort of the EU. First, the emerging environmental challenges cannot be countered alone, as climate change does not respect boundaries. Secondly, the EU's response to counter or at least mitigate the impact of climate change also shows that contemporary environmental challenges are affecting rich and developed countries with the same intensity. In this age of environmental challenges and constantly changing climate, it has become impossible to ignore non-traditional security threats, as it directly impacts individuals of the states and has the potential to endanger over a billion of India and Pakistan combined.

In this regard, climate change is a blessing in disguise and an opportunity for India and Pakistan to unlock the gridlock and cooperate on shared environmental issues. The most interesting thing is that India and Pakistan are facing more common

environmental challenges than individual challenges, which can force both states to cooperate. Most recently, during a lecture series organized by the Institute of Regional Studies (IRS-Islamabad-based think tank), Ambassador Kaka Khel mentioned that one of the reasons behind the common environmental challenges of India and Pakistan is the hasty partition of United India in 1947. Hence, the people on both sides of the border share shared consequences of the chaining climate and impacting the lives of over 1.5 billion people. More can be achieved through cooperation than individual efforts of the state. Unlike traditional issues of security, terrorism and other societal and economic crisis, recurring environmental challenges cannot be dealt with through the conventional unilateral approach. India and Pakistan should also realize that the pace of distribution of the Global Climate Fund under the Paris Agreement is lethargic, and they have to find an avenue to gather funds and financial support to fight or at least mitigate the impact of contemporary environmental challenges. Though antagonism has reached its height since the Uri Attack in 2016, there has been positive development since the breakout of the coronavirus in 2021 (March). After the Pulwama episode in February 2019, Pakistan attended the conference convened by Indian Prime Minister Narendra Modi. Likewise, Pakistan has also, time and again, invited India for bilateral dialogue on all outstanding issues, including Kashmir. Recently Prime Minister of Pakistan Shahbaz Sharif, during the 6th Summit of the Conference on Interaction and Confidence Building Measures in Kazakhstan, reiterated to engage with India for regional peace and stability. It is high time that India and Pakistan should consider climate change as a national security issue and address it through bilateral cooperation. Such cooperation will not only help mitigate the impacts of climate change but also strengthen efforts to achieve Sustainable Development Goals, especially the thirteenth goal, i.e., environment, and bears the potential of reviving the regional organization, i.e., SAARC. In this regard, it is vital to highlight the areas in which India and Pakistan can cooperate.

Opportunities for Cooperation

The climate-induced environmental challenges are affecting millions living across borders and draining government resources, financially and administratively. Moreover, India and Pakistan's border shares are so porous and smooth that any happening along the border has equal impact and consequences for either side.

a) Indus Water Treaty and Water Resource Governance

Integrated government and policies are the need of the time, which can release the pressure of changing climate and environmental changes. Instead of abandoning the IWT, India and Pakistan should use the platform of PIC and strengthen the treaty by revising the principles of the treaty to fight against the common environmental challenges faced by India and Pakistan along the shared Indus Water Basin. Moreover, Pakistan and India not only face inter-state water resource management issue but also faces water management issue at the provincial level as well. Most of the Indus Water Basin is shared by Pakistan's Punjab and India's Rajasthan. A transboundary commission between these two provinces can better highlight climate-induced changes along the IWB. Pakistan and

India must address their internal inter-provincial conflict of interest as soon as possible, or the transboundary water management will remain in limbo.

b) Transboundary Smog

Like heat waves, smog has become a norm during dry winters. India and Pakistan have a tradition of burning leftover hays and stubble after the cutting seasons to prepare the land for the next crop. This traditional burning is called Parali season in the local language. During the Parali season, which starts in October, Northern India and Eastern Pakistan get covered with black smoke, which becomes unhealthy and hazardous as winter reaches its peak.⁴³ Realizing the impact of smog, India has a national program called India's National Clean Air Program (NCAP), established in 2019. In addition, India dissolved its Environmental Pollution-Prevention and Control Authority (EPCA). It created a Commission on Air Quality Management under the jurisdiction of the Punjab, Haryana, Rajasthan, and Uttar Pradesh provinces.

