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Article:	**Environmental Disasters in Khyber Pakhtunkhwa and Financial Losses: A Legal Analysis of Possible Mitigations**
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ABSTRACT

The United Nations has published a comprehensive report in July 2023 on countries globally vulnerable to various risks. According to it, social and economic progress at the global level is being hampered by disasters, food insecurity, unemployment, and educational crises. The consequences of drought have already affected two billion people by depriving them of adequate drinking water. Failure of crops and the risk of famine have increased by 85% in Africa and Southeast Asia. The labor market has been severely impacted by rising temperatures. An estimate suggests that if the global average temperature rises above 1.7 degrees Celsius, 80 million people worldwide could become unemployed. This could lead to increased poverty in developing countries like Pakistan. While the global focus is on a 1.7-degree Celsius rise, a report published in Pakistan in 2015 suggests that temperatures could increase by 2.6 to 2.9 degrees Celsius in the coming decades, further exacerbating unemployment and poverty in Pakistan (Susilowati, Ariefudien et al.). This study is an attempt to understand the current causes of environmental degradation in Khyber Pakhtunkhwa and its possible solutions.

Key Words: Environmental Disasters, Climate Change, Sustainable Development and Legal Framework of Khyber Pakhtunkhwa.

Background

Pakistan is faced with many threats and challenges at the moment such as poverty, illiteracy, economic crises and environmental calamities. But most serious of all is the environmental degradation and fighting against environment-based challenges which is considered as mother of all. At the moment Pakistan is spending more on environment related issue after terrorism. According to the UN Report; the heatwaves is a silent killer and warns that globally, 840 million children will be directly affected. African countries and Pakistan, in particular, face significant challenges of mass migration due to climatic changes, affecting approximately 12 million children (Rehmat, Ahmad et al. 2023). An estimate suggests that natural disasters have increased fivefold in the last fifty years due to climatic changes. The report emphasizes substantial global investment to reduce and combat natural disasters to build resilience and minimize financial and human losses timely. The report details eight different types of disasters for Pakistan, including drought, migration and educational crises, water scarcity, deforestation, loss of biodiversity, energy crisis, air pollution, and floods. Additionally, other disasters are also mentioned. Among these, the following eight disasters are highlighted for this article.

Problem Statement & Research Methodology

Despite the fact that environmental disasters are frequently increasing in terms of frequency and in numbers in Khyber Pakhtunkhwa (KP), yet a considerable gap has been witnessed in mitigating the financial loss and ensuring legal back-up. This study focusses on exploring the Legal angles dealing with environmental disasters in Khyber Pakhtunkhwa for healing up the wounds and for reducing the potential financial loss incurred in Khyber Pakhtunkhwa. Furthermore the ends of the study shall be achieved by conducting a comprehensive literature review, Legal Analysis of the prevailing legal system in Khyber Pakhtunkhwa, Perusing the relevant case studies on the subject matter, conducting interviews with the stakeholders and officials and providing some policy recommendation to cover this gap.

Introduction

Pakistan could be affected by 43 to 67 percent of its population due to drought. Illiteracy in Pakistan is currently up to 73 percent; migration and related educational crises could result in a decrease of up to 12 to 25 percent (Waheed, Fischer et al. 2023). Water scarcity will affect most of Pakistan's population, and Pakistan will be counted among the countries most affected at the global level. There will be a tenfold decrease in water availability compared to 1950, and per capita available water will decrease from 5100 cubic meters to 600 cubic meters. Pakistan's ecology will be severely affected due to deforestation and loss of biodiversity, leading to disruptions in the food chain and a crisis in food species (Ali and Shah 2023). Consequently, progress in the energy sector in Pakistan is very slow. While the world is rapidly transitioning to hybrid and solar energy, there is no specific program for this in Pakistan to expedite the process. Solarization is underway, but it needs to be accelerated. Air pollution is rapidly increasing in Pakistan. An estimate suggests that 6.8 million people die due to air pollution every year, and this figure is expected to increase further. Pakistan will become on the top of the countries affected. Floods pose a significant threat globally. According to this report, floods will increase every year, with a six fold increase predicted in the near future. Due to the presence of glaciers in the mountains of Pakistan, it is particularly vulnerable. This will further

increase the damage caused by floods. An estimate suggests that flood intensity in Pakistan could increase by up to 35 percent (Shahid 2023).

