APPLICATIONS OF SPACE-BASED TECHNOLOGY AND INFORMATION AND COMMUNICATION TECHNOLOGY TO STRENGTHEN DISASTER RESILIENCE: A CASE STUDY IN THE PHILIPPINES

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Philippines:

- Consistently ranks among the most at risk country in the world (worldriskreport, 2016, 2017).
- Exposed to various hazards; experiences increasing frequency of super typhoons;
- Philippine DRM framework needs to increase response coordination between national and local governments for more effective response (Blanco, 2015; World Bank, 2017)

Research question

 How does the introduction of ICT at the local level improve the incorporation of community and local governments into the national DRM framework in sharing reliable data and information to strengthen their resilience

Methodology (part I)



1) Community-based OSM basemap development; 2) Community-based Hazard/risk & evacuation mapping; and 3) Crisis mapping

Methodology (part II)



 and 4) Development of a national framework for implementing SBT

Study Area





Results: Community-based OSM basemap development

 In 2017 (one year) 5,000 buildings mapped on OpenStreetMap and 1,000 buildings validated





Results: Community-based Hazard/risk & evacuation mapping



Results: Crisis Mapping

- Mock storm surge (Padre Burgos) and flood (Santa Josefa) scenarios;
- Mobile application successfully used for early warning and needs assessments and situational reporting;
- Tested roles and responsibilities of local stakeholders



Results: Development of a national framework for implementing SBT



Conclusions

- Local stakeholders are able to utilize free and open data to create and share reliable data for disaster preparedness;
- Mobile applications improve situational reporting and needs assessment for data driven decision making;
- It is possible to incorporate community-generated data into the Philippine DRM framework

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