Monthly Round Up

Code Red for Humanity: IPPC's Latest Warning on Climate Changing

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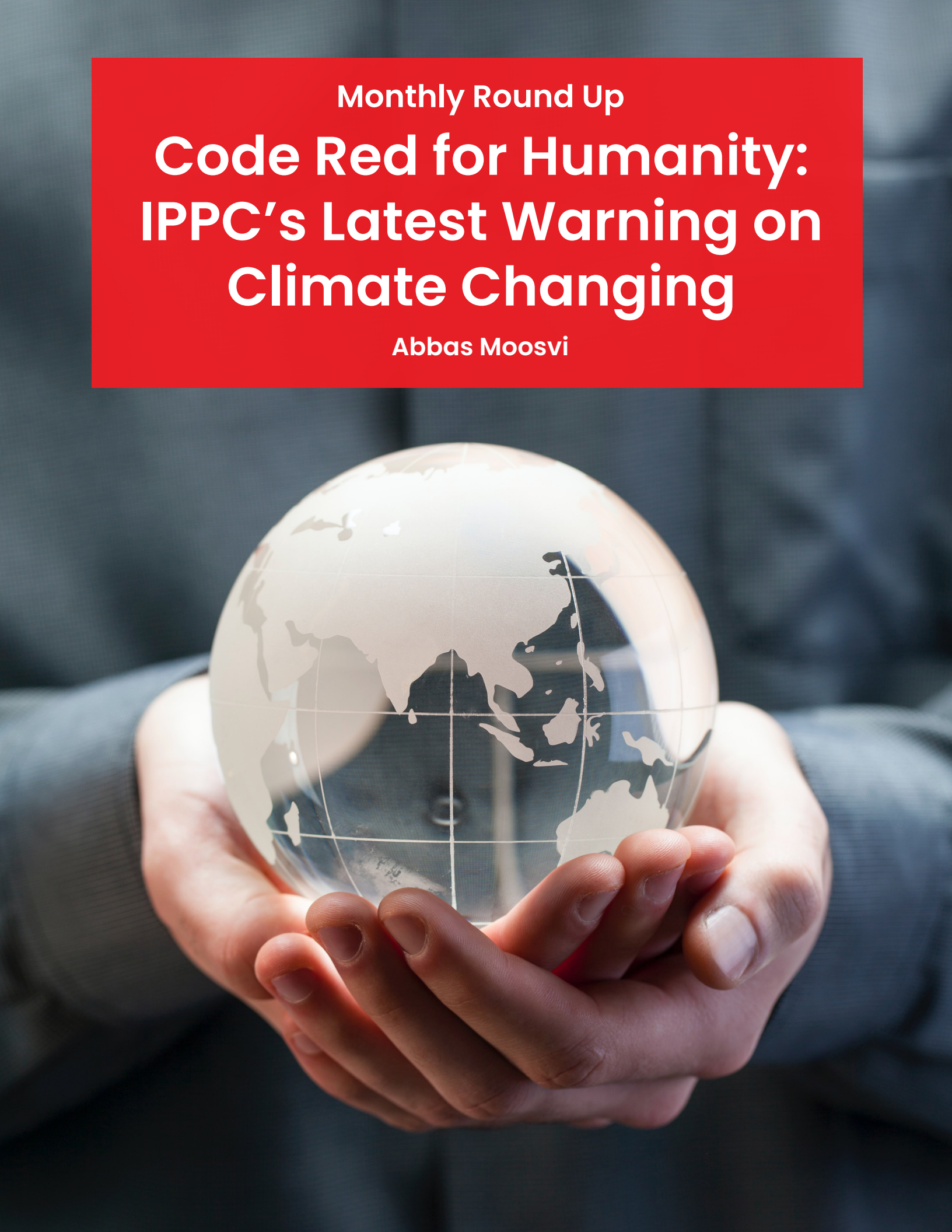

"When it comes to action, we are still in a state of denial. The climate and ecological crisis has never once been treated as a crisis. The gap between what we need to do and what's actually being done is widening by the minute."

