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Mapping and Trenching Activity Along the Guinyangan Fault of the Philippine Fault Zone, Southern Luzon, Philippines

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Mapping and research of active faults in the Philippine archipelago have recently dealt with various evidence and methods like semi-detailed to detailed field mapping, aerial photograph interpretations, regional crustal deformation analysis, identification of uplifted marine terraces, identification and dating of fluvial terraces and trenching activities. These are usually undertaken to establish a recurrence interval of major earthquake generators in the archipelago. In this study, the result of the mapping and trenching activities done in southern Luzon along the Philippine Fault Zone (PFZ) is hereby presented.

Among the major active fault in the Philippines, the PFZ is the 1200km-long active fault transecting the Philippine archipelago where most of the major quakes in Philippines had been generated. The most recent major seismic activity in the central portion of PFZ took place along the Guinyangan Fault (GF). Recently, mapping had been undertaken in Gumaca, Quezon down to San Francisco area west of the Bondoc Peninsula to identify in details the trace of GF. At least two field surveys were undertaken for semi-detailed mapping activities wherein the rupture of the 1973 Ragay Gulf earthquake was delineated while a new set of fault traces was identified in the southwestern portion of Bondoc Peninsula. A trench was also excavated across the 1973 surface rupture during these surveys, which yielded at least two, possibly three, events including the 1973 event.

During the trench excavation, about 20 organic samples were obtained from key horizons exposed in the trench. C14 dating of these samples is expected to help establish the recurrence interval and slip rates along this segment of the PFZ. Such information would be very important for the disaster mitigation efforts of the country considering that an activity along the Guinyangan Fault in the near future would surely affect numerous cities in southern Luzon.

On the other hand, updates and revisions of the map of active faults in the Philippines were undertaken considering the findings of this study.