

Towards Globally Consistent Impact Forecast for Tropical Cyclones-Related Human Displacement



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[Zoom Link](#) (Mixed-mode)

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Tropical cyclones (TCs) displace millions of people every year. Displaced people are subject to heightened risks to their physical and mental well-being. Anticipatory humanitarian action is a smart way to respond to potential crises when they can be forecast. It includes early warning systems designed to protect families and their assets and it supports decision makers and affected communities in making informed choices before a hazard strikes. How many shelters need to be opened? How much food assistance will be needed?

We present the first implementation of a TC impact forecast system for human displacement, the project is a joint collaboration with the Internal Displacement Monitoring Centre (IDMC) in Geneva, Switzerland. The impact forecast system is one of the applications of a python-based, open-source, globally consistent platform called CLIMADA (CLIMate ADAPtation). The platform integrates probabilistic hazard, exposure, and vulnerability information to compute the potential impacts from TC events. The first prototype of the forecast system extracts information from ECMWF ensemble TC forecast tracks, a global population layer at ~1km resolution, and vulnerability functions that relate the exposed people to the intensity of TC wind speed. We show case studies of recent TC events to reveal the potential of the displacement forecast system, and the uncertainties of the forecast results.

The displacement forecast system will provide richer information for decision-makers and help improve warnings. The open-source data and codes of this implementation are also transferable to other users, hazards, and impact types.



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