–Greta Thunberg

IPCC Report, 2021

On the 7th of August 2021, the Intergovernmental Panel on Climate Change (IPCC) – a subsidiary organization of the United Nations dedicated to shedding light on climate threats – released its sixth assessment report. In what can only be described as the most significant alarm bell from the scientific community to date, the document outlines the salient climate-related developments (or lack thereof) since its last publication in October of 2014. (IPCC, 1-42) Below are its main points:

- It is now beyond any doubt that human actions have led to increased temperatures and carbon concentration, and that too at an accelerating rate across time – this is true for the atmosphere, ocean, and land
- The deterioration in ecosystems has created conditions that are unprecedented in terms of their severity and the threat they pose to all life – and even the most effective responses today would fail to prevent some of its most serious effects
- No region on the planet has managed to escape the fold of climate change – this is evidenced by rising rates of "heatwaves, heavy precipitation, droughts, and tropical clones" all across the globe
- Global warming increases the possibility of "low likelihood, high impact outcomes" and will lead to catastrophic events that are more severe, last longer, and affect more areas than anything observed in history

The key takeaway from the report is that net zero status on global emissions will have to be reached by 2050 if global warming is to be kept under 1.5°**C** - as per the agreements of the climate summit in Paris, 2015. What this means is that removal of emissions will have to match or exceed their entry into the atmosphere, a feat that will necessarily require radical shifts in the way societies are structured. In particular, "fossil fuels must be phased out, energy needs to be used more efficiently, and we need to shift from fuel to electricity wherever possible." (Metz) Renewable sources of energy will be indispensable in this regard, and there will be a political aspect to this struggle – whereby the fossil fuel industry will need to be strictly regulated and curtailed in the near future.

Pakistan's Vulnerabilities

For the developing world, which is most vulnerable to climate change, this report ought to be received by leaders as a call to action – an emergency that is real, deadly, and hovering over our shoulders. This, of course, is not the first warning Pakistan has received – with several scholarly publications over the past few years documenting the effects of climate change within the country's borders. These include, but are not limited to, declining levels of water availability (going from 5600 cubic meters per capita in 1951 to 1200 in 2003) which can adversely impact agricultural yield in the coming years, rising average temperatures, enhanced levels of precipitation (increasing more than 25% over the past century), and more frequent/ severe droughts as well as floods. (Khan et. al, 411-413) This is not to mention economic losses, which were valued at $3.8 billion by a report from Germanwatch in 2020. These affect a wide array of sectors, including "agriculture, livestock, forests, and fisheries, industries, transport, etc." (Khan et. al, 413) Further, it is estimated that almost 10,000 lives have been lost as a direct consequence of climate change, linked to the 152 "extreme weather events from 1999 to 2018." (Abubakar)

No.	Climate change vulnerabilities	Reference
1	Continuous flooding (post-2010)	(Abid et al. 2016b)
2	Severe droughts across country (1999–2003), temperature rise, lack of water resources, and pest-diseases	(Hussain et al. 2018)
3	Recent drought in Tharparker and Cholistan (2016)	(Change, M. of climate 2015)
4	Intense temperature rise (heat wave) in Karachi (July 2015)	(Chaudhry et al. 2015)
5	In 2015, nearly all main types of natural disasters, earthquake, drought, flood, heat wave, and cyclone, were faced by Pakistan	(Hassan and Adnan 2016)
6	Substantial rainfalls with hail storm on March 4, 2016	(Ghazala Qaiser 2016)
7	Snowmelt flooding (2005, 2007, and 2010)	(Afzal 2012)
8	Waterborne diseases (cholera), vector borne diseases (malaria), and dengue fever are presently prevailing with the changing, temperature, humidity, rainfall pattern, etc.	(Ahmed et al. 2016)

