

CLIMATE CHANGE AND PAKISTAN: AN OVERVIEW

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ABSTRACT

This paper aims to discuss the hot burning issue that we all are facing right now called “Climate Change” and more specifically in the context of Pakistan. Climate change or the issue of climate change has existed since decades but unfortunately, it is highlighted recently by the efforts of some states or people individually or collectively. Pakistan has the lowest contribution of carbon emission but on the ranking of among the top ten countries that are affected severely. Pakistan’s made policies and doing work on that but since the last decades, our country is facing very unprecedented weather patterns causing uncontrollable damage in the form of deaths especially. The dangerous heat waves we faced in 2015 and then in 2018, and recently the heavy rainfalls also became the reason for people’s deaths. Also, the damage of infrastructure and lack of enough equipment and technologies made this catastrophic. Although Pakistan is doing its efforts towards tackling climate change there is a need to do more. With this, international communities or the developed world’s help and assistance must be required.

Keywords: *Climate Change, Pakistan, Society, Weather Patterns, Policies, Implementation, International Cooperation.*

INTRODUCTION

Climate change has been called the crisis of our time and it is very true. We (the people) started breaking carbon dioxide records in 1950 and since then we haven’t stopped. The question arises why? Well, scientists believe that there is a 95% chance that human beings and their daily basis activities are the primary cause. How? For decades we have been burning more and more fossil fuels like oil and coal, which releases carbon dioxide and gives power to our homes, industries, cars and aero planes as well, and we are doing more than that. The global population has increased or even tripled in the past 70 years. With this fact, we are consuming more products from

animals that release another pollutant called Methane. So, all those gases are present in the air and when the sunlight gets to the earth's atmosphere, some of the heat gets trapped, and the planet (earth) gets warmer, and this whole process is called 'Greenhouse Effect'. Interestingly, the real concern is not that the earth is getting warmer but it's the warmest temperature on earth since the last ice age, say, 10,000 years ago (What is climate change?, 2019).

Initially, the Kyoto Protocol of 1997 designed the targets for the countries who are industrialized and developed, urging them to reduce their carbon emissions of greenhouse gases. The time period given to them was between 2008-2012 but unfortunately the United States of America who is the biggest polluter of carbon emission refused to sign that protocol and did not take it seriously, but the other nations signed it and started working accordingly. This was the start towards addressing the issue of climate change through agreement or signing the protocol (Helm, 2005, pp. 99-100).

According to the United Nations, right now, our world's temperature is about 1 degree Celsius hotter than pre-industrial times, i.e. around 1800. The United Nations says that it is fine and even if we warm by 1.5-degree Celsius before the end of the century we should be fine then too. So, here is the real problem or the issue is the "speed" because currently, we are on the way to 1.5-degree Celsius in even only ten years, and if we could not do anything or could not take concrete measures to stop this speed it will become a catastrophe.

This will happen in our generation times and even then in the coming generation's life and unfortunately, we are already getting the experience in the form of floods, droughts, famine, heavy rain falls, extreme heat waves, extreme winters and something like that. So, Climate change is real, and it is here as the former President of the United States Barack Obama said once in his speech in April 2006 (Kiran & Ul-ain, 2017). Actually, we are all into the Holocene extinction. Every continent is facing unusual climate change activities or the events for instance Europe, right now the continent is facing colder than the Arctic in general. Millions of people from all over the world are suffering from water and food shortage. Heavy rain falls and the unprecedented patterns of rain in summers and winters are happening and becoming a part of our life. The sea waters expand as the temperature gets warmer and the melting of glaciers and ice sheets also add trillions of tons of fresh water into our oceans. The human displacement from one area to another is happening and increasing around the world because of these activities and if things will carry on in this manner, millions of people will pack up their lives from their native areas and move to other areas.

Moreover, the coastal cities around the world could be underwater within 80 years which is so alarming. Also, the island nations in the Pacific more specifically could completely disappear. Natural disasters will become more and more intense, more frequent with devastating consequences. The severe impacts of droughts in different parts of the world creating serious threats to humankind and unfortunately human beings did not achieve enough to make the earth a better place after knowing each and everything about climate change and its effects. We all should have to take it seriously. The world leaders, states, non-governmental organizations, pressure groups, influencers and all the stakeholders and responsible citizens give and present plans and policies but there is no implementation and enough measures took place.

