A climate risk

Only proper planning can insure against the inevitable extremities of nature

The monsoon is nearing its halfway mark and July, which is among the rainiest months, began with a rainfall deficit but has since seen a revival. For most of last week, all-India rainfall has been over 50% more than what is normal for this time of the year. Many regions in the Konkan coast and the southern peninsula have been seeing instances of extreme rainfall. According to India Meteorological Department (IMD) data on the regional distribution, the 'South Peninsula' has seen 29% more rain from June 1-July 25 than what is normal for this period. Rainfall in Mahabaleshwar, Maharashtra, was torrential enough to beat its all-time record, according to the IMD. The monsoon is characterised by unexpected variability that forecast models can capture only in a limited way. However, much evidence is accumulating that there is a distinctive change in climate patterns. The frequency and the strength of cyclones over the Arabian Sea have increased in the last two decades. There has been a 52% increase in the frequency of cyclones over the Arabian Sea from 2001-2019 and an 8% decrease over the Bay of Bengal compared to 1982-2002, when, historically, most cyclones have been in the Bay of Bengal, according to a new study in *Climate Dynamics*.

Even the duration of these cyclones has increased by 80%. More cyclones are bringing in more moisture from the Arabian Sea and contributing to extreme rainfall events over the western coast, the most recent example being cyclone Tauktae in May, which at 185 kilometres per hour was among the strongest cyclones to approach Mumbai. They drive storm surges that flood the coast. Studies show that a heating globe has increased atmospheric moisture levels, contributing to short, intense spells of rains. The interaction between warming, rainfall and temperature is complex and variables such as aerosol emissions, particulate matter pollution, agriculture and forestry patterns must be accounted for. However, the broader picture is that extreme events – bursts of torrential localised rainfall and prolonged droughts and heatwaves – are likely to increase, making the role of accurate forecasts that are able to warn of such events at least three to five days ahead even more important. But the bigger challenge is to undertake so-called climate-proofing of the most vulnerable regions and taking warnings of scientific risk assessment seriously. Evacuations ahead of a flood or a cyclone are not always effective and what is needed is limited construction in places that have been marked vulnerable. Just as it is possible to plan earthquake-resilient structures and site them scientifically, but hard to anticipate a major quake, similarly, proper planning can insure against the inevitable extremities of nature. International climate change agreements to limit greenhouse gas emissions will yield benefits only in the very long term but what is done in the near future will mean the difference between surviving and thriving.