Source: Hussain et. al, 48

Current Initiatives

Pakistan's climate change response, in broad terms, is guided by the Pakistan Climate Change Act of 2017 and the National Climate Change Policy of 2012. The latter is a set of initiatives to tackle and mitigate climate change through a multisectoral approach, focused around "energy production, transport, urban development, human health, forestry, and disaster preparedness." (Ahmed et. al, 2-3) The former, on the other hand, was a bill passed with the objective of streamlining the implementation process of the NCCP – which has been a significant struggle for Pakistan, as it tends to be for most developing countries suffering from poverty and low levels of growth and institutional development. Summed up, Pakistan's climate change response strategy, at a national level, could be outlined as follows:

In recent years, the PTI government has introduced a series of new initiatives to tackle climate change under the Ministry of Climate Change, including but not limited to: reforestation, the Ten Billion Tree Tsunami Program, Clean Green Pakistan Index (which monitors the state of water, sanitation, hygiene, solid waste management, and plantation), Citizen's Engagement Program, Drought Initiative, and the National Biodiversity Strategy and Acton Plan. (Economic Survey) All these are commendable steps and will undoubtedly play a role in reducing carbon emissions, but there is still plenty to be done.

Source: Hussain et. al, 48

Way Forward

In a study by Ahmed et. al, it was shown that energy, transport, urban planning, industry, and agriculture – in that order – were the five most relevant sectors of the economy that needed to be rethought and restructured in order to assist global temperature rise under 2°C.

There is an urgent need for the energy sector of Pakistan to move away from thermal sources, which constituted 64% of energy production in 2018, to rapidly be replaced by renewables – including hydro, nuclear, and solar. Current trends are disappointing in this regard, with hydro sources actually dipping from 31% of production in 2017 to 27% in 2018 – and nuclear sources increasing at a snail's pace, from 5% in 2017 to 7% in 2019. (Ahmed et. al, 16) The energy and industrial sectors contribute approximately 51% of greenhouse gas emissions in Pakistan – a figure that is expected to rise to 64% by 2030. One critical area to focus on with regards to the industrial sector is its pollution of water – which leads to about 40% of disease related deaths. Land pollution from the industrial sector also needs to be tackled, whereby chemicals from production processes are dumped into soil – leading to erosion.

Similarly, the transportation sector's incentive structures need to be rethought in a manner that reduces road transit – which was responsible for 91% of passengers and 96% of freight in 2018. This in another crucial area, contributing 29% of CO2 emissions through congestion, pollution, and urban sprawl. Cars, therefore, need to be disincentivized (through road/parking taxes) and replaced with high quality public transit in each of the provincial capitals and a reliable railway network.

Next, urban planning – which constitutes population/urbanization, water management, solid waste management, and an integrated mass-transit system for cities. There is a need to expand infrastructural capacity, especially in the areas of sewage, waste disposal, and public transport. Furthermore, the protection of natural wetlands and waterways is in order. A comprehensive, well defined strategy for each of these is crucial in mitigating climate change.
Finally, agriculture – and in particular crop growing practices – are a significant hurdle. These include the use of fertilizers, pesticides, fuel/oil, tractors and other equipment, cooling/heating facilities which require electricity, and shipping: all of which involve the release of "carbon dioxide, methane, nitrous oxides, and the GHG." (Ahmed et. al, 19) Secondly, the irrigation system – which is mired by inefficiencies – and widespread deforestation are also crucial bottlenecks to addressing climate related ills.
In order to tackle these issues, it is important to focus on the development of institutions – which are the tools through which large scale, sustainable interventions may be pursued. A multipronged, dynamic approach is required in this regard, whereby civil society organizations (such as NGOs) and the corporate sector ought to be incentivized to participate in the climate response alongside the government to raise funds, leverage context specific knowledge, build awareness, contribute to capacity building, engage grassroots communities in the process, and pursue innovative solutions. (Biagini and Miller, 243)

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