Overall, what is the outcome of all the policies and meetings that have happened to date? How much do we achieve? How much has every single state implemented so far? These are the questions that arise in every single mind. Now back in 2016, the world leaders from many states met and signed the very famous agreement called “The Paris Agreement”. The Paris Agreement’s basic aim was to make strong that actual worldwide response to the real threat of climate change facing every state since decades by keeping a global temperature rising this century well below 2-degree Celsius i.e. above pre-industrial level and also through this agreement the signatory states did ensure that they pursue their efforts towards to limit the temperature increase even further to 1.5 degree Celsius. (United Nations Climate Change, 2020). Moreover, the agreement included that all the states should make or design policies that can deal with the serious threats and impacts of climate change and also the developed countries have a more responsibility towards the developing world to provide them financial assistance though they can achieve low carbon GHG emissions and climate-resilient way. With financial assistance by developed world/countries, there is also a need for better resources and technology framework that supports those vulnerable countries and also they have to set the goals and objectives first. The Paris Agreement also endorsed transparency of the designed framework for the action and support provided by the stakeholders. All the work and action taken by the states put forward or reported through “Nationally determined contributions” (NDCs). Although these efforts will take years, the parties agreed on their collective effort and also present their reports or the achievement they made every 5 years. The Paris Agreement opened for signature on April 22, 2016 i.e. “Earth Day” and this agreement entered into force on November 4, 2016 (United Nations Climate Change, 2020).

All the international forums more specifically related to climate change urged the awareness programs and adaptation and mitigation policies. For instance, The International Panel on Climate Change always says that we have to accept the fact that human beings are more responsible for global warming. One of the IPCC reports found out that 95% of global warming is present because of humans and their activities (Shujat, 2017).

Interestingly, the United States of America and the People's Republic of China are the biggest polluters and emitters of carbon dioxide but our country "Pakistan" being the least carbon emitter is on the seventh number in the list of the most affected or vulnerable states by global warming. Actually to know about climate change needs full understanding and awareness because, due to the lack of proper understanding, most people in general and more specifically in Pakistan consider climate change is only connected with the rise in temperature and maximum pollution, that is it but in reality, it is not true and it is more than that. Although, the contagious results of global warming are witnessing worldwide right now and also Pakistan is bearing its avoirdupois and the very unfortunate thing is that the consequences for Pakistan are multifarious as well (Safi, 2020).

The global temperature rises to 2-degree Celsius and has long been regarded as the pathway to serious global warming. Recently, the scientists researched this and found that the limiting temperature rises to 1.5-degree Celsius is also fine or safe. Furthermore, the World Health Organization (WHO) says that if the current temperature will continue in this manner and the trend we are following will not change then, the temperature could rise to 3-5 degree Celsius by the end of this century which is harmful (What is climate change? A really simple guide, 2020).

Coming back to Pakistan, our country is facing serious droughts, floods and the continuous spell of heavy rainfall in different parts of the country and as we witnessed in Karachi, the city of lights, the heaviest rains recorded in the history recently. The recent unprecedented heavy rainfalls paralyzed the infrastructure of both urban and rural areas. So, Pakistan has to face more droughts, floods and heavy rains if the serious measures will not take place. Moreover, Pakistan's agricultural sector is the largest one and it has a contribution of 25% alone in Pakistan's economy and also has 45% absorption of the country's labor force (Overview of the Economy, 2020).

In Pakistan's case, as Mumtaz, de Oliveira, and Ali (2019) report that climate change affects in many ways but the two are the most important

one, one is the heavy rains which we are witnessing since many years will badly affect our crops more specifically the wheat, rice, sugar cane, maize and cotton these crops will and will be destroyed in interior Sindh. Secondly, due to the changing patterns of weather, our farmers can no longer predict the annual rainfall and they have no idea now how this changing weather can affect the conditions of their crops. Another important thing is to mention here that, unprecedented weather and this global warming is melting out glaciers fast, even all over the world. The interesting fact is to know that more than 7000, Pakistan has more glaciers than anywhere except in the polar region. So, these glaciers are a blessing for Pakistan and also, they provide 75% of the stored water for the country. Furthermore, according to a study published in 2019 in the Journal of sciences advances that, climate change is eating the Himalayan region specifically for glaciers in a very fast manner because as the glaciers melt and that water collects in large glacial lakes then it will cause heavy floods. According to the United Nations Development Programme (UNDP), in 2018, more than 3000 lakes formed in which 33 present in a seriously dangerous condition and because of that around 7 million lives are at risk (As Pakistan glacier melts surges efforts to cut floods risk drag, 2020).

