

EGU22-192

<https://doi.org/10.5194/egusphere-egu22-192>

EGU General Assembly 2022

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## A dataset for multi-risk analysis in the Philippines

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The occurrence and impacts of disasters are increasing in many parts of the world. The increased complexity of disaster risk due to climate change, expected population growth and the increasing interconnectedness of disaster impacts across communities and economic sectors demonstrates the need to improve our ability to understand and model the impacts of consecutive disasters. These consecutive disasters can be described as disasters whose impacts overlap temporally and spatially while recovery from an earlier disaster is still underway. Several challenges affect our ability to account for the impacts of consecutive disasters and multi-hazard interactions, including extensive data requirements and a common focus on single-hazard risk.

Incorporating spatiotemporal dynamics of hazard, exposure and vulnerability is key to understanding drivers of risks and their interactions. In this study, we focus on the Philippines and generate an extensive dataset of multi-hazard events based on observed time series of disasters. We illustrate the potential applications of our dataset with an analysis of the inter-arrival time between hazard events and their impacts. The Philippines is located along the 'Ring of fire' and is one of the world's most at risk countries of natural hazards including earthquakes, tropical cyclones, landslides, and flooding. The study is carried out for the time period 1980-2019 and at two spatial scales: national and provincial. This dataset is further analysed to document the socio-economic impacts of consecutive disasters as well as the interdependencies and dynamics between multi-hazard events. This spatially and temporally consistent dataset can be used as input for future risk modelling effort to integrate the dynamics and impacts of consecutive disasters.