On the contrary, Pakistan has no national or provincial mechanism to monitor smog. India should share the expertise and tools Pakistan utilizes under the commission. Without Pakistan's cooperation, India cannot counter smog's impact and consequences. Accordingly to the IQ Air Quality Index in December, India's capital Delhi and Pakistan's cultural capital Lahore remained among the top three most polluted cities for a couple of weeks. As a transboundary and common environmental issue, bilateral cooperation is needed to monitor better and reduce smog's impact.

c) Loss and Damage and Fight for Climate Justice

India and Pakistan are the most vulnerable countries to climate change and global warming; it is highly likely that in the vulnerable region, i.e., South Asia, even the slightest change in climate can bring dreadful consequences. According to Global Climate Index (2021), Pakistan has lost \$4 billion to climate-related disasters, most commonly floods and droughts.⁴⁴ At the 77th session of the United Nations, Prime Minister of Pakistan, Shahbaz Sharif, reiterated that Pakistan portrays the most devastating impact of global warming, to which Pakistan's contribution is less than 1%.⁴⁵ Moreover, he also called on developed nations for climate funds to compensate for the losses and damages incurred on Pakistan owing to climate change. During the annual session, PM Shahbaz Sharif held bilateral meetings with the head of the states of France, Iran, Japan, and Belgium, among others, to highlight the colossal damage caused by the 2022 floods and mobilize resources and finances to compensate for losses and damages. Pakistan presented a strong case of 'loss and damage' at the UN, and in response, the UN General Assembly passed a resolution calling for securing climate funds to fight climate change. During the Conference of Parties-27, the UN Secretary-General reiterated that serious actions are needed to address loss and damage. In this regard, financial support is imperative for adaptation and strengthening the resilience of countries like Pakistan and India.⁴⁶

Though India is among the leading contributor of carbon emissions, per capita, the emission of India is far less than countries like Australia, Canada, or Qatar.

Nevertheless, India and Pakistan are equally vulnerable to climate change, and neighbouring countries need financial assistance to fight against climate change. Through the platform of SAARC, India and Pakistan, along with Bangladesh, can force the developed world to assist developing countries under the umbrella of 'climate justice' to compensate for the losses and damages sustained during the warming of the earth's temperature.

d) COVID-19 and Scourge of Locusts

Though COVID-19 and Locusts are not the outcomes of environmental challenges, it certainly gets exacerbated due to climate change. Moreover, the coronavirus pandemic has halted global activities, and states closed themselves to stop the spread of the virus, which had suspended already insignificant bilateral trade between India and Pakistan. Pakistan and India have also faced the worst attack of desert locusts in the provinces such as Punjab and Sindh and Indian provinces such as Rajasthan and Punjab.⁴⁷

e) Bilateral Trade

Once India and Pakistan realize the importance of addressing the common transboundary environmental challenges such as water management, smog, and cooperation over COVID-19 and locust, the bilateral cooperation will have a great opportunity to spillover to other avenues of cooperation in other areas, most importantly bilateral trade. India and Pakistan should learn from the trade interdependence between India and China, as witnessed during the recent border clash between India and China. According to the World Bank report, India-Pakistan trade has the potential to generate \$37bn from bilateral trade, which is currently barely touching the \$2bn mark.⁴⁸ Such policies will eventually improve the people's livelihood and help achieve Sustainable Development Goals in Asia.

Conclusion

Nuclear powers India and Pakistan share the world's most fraught rivalry in the modern era. Any miscalculation can jeopardize the peace, stability and even survival of the South Asian region. Kashmir issue and cross-border terrorism have contracted the confidence-building measures since 2002 and halted multiple tracks of diplomacy. The continuous blame game over heatwaves and smog and the accumulation of water resources by constructing dams and reservoirs can prove one such natural resource that holds the potential for confrontation. India and Pakistan are renowned for their rivalry and fought four wars. Yet IWT has sustained these wars, which proves that India and Pakistan have great potential for cooperation over other common environmental challenges, such as transboundary water management, the fight against locust and transboundary smog, droughts and heatwaves. These common environmental challenges and climatic changes can provide a platform for India and Pakistan to dilute the deadlock and make environmental challenges an agenda of bilateral relations. There had been challenges in the past when even talking about bilateral issues. Still, Modi's recent willingness to communicate with SAARC countries and Pakistan's offer to fight against the locust provide hope for future bilateral relations between India and Pakistan. Any

bilateral cooperation over environmental issues can also prove a harbinger of long-lasting peace. Moreover, there is a realization among the power elites in India and Pakistan that the cost of non-cooperation is colossal, particularly concerning common transboundary environmental stresses. Besides being the most populous countries in the world, poverty and malnutrition owing to climatic changes will leave the arch-rivals with no option but to cooperate.