From 2010 to 2023, increasing trends in floods and droughts and associated damages can be observed. Hence, it can be concluded that the lack of financial and technical resources in Pakistan is synonymous with an inability to deal with these issues (Mujtaba, Shah et al. 2024). We need to work on these disasters in the light of this report and other similar reports. It must be prioritized in the budget and be made a regular part of it. There is a need to exempt alternative sources of energy from taxes. A process of maintaining regular records regarding water should be initiated so that it can be determined where and how water can be stored. Efforts should be made to work on the affected areas by floods and to minimize the damage caused by floods. It is not that Pakistan is not doing anything, but what is being done requires speed and seriousness.

In November of this year, an international conference was held in the city of Sharm -e-Sheikh, Egypt, involving all parties. The discussions were extensive, and a decision was made that the countries emitting large amounts of carbon dioxide and methane gases would establish a fund to compensate the affected poorer countries for their losses. This fund aims to mitigate the financial losses caused by climatic changes. In this context, an assessment has been made of the losses incurred by Pakistan in 2022. It is reported that a package of ten billion US dollars has been allocated for Pakistan, while Pakistan had submitted a detailed report amounting to 30 billion US dollars. It is worth mentioning here that in 2009, developed countries had promised to collect 100 billion dollars annually after 2020 to help poor states adapt to climate change and make their energy systems sustainable. However, no action has been taken on this promise yet.

Apart from the Conference of Parties, various international organizations have also made announcements for funds. These include the World Bank, the Asian Development Bank, and the IMF. After detailed analysis, it is concluded that neither are these aid packages sufficient to fully compensate for the losses nor do they address the environmental disturbances in Pakistan. Therefore, it is recommended that Pakistan, along with other developing countries, be assisted on a sustainable basis, and efforts be made to enable these countries to cope with climate change."

The year 2022 proved to be very challenging for Pakistan in terms of climatic changes. At the end of March, a heatwave started, extending into April. This was an unusual occurrence in many parts of Pakistan, especially in the northern regions of Khyber Pakhtunkhwa province, where people typically enjoy the spring season during these months. The heatwave was particularly severe as it coincided with the last days of Ramadan, burdening people further. The temperature was soaring to unprecedented levels when suddenly fires engulfed the mountains of Islamabad and Khyber Pakhtunkhwa. Every day, news would come from new areas reporting fires on different mountains. Control over these fires could not be established yet, and this series continued until June.

The images and videos of smoke rising from the mountains and spreading could be seen. The reason behind this was that the Forest Department of Pakistan and Rescue 1122 had no comprehensive program to deal with it. Therefore, fires in various mountainous areas could not be brought under control. Very few people spoke about linking it to climate change. Most

people believed these fires were deliberately started. It seems this theory holds true because the mountains of Khyber Pakhtunkhwa cannot catch fire spontaneously due to excessive heat. However, it can be argued that the heatwave came earlier this year. Due to the dry grass on the mountains, it quickly caught fire, aiding the spread of flames. These were the factors associated with climate change.

No sooner had the forest fires cooled down than the rains began. Within two to three weeks, the water enveloped the entire Pakistan. This resulted in significant damage. It is difficult to say which areas suffered the most, but everyone agrees that this was the heaviest monsoon in Pakistan's history. This prolonged and intense rainfall was directly linked to climatic changes. Not only was this year heavy, but experts believed that Pakistan will continue to be affected by such rains in the near future. It is reported that there are possibilities of allocating a fund of ten billion US dollars for Pakistan. Many people are pleased and reassured about this, while many others are not entirely convinced (Shehzad 2023).

