

CLIMATE CHANGE IN PAKISTAN: EFFECTS AND REMEDIES

Outline:

1. Introduction ✓

2. Pakistan has been one of most affected countries ^{due to} climate change ✓

3. Paying for sins that Pakistan did not commit ✓

4. Effects of climate change in Pakistan

(A) Shifting seasons and abrupt weather patterns ✓

(B) Recurring floods due to heavy rainfalls and melting of glaciers. ✓

(C) Smog resulting from air pollution ✓

(D) Displacements of people ✓

(E) Rising number of heatwaves per year. ✓

(F) Economic crisis due to rehabilitation expenditures. ✓

(G) Threats to the future of the country ✓

5. Remedies and efforts to counter the threats of climate change

(A) Government of Pakistan's efforts ✓

(i) Waste management projects ✓

(ii) Tree plantation projects

(iii) Specific areal projects

(iv) Movement towards environment friendly fuels? projects.

(v) US-Pakistan green alliance framework

(B) Efforts in the public sectors

(i) Positive role of media in spreading awareness

(ii) Requirement of face masks to enter in many institutes.

(iii) Inclusion of awareness of threats of climate change in educational institutes' syllabi

That doesn't come under public sector efforts

(iv) People are growing trees themselves.

(C) Further remedies to deal with the problem

(i) Renewable energy can help Pakistan get rid of environmental unfriendly fuels.

(ii) Developing regional and international solidarity to deal with the problem.

(iii) Hazard management and hazard prevention institutes development is necessary.

(iv) Public awareness is the key

(v) Consensus of politicians to deal with this problem.

(vi) Long term and viable policies for the better future are the need of hour.

6. It is not only Pakistan's problem

7. Most vulnerable are being affected the most.

Phrase it properly

8. Conclusion

Climate change is the most concerning issue of this generation. This generation is the first to witness its visible signals and probably the last one to control and prevent it. Gone are days when climate change was considered a myth and a hyp-conspiracy. The threats and effects of climate change are so visible and concerning that it cannot be ignored anymore. Among the most affected countries, Pakistan still holds one of the top positions unfortunately. Abrupt and sudden changes in weather like heavy rainfalls and heatwaves has further deteriorated the conditions of already economically suffering Pakistan. But as discussed above, the solution to this problem and a path to a brighter future is still available. Climate change has damaged Pakistan in economic, social, educational and governance sectors and a better hazard management system, effective counters to the effects of climate change and

efforts to prevent the phenomenon of climate change altogether can take Pakistan out of this crisis. Additionally, better ~~g~~ and long lasting governmental policies and raising public awareness can help save lives and prevent economic losses greatly.

Looking back at the timeline of its existence, Pakistan has been one of the most affected country due to climate change. For example Floods in 2010 resulted in people (20 millions) either losing their homes ~~or~~ or their lives. The economic losses and mass migrations resulting from these floods further added salt to the wound. Similarly, in 2012, the floods caused even more damage. Heatwaves that are becoming too often and increasing every year are disrupting people's lives both financially and health-wise. But Pakistan's part in causing this global climate change has been a minor one. Ironically, climate change has most affected the countries that had minimum to no part in its development, namely developing countries. Pakistan is one of such countries and is suffering from the effects of a phenomenon

that it has a little part it.

Pakistan is paying the price for the deeds of other countries mainly developed countries.

Pakistan has an emission rate of 0.3-1 per year. Nonetheless, it has been one of the most

affected countries. In this regard, US and China and now India can be seen as major contributors.

US's exceptionalism has allowed it to do as it pleased ~~and~~ and it can be seen here as well,

for example US's non-ratification of Kyoto protocol despite ~~being~~ having the highest emission

rates. Similarly, China and India were not obliged to lower their emission rates, only encouraged

since they were considered as developing countries.

Although this can be considered as the failure of Kyoto protocol, the present industrial race among

developing countries and US-China trade war ~~do~~ not give promising sight to the future. In

between these industrial and trade races among developed countries, developing countries such as

Pakistan are suffering economically and socially.

Pakistan has been witnessing abrupt weather patterns due to climate change for years now.

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Four seasons which were considered as blessings for the country, are now a threat to its people.

The phenomena of summers getting hotter and longer every year, non-seasonal monsoon rainfalls, and short and severe winters are all too common

these days. Global warming has increased the temperature of the country and it is expected to increase from 1.3°C to 4.9°C by 2080-90s.