Endnotes

- ¹ UNEP. "Updated Climate Commitments ahead of COP26 Summit fall far short, but Net-Zero pledges provide hope." <https://www.unep.org/news-and-stories/press-release/updated-climate-commitments-ahead-cop26-summit-fall-far-short-net>
- ² United Nations. "Climate Change 'Biggest Threat Modern Human have ever Faced', World-Renowned Naturalist Tells Security Council, Call for Greater Global Cooperation." February 23, 2021. <https://press.un.org/en/2021/sc14445.doc.htm>
- ³ "Global Climate Risk Index 2021". *Germanwatch*, (2021) pp, 11-14.
- ⁴ Iberdrola (2021). "Top ten most affected countries by climate change." <https://www.iberdrola.com/sustainability/top-countries-most-affected-by-climate-change>
- ⁵ IPCC-Intergovernmental Panel on Climate Change (2020). "Impacts of 1.5 degree Celsius Global Warming on Natural and Human Systems." <https://www.ipcc.ch/sr15/chapter/chapter-3/>
- ⁶ Michael Kugelman, "South Asia is on the Front Lines of the Climate Crisis." *Foreign Policy*, August 12, 2021. <https://foreignpolicy.com/2021/08/12/south-asia-climate-ipcc-report-front-lines/>
- ⁷ FAO. "Transboundary River Basins- Indus River Basin." *Food and Agriculture Organization of the United Nations (FAO)*, 2011, pp. 04.
- ⁸ "Economic Survey of India (2019-2020)." *Ministry of Finance, Government of India*, pp. 193-196. https://www.indiabudget.gov.in/budget202021/economicsurvey/doc/vol2chapter/echapo7_vol2.pdf
- ⁹ "Economic Survey of Pakistan (2019-20)" *Government of Pakistan, Finance Division*, pp. 17.
- ¹⁰ Shidore, Sarang. "Climate Change and the India-Pakistan Rivalry." *Council on strategic Risk*, (2020), pp. 05.
- ¹¹ Thomas D.Kirsch, Wadhwani, Christina., Sauer, Lauren., Doocy, Shanoon., & Catlett, Christina. "Impact of the 2010 Pakistan Floods on Rural and Urban Populations at Six Months." *US National Library of Medicine National Institute of Health*, 2010, pp, 03.
- ¹² UN News. "Pakistan: To avert 'second wave of death', UN raises funding appeal to \$816 million." October 04, 2022. <https://news.un.org/en/story/2022/10/1129177>
- ¹³ *India Today*. "Over 2.100 Dead in Monsoon Rains, Floods across India." October 09, 2019. <https://www.indiatoday.in/india/story/over-2-100-dead-in-monsoon-rains-floods-across-india-1607709-2019-10-09>
- ¹⁴ Reliefweb (2022). "India: Floods and landslides – May 2022". <https://reliefweb.int/disaster/fl-2022-000213-ind>
- ¹⁵ Rimmel Mohyidin, "Climate Change does not Need Visas to Cross Borders." *DAWN-PRISM*, September 16, 2019. <https://www.dawn.com/news/1487525/climate-change-does-not-need-visas-to-cross-borders>
- ¹⁶ Kmaran Haider, & Khurram Anis. "Heat Wave Deaths toll Rises to 2,000 in Pakistan's Financial Hub." *Bloomberg*, June 24, 2015. <https://www.bloomberg.com/news/articles/2015-06-24/heat-wave-death-toll-rises-to-2-000-in-pakistan-s-financial-hub>
- ¹⁷ Tom Di Liberto,. "India Heat Wave Kills Thousands." *Cliamte.gov*, June 09, 2015. <https://www.climate.gov/news-features/event-tracker/india-heat-wave-kills-thousands>
- ¹⁸ Ahsan, Ahmad. "Pakistan and India Face Common Threats. Climate Change is the biggest one." *PRISM-DAWN*, September 18, 2019. <https://www.dawn.com/news/1505534>
- ¹⁹ Qamar uz Zaman Chaudhry, Ghulam Rasul, Ahmed Kamal, Ahmed, Munir Ahmed, & Shahbaz Mahmood. "Technical Report on Karachi Heat Wave June 2015." (2015), *Government of Pakistan, Ministry of Climate Change*.
- ²⁰ Ibid.
- ²¹ NDTV. "Heatwave in India in 2015 got worse due to Human-Induce Climate Change: Study." December 19, 2016. <https://www.ndtv.com/india-news/heatwave-in-india-in-2015-got-worse-due-to-human-induced-climate-study-1639450>
- ²² Hanna Duggal, "Infographic: The 100 most polluted cities in the world." *Al Jazeera*, November 22, 2021. <https://www.aljazeera.com/news/2021/11/22/infographic-the-worlds-100-most-polluted-cities-interactive>
- ²³ *Reuters*. "Pollution deahs in India rose to 1.67 million in 2019- Lancet." December 22, 2020. <https://www.reuters.com/article/us-india-pollution-idUSKBN28W158>
- ²⁴ Xari Jalil,. "135,000 die of bad air quality each year in Pakistan." *DAWN*, November 15, 2019. <https://www.dawn.com/news/1516779>

