**1. Pakistan 7th most vulnerable country to climate change, says Germanwatch**

Syed Muhammad Abubakar Published November 9, 2017

Germanwatch, a German think-tank advocating for the prevention of dangerous climate change, has just launched its latest Global Climate Risk Index 2018 report on the sidelines of COP23 in Bonn, Germany today. World leaders, civil society members, investors, corporates, indigenous communities and media have gathered to boost climate action which will help limit global warming below 2 degrees Celsius and ideally to 1.5 degrees Celsius, as promised in the Paris Agreement.

This year's 13th edition of the analysis further confirms the fact that less developed nations are more vulnerable to the phenomenon. "The Climate Risk Index may serve as a red flag for already existing vulnerability that may further increase in regions, where extreme events will become more frequent or more severe due to climate change," reveals the report.

The Global Climate Risk Index 2018 analyzes to what extent countries have been affected by the impacts of weather-related loss events, i.e. storms, floods, heat waves etc., while referring to the available data of 2016 and from 1997 to 2016. According to the Climate Risk Index for 2016: the 10 most affected countries of the report, the countries most affected in 2016 are Haiti, Zimbabwe and Fiji, which were previously not in the list — thus showing how unpredictable climate change is. Pakistan is ranked 40th in the list, suffering 566 casualties, losing US $47.313 million — equivalent to 0.0048 per cent of the GDP.

Nine out of ten countries who made it to the list of top ten climate affected nations in 2016 were not ranked in last year’s index, which shows how the human-induced climate change is bound to affect everyone regardless of race, color and religion. Surprisingly, the United States of America is in the list on the 10th spot and it suffered 267 casualties, losing the highest amount of financial losses of more than US $47 billion — equivalent to 0.255 per cent of its GDP.

**Countries most affected in the Long-Term Climate Risk Index**

Whereas in the Long-Term Climate Risk Index (CRI): the 10 countries most affected from 1997 to 2016 (annual average) of the report, Honduras, Haiti and Myanmar top the list. The top three countries in the long-run (1997-2016) have been due to Hurricane Mitch in Honduras in 1998, Hurricane Sandy in Haiti in 2012 and Cyclone Nargis in Myanmar in 2008.

Pakistan is ranked on 7th position, with a death toll of 523.1 lives per year i.e. 10,462 lives lost in 20 years and economic losses worth US $ 3.8 billion — equivalent to 0.605 per cent of the GDP in the 20 year period. During this time, Pakistan had suffered from 141 extreme weather events — let it be cyclones, storms, floods, Glacial Lake Outburst Floods (GLOFs) and heatwaves, etc. In last year’s long-term index (1996 to 2015 average), Pakistan held the same 7th position.

Most of the countries affected in the long-term from 1997 to 2016 hold the same position as of last year’s long-term index (1996 to 2015), such as Honduras, Nicaragua, Philippines, Bangladesh, Pakistan and Vietnam are on 1, 4, 5, 6, 7 and 8 positions, respectively. Furthermore, of the ten most affected countries (1997–2016), nine were developing ones in the low income or lower-middle income country group.

**'Pakistan frequently affected from heavy monsoons'**

David Eckstein, one of the main authors of the study said that over the past many years, Pakistan has been one of the most affected countries vulnerable to climate change. He said, "Pakistan because of its geographic location has been frequently affected from heavy monsoons in the past. Over the past 20 years, if we look at the extreme weather events in Pakistan, heavy rainfalls and flooding has severely affected the lives and livelihoods of people. Floods have badly affected the agriculture sector which has compromised the GDP targets too. In the past, heatwaves and possible cold waves have also posed a threat to the people."

Speaking on Pakistan’s love for coal, David shared his worst fears that the perception is common in under-developed and developing countries that since the western world has progressed using coal, it is made an excuse to develop coal power plants in third-world countries — such decisions can entail dangerous consequences.

David also said, "Pakistan should think of reducing its emissions, which can help to reduce the risk of extreme weather events in its country. Emission reduction is a responsibility not only of developed countries but also of under-developed and developing ones, as it’s in their own benefits, and it offers a lot of co-benefits too."

**Lives lost due to climate change**

The Germanwatch report has further stated that more than 524,000 people have died as a direct result of over 11,000 extreme weather events and losses between the time period of 1997 to 2016, amounting to around US $3.16 trillion (in Purchasing Power Parities). This year’s COP presidency is held by the Republic of Fiji, which along with other Small Island Developing States (SIDS) is severely affected by climatic shocks and also ranked in the short and long-term index of Germanwatch.

Dr Tariq Banuri a senior environmental expert, has recently joined Global Change Impact Studies Centre (GCISC) as the Executive Director. Dr Tariq was also the Coordinating Lead Author of the Intergovernmental Panel on Climate Change (IPCC). While commenting upon the report Dr Tariq Banuri said, "Between 1997 and 2016, Pakistan lost an average of 523.1 lives per year i.e. 10,462 lives in 20 years, which comes to 3.27 lives per million populations. As such Pakistan was ranked 4th in terms of property damage and the largest contribution to these damage numbers came from the 2010 floods. Besides this, the country has suffered from prolonged droughts (1998-2002, 2014-17), heat waves (2011, 2014), the 2014 cyclone Nilofar, and GLOF events".