Additionally, Pakistan has an average 28°C June temperature which is a lot higher than the average global June temperature. This increase in temperature is also the cause of rising sea level and floods as glaciers are melting.

Due to the increase in temperature, glaciers are melting and non-seasonal monsoon rainfalls are occurring causing floods in the country. According to Economic Survey of Pakistan 2022-23, in the first quarter of FY 2023, floods engulfed the large part of agriculture land and disrupted the domestic supply. Flood damages, GDP loss and rehabilitation expenditures are Rs. 3.2 trillion, Rs. 3.3 trillion and Rs. 3.5 trillion, respectively.

Similarly the damages that the 2022 flood

caused has been the highest in the history of Pakistan. Additionally, people lost their jobs, houses and lands causing a huge stress on individuals, social and national conditions economically. Floods have created many land and water issues but Pakistan's atmosphere is in no better condition.

Smog covers the skies of Pakistan's several capital cities throughout the winter. This causes eyes' irritation and throat problems. People are even advised to stay at their homes if they do not have to go out urgently. According to the survey taken by IQAir, Lahore and Karachi ranked 1st and 3rd in the most polluted countries respectively. Both of these cities have most number of people living in them. People's lives have been constantly disrupted by the constant smog that either hovers above their heads or is mixed in the air they breathe. The conditions in these cities are becoming unliveable either due to pollution or due to hazards. As a result people start moving towards other cities not realizing that they themselves are the cause and will cause the same problems in other cities.

Floods in 2022 and 2023 have forced people to migrate to other cities, leaving behind their lands, houses and lives altogether. But such large displacements cause further problems such as health issues, accommodation of these people and the expenditure of rehabilitation. According to Economic Survey of Pakistan, the rehabilitation cost for flood affected people and lands amounted to Rs. 3.5 trillion. This obviously puts a stress on the economic conditions of a country and Pakistan is already facing economic crisis. Thus, this has put burdens on the Pakistan's economy that the country will have to struggle for years to get out of. Climate change and the resulting global warming has been hitting Pakistan by heavy rainfalls on one hand and severe heatwaves on the other.

Heatwaves have been dangerously common in Pakistan and their number is even increasing. Between 1997 and 2015, Pakistan witnessed 126 heatwaves, an average of 7 per year with an upward trend. Severe heatwaves cause unconsciousness, nausea, dehydration.

and in some cases it can even lead to death. Rising trends in temperature, due to global warming has become a real threat to people's lives and the functioning of all the sectors as a whole. What is more concerning is the fact that the number of heatwaves are increasing each year. If nothing is done then a time may come when it will be a summer of heatwaves throughout its period. As climate change affects all the sectors of life in Pakistan, the expenditures to counter these effects rise day by day.

Pakistan is a country already facing economic crisis and climate change has added to its worries due to its adverse effects in various sectors. Pakistan being a developing country has a lot of sectors that it has to work on to improve and the climate change and its effects have not only added to the problems that the country has to deal with but has dominated its concerns. It has not left the country with the choice to ignore it or pay attention to the development of other sectors. For example rehabilitation expenditures prevent many development projects.

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This puts the country on the path which doesn't show light at the end of the tunnel.

Pakistan is a struggling country and climate change has further added to its struggles. It is believed that if nothing is done, Pakistan may go into default due to its economic crisis. The looming threats of economic crisis and the addition of problems resulting from climate change show signs of a dark future for Pakistan. It seems as if problems are being added one after another into Pakistan's list of concerns and climate change may just have spilled the bucket of problems on this list. As problems of Pakistan are discussed, it seems as if nothing can be done since these problems have pushed the country into a corner. But it is imperative to know that not all hope is lost. Not only there are solutions available but government of Pakistan and people at local level are working towards taking Pakistan out of these problems.

It took some time for the government of Pakistan to realize that climate change, global warming and pollutions are serious threats to

Pakistan's future but now the governments have started addressing these issues.

Pollution, may it be of land, water or air has adverse effects on people's lives and one of the most contributors of wastes from households and industries. To manage effective waste management, the government has taken **Clean and Green Initiative** to prevent the health issues and spread of pollution due to ill management of wastes.