More specifically, the agriculture sector of Pakistan is known as the “backbone” of Pakistan and also Pakistan’s economy is highly dependent on it as well. Unfortunately, this sector is affecting and facing severe challenges due to climate change. Due to unprecedented weather patterns especially the continuous occurrence of floods in those areas which are highly rich in terms of agriculture and producing heavy crops every year. The loss after floods and heavy rainfalls amounted to 14 billion dollars per year and this is around 5% of total GDP to the economy of Pakistan. This figure is alarming, because Pakistan is already listed as a vulnerable country in terms of economy and climate change as well. Also, the agricultural sector of Pakistan has a contribution to provide food to the fastest growing population of Pakistan, according to the “Economic Survey of Pakistan”. Also, the rise of temperature globally which is predicted 1 degree Celsius causing on the production of wheat crop, just because of the climate change and its related weather patterns, wheat production will face a decline of 6-9% yearly (Mumtaz, de Oliverira, & Ali, 2009).

Furthermore, the overall effects of climate change on natural resources are the worst. According to the reports of the International Panel on Climate Change says that 95% of the world’s glaciers are retreating and Himalayan

region included in it. The loss of the Himalayan with the projection of 29% by the year of 2035, which is not so far. Also, the Antarctic also loses and melts its ice sheets rapidly. The melting of ice sheets is not an issue. The real issue is the speed and it is happening because of the fossil fuels by the industries and other pollutants (Ismail, 2018).

Pakistan faced severe floods and the earthquake in the decade of 2000s and therefore after facing the destruction from floods and earthquake, the government of Pakistan realized that the climate change or environment related issues are serious and has to be taken seriously. Therefore, Pakistan made “The National Climate Change Policy” in 2012. It is a guiding principle or objectives for achieving climate-resilient development for the country through mainstreaming climate change in the economic and social sectors of Pakistan which are going to be in a vulnerable position. Pakistan’s government then and the current one, is focusing more on the issue of climate change and introducing policies regarding this. For instance, in 2010-2014, approximately, 6% of Pakistan’s federal budget was allocated for climate change-related expenditures and the priority sectors were energy and transport. Moreover, it is also mentioned in the Nationally Determined Contributions to the Paris Agreement 2016 under the United Nations Framework Convention on Climate Change that, Pakistan has to reduce its greenhouse emission which is up to 20% by the year of 2030. Pakistan also got the international grant for that purpose which is approximately \$40 billion. The amount was given to Pakistan after the assessment that Pakistan’s adaptation policies and projects need in a range between \$7 to \$14 billion per year.

The adaptation process needs to include the development in the use of crops because of the unpredictable weather patterns we are facing for years. Also, there is a need to modernize the irrigation system and to develop water-saving technologies and methods for that purpose. The additional water storage should be more constructive. Furthermore, the huge investment in renewable and hydropower projects is mandatory for a better future. Most importantly, weather forecasting stations require improved warning systems and tools, especially the recent catastrophic heavy rain falls, floods and droughts in different parts of the country. And last but not the least the construction of dikes and seawalls are also important (Chaudhry, 2017).

The Ministry of Climate Change in Pakistan is a cabinet-level ministry concerned with Climate change and Zartaj Gul is the current federal minister of state for climate change. Also, Malik Amin Aslam who is also the adviser

to the Prime Minister of Pakistan, Imran Khan is in charge of the ministry of climate change. If we talk about the policies so far, there are exactly three policies made by Pakistan's government so far. One is "Climate change policy" in 2012 as mentioned above. The second one is "Framework for implementation of National Climate Change policy 2013". And the third one is "The Climate Change Act of 2017" (Chaudhry, 2017).

To make or create a clean and green environment in a country, Prime Minister of Pakistan Imran Khan launched a movement i.e. "Clean Green Pakistan" in October 2018. After coming into power Imran Khan also launched a program of "Ten Billion Tree Tsunami" which has a basic purpose is to plant more and more trees in every part of the country in five years and to make our environment green. It will reverse the decades-old deforestation (*New leader of terror torn Pakistan plans to plant 10 Billion trees*, 2019).

The deforestation in Pakistan is an important issue to discuss because Pakistan has only 6% of forest area which is very unfortunate for the country. Deforestation causes floods, soil erosion and heavy rains and for that purpose, the current government started the program in 2014 "Billion Tree Tsunami Policy" and further extended in 2018 with the name of "Plant for Pakistan Program". Also, during the coronavirus pandemic, the PTI government continued its efforts regarding the reforestation and also creating 60,000 jobs to those who are unemployed during the pandemic. The process of plantation with the supervision of Imran Khan is continuing positively (Aljazeera news, 2020).