Future Possibilities of such Climate Change Calamities

Such environmental degrading situations may not occur every year; the possibilities of experiencing such conditions intermittently will remain intact. Therefore, we need to be prepared. This raises another question: climate change is caused by carbon dioxide and methane gases. Pakistan emits very little of these gases. So why does Pakistan get affected more than other countries? Or is it because of the developed countries' emissions? If so, then shouldn't those countries also be responsible for compensating for the damages caused. The answer to these questions was unanimously agreed upon that developed countries should establish a fund to assist developing countries. It is reported that there are possibilities of allocating a fund of ten billion US dollars for Pakistan. Many people are pleased and reassured about this, while many others are not entirely convinced.

According to the Asian Development Bank, Pakistan has suffered a loss of 30 billion US dollars due to climatic changes in the last thirty years, which amounts to approximately one billion US dollars annually (Khan, Khan et al. 2016). According to estimates by the World Bank, Pakistan has incurred an average loss of 3.8 billion US dollars due to climatic changes, while the loss due to floods has amounted to 45 billion US dollars. This suggests that Pakistan's GDP is likely to decrease to 3.9 percent in 2023 instead of the projected 7 percent. Now, considering the aid Pakistan is expected to receive, the Asian Development Bank has announced a package of 2.7 billion US dollars (Rasul and Ahmad 2012).

The World Bank has announced a package of two billion US dollars, while the International Monetary Fund has provided an interim assistance of 1.27 billion US dollars, and the United Nations has announced aid worth 85 million US dollars. Additionally, during this year's Conference of Parties on climate change held in Egypt, known as COP-27, possibilities of allocating 10 billion US dollars were discussed (Hussain, Butt et al. 2020) . Even if all of this is combined and if Pakistan receives all of this funding, it still would not be sufficient to compensate for the losses incurred by Pakistan due to climatic changes.

Mitigating Environmental Disturbances Through Decisions

The disruption within the environmental sector, which we call ecological disturbance in scientific terms, does not warrant compensation. Before discussing compensation related to ecological disturbances, it is essential to clarify the process so that it can be easily understood (Khan, Tahir et al. 2020). Environmental or ecological disturbance can be described as a

physical force, agent, or process through which either abiotic, meaning non-living things or biotic, meaning living things, partially or completely change or disappear from an environmental component or system. This can also be referred to as the degradation of a system because the production capacity or the system itself is either diminished or completely eradicated due to external actions or factors. Restoring it could take several years. For example, when fires occur, many bird nests are destroyed. It is evident that there will be a decrease in the bird population. Now, the activities or roles that these birds were fulfilling may not be possible anymore.

Affected land and its Restoration Possibilities

The question arises: can the previous ecology of that place be restored? And if it can be restored, how much time and expense will it require? Additionally, during the restoration of a place's fertility, an estimate has been made regarding the decrease in production and the compensation for losses incurred. It is the duty of relevant authorities in Pakistan to accurately assess such damages so that the economic and societal impacts on the country and its people can be minimized.

Programs are also being developed at the national level. However, no concrete plan has emerged yet. Approval of various documents, such as climate change policy, action plans, etc., has been sought, but practical implementation is awaited. Additionally, the Prime Minister has announced assistance to empower farmers. At the beginning of November, the Prime Minister announced that banks would provide interest-free and concessional loans to small-scale farmers, totaling 1.9 trillion Pakistani rupees ($8.13 million), with the interest waived for those affected by the floods (Khan, Tahir et al. 2020).

Conclusion

If such droughts and floods occur next year or in the coming years, will Pakistan be assisted at the global level to mitigate the losses and economic damages in Pakistan's case? Because Pakistan faces some losses every year, which amounts to one billion dollars annually from the Asian Development Bank and 3.8 billion dollars annually from the International Bank, or six percent of GDP, which is 20 billion dollars annually. Considering these various figures, can developed countries compensate Pakistan and other similar countries properly for these losses

It is undeniable that if there are losses, compensating countries will fulfill their obligation. However, it is also essential to work on mitigating climate change and obtaining consent for it. Because it would be strange if there were losses every year, and every year assistance funds were distributed among developed countries. This issue needs a permanent solution based on principles. And there should be a mechanism, through which Pakistan, along with all other developed countries, can adapt to climate change and become capable of helping themselves.

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