Pakistan's air quality especially in capital cities like Lahore and Karachi has been low and projects like trees plantation can help improve the air quality. In this regard Pakistan's government has launched projects like **10 Billion Trees Tsunami** and **Urban Forestry**. Trees are a natural sink of Carbon Dioxide (CO_2) and most effective ^{source} ~~way~~ to counter global warming. Additionally, trees also act as air purifiers and can improve the quality of air.

Special care is needed for flood stricken and dried season affected areas. For example, in the 2022 and the first quarter of 2023, people

Living near the Indus river have suffered the most. Government of Pakistan has launched projects like **Living Indus Initiative** and **Ravi Riverfront Urban Development** project to help the affected people as well as to develop these areas.

Global warming can only be stopped if the use of fossil fuels is lessened or stopped and some projects are under progress to make it happen. **Electric Vehicle Policy** of Pakistan aims to convert 30% of its total transport to electrical vehicles than the conventional vehicles that run on fossil fuels and cause air pollution.

Pakistan's outdated agricultural methods in rural areas not only have less yield but also cause air pollution. These methods need to be updated as per current technological trends. In this regard **US-Pakistan Green Alliance Framework** has to be mentioned. US experts are helping Pakistan to modernize its agricultural sectors. Additionally, US grant to Lahore University of Management Sciences for the production of electrical vehicles is an important step.

In addition to government projects, public sectors have also slowly begun to deal with the threats of climate change. With proper guidance from government institutes, people have discarded their roles of recipients and have become participants to deal with the problem.

Media in this regard is playing positive roles by spreading awareness. Not only do the Television Channels show weather reports but they also display international indexes such as quality of air and pollution in the cities rankings. Media also guide people to plant trees and maintain their vehicles. One of the results of raising awareness is the requirement of face masks.

Face mask in Pakistan and throughout the world ~~has~~ started as a precaution against the spread of Corona virus. But these days, Pakistan is showing a trend of increasing face mask use. These face masks are used to prevent oneself from inhaling smoke left behind by the traffic, smog and has become a requirement in educational and other institutes for their entry. Educational

institutes not only tell their staff and students to wear masks but also educate them about the threats of climate change.

Climate Change has become the part of syllabi in education system of Pakistan. Through this, children not only become aware themselves but also teach their families about the threats of climate change. One positive outcome of this is - the trend of people planting trees themselves.

People plant trees in their household and even manage a small garden in Pakistan. This may seem inadequate but if each house were to plant a tree then there would be millions of trees, enough to solve the problem of pollution and global warming single handedly. All these initiatives both by government and public sectors are admirable. However further improvements can be made by following some suggestions.

Moving towards renewable sources of energy can be a huge leap in solving the problem of climate change both in Pakistan and around the globe. Wind energy, geothermal energy, hydro power and nuclear energy are

Some of the sources of renewable energy with little to no pollution or emission effects. In this regard the whole world needs to take a collective step.

Pakistan can work with its neighbours and international community to deal with the threats of climate change. It is already working with China on several projects in this regard as a part of CPEC. Pakistan having one of the lowest emission rates can guide other countries to lower their emission rates. In return, Pakistan can learn from developed countries how to manage hazards occurring due to climate change effectively.

Hazard management, if effective, can save many lives and prevent many losses. This includes pre-planning, prediction of a hazard occurring, training of management squads, public awareness and timely interventions. People should be made aware about the chances of a hazard happening.

People are not recipients only and they can help counter the effects of climate change with proper training and guidance. In this regard public awareness by various institutes should be ~~assured~~ assured.

Long term policies can only be made if there is a culture of political forbearance and mutual tolerance. Politicians need to come to a consensus to deal with the threats of climate change effectively.

World needs to understand that climate change is a global problem and there is a need of solidarity and combined initiatives to address this problem.

Climate change is marked with the pattern of inequality. It is always the minorities and innocents that are affected the most both nationally and internationally. In Pakistan, female led families and middle class people are most affected by the effects of climate change. Similarly Pakistan despite being ^{one of} the lowest emitting countries is suffering the most.

In conclusion, it is not wrong to say that even if Pakistan has been pushed into corner by climate change, the path to comeback has not disappeared. Pakistan has suffered and is still suffering economically, socially, educationally and in governance sector due to climate change and can make a comeback by reforms in these sectors as well as with international initiatives.

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