In the year of 2019, the European Union, which is working on climate change very seriously, their delegation came to Pakistan for "Climate Diplomacy Day". The EU delegation appreciated the efforts made by Pakistan and its government for the climate change issue and said that we have to take all positive steps for tackling the ongoing issue and also need to address this in every possible manner. To educate people should be a mandatory job. Climate change is affecting us badly our glaciers are melting, forests are disappearing heavy floods, rains cyclones we are facing since decades and therefore our earth is becoming inhabitable (The Delegation of the European Union to Yemen, 2019).

The European Union Ambassador to Pakistan Androulla Kaminara said that the EU is doing all the efforts and work on according to the Paris Agreement designated initially and also promoting the countries affected and listed as vulnerable because of climate change ust like Pakistan. They also emphasized that our earth provides us food, air, water, soil, plants and all the

materials we want for our needs and that earth is ruining by our own hands (The Delegation of the European Union to Yemen, 2019).

Therefore we mobilized our youth for this purpose because this is their time and the coming generation have to deal with these issues. They also appreciated the efforts made by the current Pakistan's government for initiatives like plantation drive, clean green Pakistan program etc. Pakistan is facing all those challenges just like other countries are facing. The only difference here is the lack of awareness and financial assistance. Malik Amin Aslam, adviser to the Prime Minister on climate change also attended the event and said that we are working on nature-based solutions and fortunately we are achieving our goals. It's a slow process but it will give positive results for many decades. He also said our youth is working on local, national and international level and spreading awareness. These are the real custodians of our country and they own it (The Delegation of the European Union to Yemen, 2019).

The United Nations Development Programme (UNDP) is also working with Pakistan and facilitating Pakistan's government by launching different projects and working with the people of Pakistan for the better future in terms of environment especially. The UNDP believes that the environment and climate change both are interlinked with sustainable development of Pakistan and therefore they are working on different sectors. As Pakistan is facing water scarcity and food production is also decreasing natural disasters made the conditions worse and countries like Pakistan facing economic shocks as well (UNDP, 2020).

The UNDP and Pakistan are working together on different projects for tackling the issue of environment related problems and the climate change activities facing the country (Pakistan) from the last two decades specifically. These projects included:

1. Institutional Support to Climate Change Adaptation and Mitigation
2. Generating global environmental benefits from improved decision-making systems and local planning systems.
3. Scaling up of glacial lake outburst flood (GLOF) risk reduction in Northern Pakistan.
4. Comprehensive reduction and elimination of persistent organic pollutants in Pakistan.
5. Sustainable land management programme to combat desertification in Pakistan (SLM) - phase II

6. Disaster Risk Reduction Programme.
7. Sustainable forests management to secure multiple benefits in Pakistan's high conservation areas.

These are some projects of UNDP with Pakistan in Pakistan's those areas affecting fast with climate change and many projects will end this year i.e. 2020 and some will end in 2021 (UNDP, 2020). The international community and developed world agree to help all those countries facing severe impacts of climate change severely.

Moreover, Climate change is also linked with injustice. Injustice with the "have nots", how? The social inequalities generate agitation among people (common man), as mentioned above that climate change is affecting the agriculture sector of Pakistan and Pakistan's agriculture sector gives food to the fastest growing population of our country. So, when food production decreases, then automatically people cannot buy food products easily or get high prices. The population of Pakistan mainly have poor or the people who live in a poverty line they cannot afford basic food items at high prices and unfortunately in Pakistan wheat crisis, sugar crisis is very common in every government's term. So the common man needs food items at a very basic or low price and if they are not available for them so it's a basic psychology that people get angry and find other ways to get all those things whether right or wrong.

So, climate change can create injustice among societies and to tackle with this, or it requires awareness programmes and understanding because there is a chain and a link that just because of wrong or irresponsible behavior and activities by the human beings a chain of problems have created and then finally society (people) common men are suffering and will suffer. There is a need to understand the phenomena of climate change in terms of sociological perspective. This can be applied in any society whether Pakistani or any developed country's society (Dunlap & Brulle, 2015).