Dr Banuri also cautioned of the ominous long-term threat to the country’s water resources. According to him, "The high rate of population growth has reduced per capita water availability from an ample 5,200 cubic meters per person per day to less than 1,000. Future projected population growth will reduce this to less than 500 by mid-century, which will make the country dependent on others for its food security. Climate change may reduce the water resources even further and this will affect lives, livelihoods and civic peace."

**'Need to act in the face of clear and present danger'**

Pakistan is getting recurrently affected from extreme weather events both in the short-term and long-term index. The super floods of 2010 placed Pakistan on the top slot among the countries most affected by climate change as it lost US $25.3 billion and 5.4 per cent of the GDP, according to Germanwatch.

Dr. Adil Najam, Dean, Frederick S. Pardee School of Global Studies, Boston University, rightly says that Pakistan doesn’t need any such reports to tell that it faces serious climate challenges. "The problem is that we continue to refuse to act in the face of clear and present danger. Another report. Another list. Another ranking. Another seminar. Another talk. That will not help as much as action will," he said.

"Unfortunately, our politics and our media is too caught in immediate trivialities – tamashas, really – to pay heed to things that could actually imperil their own and their children’s future. More than anything in this report, this is the saddest finding of all," concluded Najam. COP23, scheduled to end on November 17, 2017, is a good opportunity for Pakistan to showcase its high climate vulnerability and successful stories of adaptation to the world, so that its case is effectively portrayed, along with building pressure on the developed countries to limit global warming to 1.5 degrees Celsius.

**2. The perils of inaction on climate change in Pakistan**

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Extreme and erratic weather conditions, regular floods and lower agricultural outputs call for urgent adaptation reforms to counter the adverse effects of climate change in Pakistan.

Currently, Pakistan ranks seventh in the 10 countries that are most affected by climate change globally, with 133 events directly attributed to it in the last two decades and costing the country $3.82 billion in losses. according to the Ministry of Climate Change, agriculture and food security in Pakistan are particularly threatened due to increased heat and water stress on crops and livestock, as well as a higher frequency of floods and droughts resulting from changes in climate.

A 2013 report claims that the temperature increases in Pakistan are expected to be higher than the global average, resulting in reduced national agricultural productivity. The minimum and maximum temperatures during summers and winters have increased throughout the country. While the temperatures have risen, the summer season has become prolonged and winter has become shorter. The heat wave period has also increased by 31 days during the years 1980 to 2007.

The report explains that an increase of 1 degree Celsius in mean temperature may reduce wheat yield by 5 to 7 percent in the country. A 1-degree increase in average temperature during sowing stage, which is from November to December, may reduce wheat yield by 7.4 percent. Shortened growing seasons may lead to a decline in yields by 6 to 11 percent in wheat and 15 to 18 percent in basmati rice by 2080.

“The foremost problem we are facing is that our cropping patterns of agriculture have been disturbed due to changed weather patterns,” says Syed Rizwan Mehboob, the Prime Minister’s focal person on climate change. To counter these effects, adaption reforms may include drip and sprinkler irrigation technology, well researched drought tolerant crop varieties and climate monitoring and information-early warning system. However, roadblocks exist in the implementation of these reforms.

The Ministry of Climate Change states, “high initial cost of installation and maintenance for drip and sprinkler systems and early warning system are identified as the key financial barrier in the wide spread adoption of technology by the farmers and communities. The main element of this barrier identified is the lack of trained technical staff locally available for the design, installation and maintenance of the technologies, high rate of taxes and custom duty imposed on import of technology parts, and a small, underdeveloped market for technology importers and suppliers in the country.”

Climate change also adversely affects livestock production, which could decline 20 to 30 percent due to rising temperatures, leading to crises in meat, milk and poultry supplies – pushing prices beyond the reach of the average Pakistani.

The agricultural sector would lose 2 to 15 billion dollars per annum due to climate change by the end of the 21st century. “Livestock in the northern areas graze in the Alpine Meadows but now because of late snowfall the duration of these grazing grounds have decreased,” says Mehboob. “And the livestock in the Punjab Plain suffers as low agricultural output lead to less feed for them. It is the duty of the agriculture research institutes to come up with such livestock and crop varieties that can adapt and are resistant to all climate change vulnerabilities.”

Global warming, which leads to rapid melting of glaciers has consequential effects on the river flows in Pakistan – more water is available causing floods and severe droughts afterwards. “The severe floods of 2010 were attributed to the rapid melting of northern glaciers and erratic monsoon rains in the northern areas, which dangerously coupled to produce the unprecedented floods in Pakistan that wiped off 5 percent of the national GDP through massive losses to human lives and infrastructure. Climate change is predicted to cause more such floods followed by periods of droughts as the northern glaciers rapidly melt and eventually vanish,” says the Ministry of Climate Change.

According to a National Climate Change Policy Draft, the projected recession of Hindu Kush-Karakoram-Himalayan (HKH) glaciers due to global warming and carbon deposits from trans-boundary pollution sources threatens the water inflows into the Indus River System. “Unpredictable weather patterns in terms of floods and heavy monsoons need to be dealt with appropriate water management including proper irrigation practices,” says Mehboob. “We need to increase water conservation, so when we have surplus of water we are able to store it and in times of scarcity be able to use it more efficiently. Demand management of water resources is what is required.”

However, while policies are being drafted since almost a decade now, identifying a plethora of ways in which the effects of climate change can be minimized or dealt with, no concrete actions are seen by the state as yet. Pakistan is now one of the worst casualties of climate change – making it imperative that the matter is not just discussed in theory but is strictly followed through at the implementation level as well.

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