

# On the Economic Costs of Floods

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The climate-induced monsoon rains in Pakistan have turned into a humanitarian crisis with substantial human and economic losses. In addition to its static havoc, the crisis has signalled far more calamities in future, given our current vulnerabilities to climate-led shocks on one hand and our negligence to such shocks, on the other. Though the downpour this year was unprecedented, the floods and the resultant losses are mainly caused by our laxity to climate change, recurrent deforestation, and encroachment on waterways, especially on the banks and shoulders of the rivers.

With regard to the current situation; as of 25 August, Pakistan had experienced 375.4 mm of rainfall – 2.87 times higher than the national 30-year average of 130.8 mm, turning it into deadly floods. With respect to human losses, around 33 million people have been affected, with a death toll of near to 1050 people and injuries of more than 1500 since mid-June as estimated by the ministry of climate change. Likewise, according to the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), around 116 districts are affected by the recent floods, with 66 districts officially declared as “calamity hit.” In terms of assets loss, around 218,000 houses are destroyed and 452,000 houses are partially damaged. Furthermore, two million acres of crops are affected, with livestock losses of around 794,000. To sum up, this has been turning into the worst humanitarian disaster of the decade.

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Why do torrential rains cause floods or why are they so costly, especially in Pakistan? There is no single answer to this question. Rather, there are several factors, which transform rains into torrents or calamities. Amongst the most cited reasons for floods is climate change, which has been occurring persistently across the globe. Its usual effects are global warming, droughts, floods, and other extreme weather events. The risks to such change are highlighted in the global Climate Risk Index (CRI) designed by the German environmental and development organisation, Germanwatch. The CRI measures a level of exposure and vulnerability to extreme weather events, which countries should understand as warnings to be prepared for most frequent and/or more severe events in future. According to CRI's ranking, Pakistan has been among the ten countries most affected by climate-related catastrophes between 2000 and 2019. During this period, Pakistan has been exposed to 173 extreme weather events, with the number of fatalities per 100,000 inhabitants has been 0.30. Likewise, with a rank of eighth, Pakistan's economic losses stand at \$3.77 billion from 2000 to 2019, which constitutes roughly 0.52 per unit of GDP in percentage terms. All these statistics show that we are vulnerable to climate-led catastrophes and we have incurred significant losses due to such vulnerability.

Deforestation or tree cover loss in watershed areas and flood plains is another

factor exacerbating the impact of floods. In Pakistan, from 2001 to 2021, we have lost 9.75 thousand hectares (Kha) of tree cover, equivalent to a one per cent decrease in tree cover since 2000, and 3.56Mt of CO<sub>2</sub> emissions, as estimated by the Global Forest Watch (GFW). Tree cover loss may be caused by either fires or some other motives. Since 2000, Pakistan has lost 5.46kha of tree cover from fires and 4.29kha from all other drivers of loss. During the same period, the year with the most tree cover loss due to fires was 2006 with 853ha lost to fires – 63 per cent of all tree cover loss for that year. Overall, around 4.6 per cent of tree cover loss occurred in areas where the dominant motive of loss was deforestation. The region-wise decomposition shows that the settled areas in Khyber Pakhtunkhwa dominate the other regions in terms of tree cover loss, with a loss of 4.49kha, followed by ex-FATA with a 4.27kha loss. Likewise, in Punjab, the tree cover loss was 435ha, in Azad Kashmir it was 400ha and in Northern Areas, it was 115ha. Thus, deforestation or tree cover loss has been a persistent phenomenon in Pakistan.

The third reason for floods is clogging the passages of monsoon waters along with encroachments on the banks and shoulders of the rivers. Waterways or banks of the rivers are legal “Shamilat Deh” or “villages’ community land” in Pakistan. Individuals have the economic incentives to seize such areas and utilise them without considering their worst static and dynamic consequences for other individuals as well as the overall society. In other words, in Pakistan, there is a tragedy of the commons, a famous economic problem, concerning “Shamilat Deh,” in general, or waterways and banks of the rivers, in particular. The monsoon waters or floodwaters are only reclaiming their right of way, which, in turn, has resulted in human and economic losses.

What should be done to control such disasters? I would like to posit that we need to adapt ourselves to climate change and control deforestation and over-grazing of the commons. As far as climate change is concerned; we have to take urgent action to combat climate change and its adverse impacts, as advised in Sustainable Development Goals (SDGs): Goal-13. A two-fold strategy is needed in this regard. First, we have to reduce carbon emissions along with adopting affordable and clean energy to reduce our contribution to global warming. Second, we must focus on the plantation as only trees can hold water. The Ten Billion Tsunami Programme (2019-2023) in this regard has been very encouraging and we must continue with it to control the toll, associated with future extreme weather events. Second, regarding encroachments in the floodplains of river waterways, the government has to take action for their removal through the enactment of the River Act. Along with the strict enforcement of the River Act, the provinces have to resolve issues with regard to the disputes as well as the seizure of “Shamilat Deh” through necessary legislation. One viable option could be to declare them as properties of the provincial governments, with the seizure of these as criminal offences. Only these measures could be productive in reducing the losses to public and private properties and precious human lives from the likely floods in future.

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