The public opinion of Pakistani people matters in this scenario because these are the ones who affect directly or indirectly both. According to the report published by BBC related to Asia that the majority of people live in Pakistan affected by the climate change and its unprecedented activities for instance floods, droughts, heat waves and most importantly heavy rain falls. They are unable to live properly as they live before and also, they have a lack of resources as well. Most importantly they had to migrate from their native places to other places which are a little bit secured than their original ones. Also, they don't have enough energy and water availability and the shortage

of food is also one of the important issues because of climate change activities (Zaheer & Colom, 2019). The mortality rate has also increased because of the heat waves recently and past as well, around 1200 deaths have been recorded in only 2015 heat wave and very recently, in 2018 heat wave 65 deaths recorded (Forecasting models allow Pakistan to anticipate heat waves, 2019).

So far, with all these challenges Pakistan is facing related to climate change, Pakistan has achieved SDG13 goals well before the target year given by the United Nations. The United Nations Development Program officially stated the efforts made by Pakistan. Also, the UNDP appreciated the efforts of Pakistan and its working to protect the environment through the “Clean Green Pakistan” vision by the Prime Minister of Pakistan Imran Khan (The Nation, 2020). Moreover, in the last international conference of climate change held in Madrid, Spain, Pakistan’s representative Mr. Amin Aslam highlighted some important issues and also briefed about Pakistan’s effort towards climate change so far. He said we have to fight collectively to combat climate change; this issue can be handled through collective efforts. No nation can do anything alone. Our economies are falling severely, our social structure is suffering, and most importantly our people are suffering. Our future generation is already in danger. We are giving them what? Nothing. But with all these circumstances that we are facing right now, our youth is active and sharp and mobilizes themselves and takes baby steps for them and coming generations as well because they have done their assessment and know the sensitivity of the issue. So, we have to make extra efforts. Furthermore, he mentioned the policies and programs launched by the current Pakistani government. He also discussed that Pakistan is going towards the launching of the first electric vehicles and set a target that 30% of transport shift towards electric vehicles by 2030 (Khan, 2019).

Also, in Karachi, he talked about the launching of the world’s first zero-emission metro line which is a great achievement for Pakistan. He urged that climate change is our Prime Minister’s Imran Khan’s priority and he is more interested in every project launched by the government.

Moreover, Pakistan is also going towards a complete ban on plastic bags and this project has also been started in many cities, which is now enforced across the country (Khan, 2019).

So, climate change is real and it is here as I mentioned above and we have to fight against this as the former US secretary of state wrote in his article that *“The future generation will measure us whether we did take any action or not and they will do it based on facts. They will judge us all and if we fail, they*

will consider us as failures. So, we don't have enough time. All I know, facts matter, act on them". (Carnegie Endowment for International Peace, 2018).

CONCLUSION

To conclude this article, we have to accept the fact that the numerous challenges we (the world) are facing right now are difficult, but with all these challenges whether they include terrorism, human rights violations, human trafficking, drugs trafficking, inflation, economic issues, societal imbalance, poverty and etc., "*Climate Change*" is one of the important ones we all are facing right now and since decades and the very unfortunate part of the story is that we are not taking it seriously. The glaciers are melting, forests are cutting, wildlife is suffering, animals are dying, weather patterns are changing, people are migrating (not happily) these all are happening because of the climate change activities and the important thing is we (humans) are responsible for it. The whole world is suffering whether rich or poor, developed or developing yes because the very rich ones the United States and the People's Republic of China both states are the biggest contributor and polluter in climate change activities. People are struggling with making efforts and so states are. Pakistan, according to the German Watch Index, is in the list of top ten countries that are affected by climate change and exist in a vulnerable condition. So, there is a need to be alert. People have to change their lifestyle; every individual should play his/her role. The agriculture sector of Pakistan is affected badly with climate change activities and it is very alarming because this sector has a major contribution to the country's GDP growth. Also, the scarcity of water and decrease of food items develop a stressful environment in the Pakistani society. The imbalance of society is created. All we need to know is that people (common man) should know the facts and the seriousness of climate change through awareness programs. However, Pakistan's government is doing its business regarding climate change for instance many projects are working, and policies are making but so far, there is a need to make an extra effort. A little bit more and with these efforts we can save our planet and our country. This issue needs collective effort, at national and international level both. Our youth need to play a serious role towards this issue because the younger generation have to face it in coming years so with their efforts our earth can become a better place again. With some little efforts from every human being. Moreover, Pakistan can beat this fight with collective effort. The world leaders have to wake up for this and should work collectively, the developed world has to contribute towards the developing world and then we can overcome this issue called "Climate Change".

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