**Exposure Mapping of Super Typhoon Odette (STY Rai)-Induced Storm Surge in the Municipality of San Juan, Southern Leyte, Philippines**

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***ABSTRACT***

Storm surge poses significant threats to coastal communities. The most recent devastation in the Philippines was brought by Super Typhoon Odette (STY Rai) in 2021 with confirmed reports of storm surge occurrences. One of the heavily devastated areas is the Municipality of San Juan, Southern Leyte in the eastern part of the Philippines facing the Pacific Ocean. While local government units in the country are required to integrate Climate and Disaster Risk Assessments (CDRA) in their Comprehensive Land Use Plans (CLUP), there was no consideration of storm surge hazard in the municipality’s CDRA. Part of this dilemma is unavailability of detailed hazard map. In this study, we report a storm surge hazard mapping in the Municipality of San Juan, Southern Leyte based on actual occurrence during landfall of STY Rai. Ground data on storm surge inundation depths and extents were collected from eyewitnesses through a survey in 14 affected barangays (territorial subdivision next to municipal level). Using these anecdotal water level data, we plotted their geographical location in QGIS and interpolated them using built in interpolation tools to come up with a generalized pattern of STY Rai-induced storm surge for the entire municipality. Based on the storm surge classification scale indicated by the state weather bureau, 6 barangays showed *high* *exposure* levels (having inundation depths >4 meters); 5 barangays were predominated by *moderate exposure* (1.01 – 4 meters); and the remaining 3 barangays at *low exposure* (less than a meter inundation depth). Due to STY Rai’s category, the exposure levels obtained therefrom are expected to provide an extreme case scenario. The storm surge hazard map generated herein would lay the foundation for the Municipality of San Juan to craft a more accurate CDRA, and hence a better CLUP.

**Keywords:** Storm Surge, Super Typhoon Odette, Exposure Mapping