- ²⁵ Sarang Shidore, (2020). "Climate Change and the India-Pakistan Rivalry." *Council on strategic Risk*, pp. 05.
- ²⁶ Sarang Shidore, (2020). "Climate Change and the India-Pakistan Rivalry." *Council on strategic Risk*, pp. 05.
- ²⁷ World Bank (2011). "Vulnerability, Risk Reduction, and Adaptation to Climate Change: Pakistan," pp. 07.
- ²⁸ "Economic Survey of Pakistan (2018-19)" *Government of Pakistan, Finance Division*, pp. 11.
- ²⁹ Ch.Rao, R.S.Prasad, & T.Mohapatra "Climate Change and Indian Agriculture: Impacts, Coping Strategies, Programmes and Policy." *Indian Council of Agriculture Research, Ministry of agriculture and Farmers' Welfare and Ministry of Environment, Forestry and Climate Change, Government of India*, (2019) pp. 04-09.
- ³⁰ Homi Kharas. "The Impact of COVID-19 on Global Extreme Poverty." *Brookings*, October 21, 2020. <https://www.brookings.edu/blog/future-development/2020/10/21/the-impact-of-covid-19-on-global-extreme-poverty/>
- ³¹ Manka Behl, "Floods Killed 5k, Displaces 7cr in 15 years in India: Study." *Times of India*, August 05, 2021. <https://timesofindia.indiatimes.com/city/nagpur/floods-killed-5k-displaced-7-cr-in-15-years-in-india-study/articleshow/85069625.cms>
- ³² Florian Krampe, "Climate Change, Peacebuilding, and Sustaining Peace," *International Peace Institute*, September 13, 2019. <https://theglobalobservatory.org/2019/09/climate-change-peacebuilding-and-sustaining-peace/>
- ³³ Muhammad Uzair Qamar, Muhammad Azmat, & Pierluigi Claps. "Pitfalls in Transboundary Indus Water Treaty: A Perspective to Prevent Unattended Threats to the Global Security." *Natural Portfolio Journal*, (2019) pp. 03-08.
- ³⁴ Ibid.
- ³⁵ Brayshna Kundi,. "Pakistan's Water Crisis: Why a National Water Policy is Needed." *The Asia Foundation*, November 01, 2017. <https://asiafoundation.org/2017/11/01/pakistans-water-crisis-national-water-policy-needed/>
- ³⁶ Reuters. "Pollution deaths in India rose to 1.67 million in 2019- Lancet." December 22, 2020. <https://www.reuters.com/article/us-india-pollution-idUSKBN28W158>
- ³⁷ Syed Muhammad Abubakar,. "Pakistan 5th most Vulnerable Country to Climate Change, Reveals Germanwatch Report." *DAWN*, January 16, 2020. <https://www.dawn.com/news/1520402>
- ³⁹ Neil Bhatiya,. "Why South Asia is so Vulnerable to Climate Change." *Foreign Policy*, April 22, 2014. <https://foreignpolicy.com/2014/04/22/why-south-asia-is-so-vulnerable-to-climate-change/>
- ⁴⁰ Neil Bhatiya,. "Why South Asia is so Vulnerable to Climate Change." *Foreign Policy*, April 22, 2014. <https://foreignpolicy.com/2014/04/22/why-south-asia-is-so-vulnerable-to-climate-change/>
- ⁴¹ Sanaullah Khan,. "NSC approves Pakistan's first-ever National Security Policy." *DAWN*, December 27, 2021. <https://www.dawn.com/news/1666121>
- ⁴² European Commission. "A European Green Deal." https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- ⁴³ IQAir, February 07, 2021. <https://www.iqair.com/blog/wildfires/poor-air-quality-delhi-lahore-crop-burning>
- ⁴⁴ Jason Box, & Naomi Klein,. "Why a Climate Deal is the best hope for Peace." *The New Yorker*, November 18, 2015. <https://www.newyorker.com/news/news-desk/why-a-climate-deal-is-the-best-hope-for-peace>
- ⁴⁵ UN News. "Flood-ravaged Pakistan's leader appeals for urgent global support in UN address." September 23, 2022. <https://news.un.org/en/story/2022/09/1127791>
- ⁴⁶ *Daily Times*. "UN reiterates support for Pakistan, seeks more funds to fight climate change." December 10, 2022. <https://dailytimes.com.pk/1009274/un-reiterates-support-for-pakistan-seeks-more-funds-to-fight-climate-change/>
- ⁴⁷ *Al Jazeera*. "Pakistan says Working with India in Fight against Locust Menace." June 05, 2020. <https://www.aljazeera.com/news/2020/6/5/pakistan-says-working-with-india-in-fight-against-locust-menace>
- ⁴⁸ Anwar Akhtar,. "10 Reasons for Peace between India and Pakistan." *Salzburg Global Seminar*, April 22, 2021. <https://www.salzburgglobal.org/news/opinions/article/10-reasons-for-peace-between-india-and-pakistan>