

## A rapid increase in extreme humid stress in India

Extreme humid stress occurs when the ambient temperature exceeds 35 degrees C and the relative humidity exceeds 50%. Extreme humid heat stress poses distinct challenges to human health and productivity that cannot be mitigated solely by heat action plans designed for dry heat stress. Jency and Srinivasan (2024) examined the trends in extreme humid heat stress in India from 1943 to 2022 using the high-resolution hourly European reanalysis data. They found that certain eastern coastal regions in peninsular India experienced extreme humid heat stress from May to June due to persistent high humidity levels. In northwest and northcentral India extreme dry heat stress is encountered in the pre-monsoon season, followed by a transition to humid heat stress immediately after the onset of the monsoon. The results also show that number of hours of extreme humid heat stress hours per grid has seen a sixfold increase over the past 80 years compared to a threefold increase in dry heat stress. The approach adopted to deal with extreme humid heat stress cannot be same as that adopted to deal with dry heat stress. The use of air conditioners is essential to deal with extreme humid heat stress but 95% of the households in India do not have air conditioners.

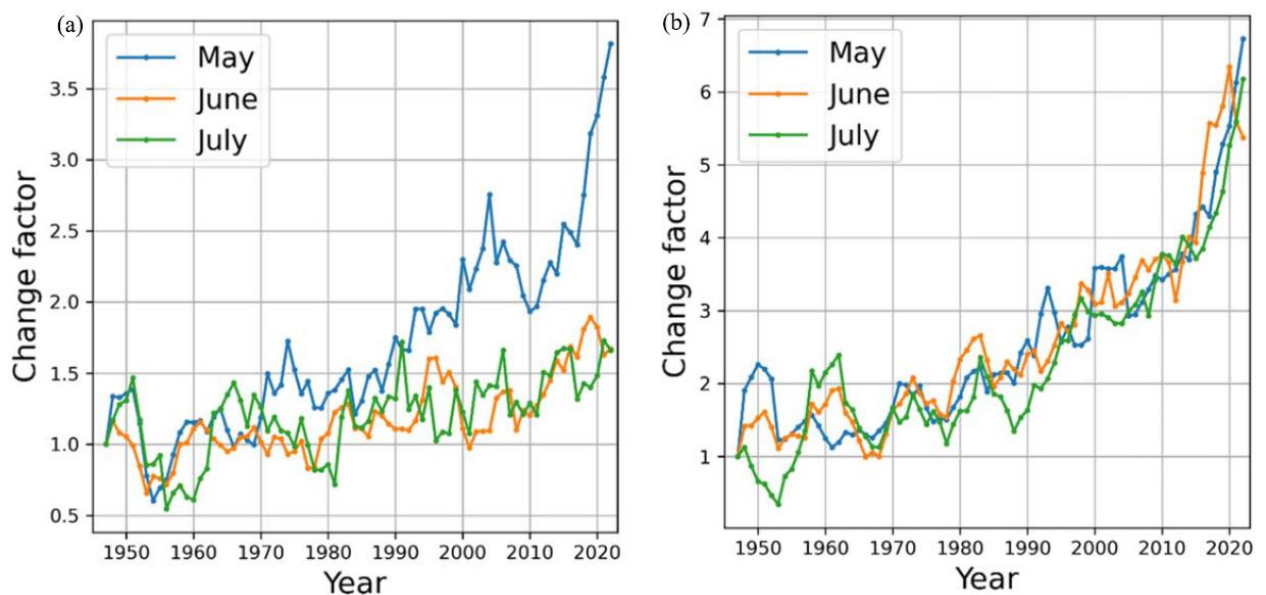


Figure: The variation in the number of hours of dry heat stress(left) and humid heat stress in India during May to July from 1943 to 2022. Change is defined with respect to 1943 Jency Maria Sojan and Jayaraman Srinivasan, Environmental Research Communications. 6, 021002,2024