# The innovative all-in-one ICT platform, geoBingAn, for disaster response used by the local community

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Due to recent severe climate changes, the occurrence frequency and intensity of the complex natural disasters subsequently increase all over the world, leading unfortunate losses of properties and human lives. To reduce the impact of the disasters, we need not only the counter-measure from government, but also needs the engagement of the community to strengthening the resilience of disaster risk.

There are several major community-based activities for disaster risk reduction and disaster prevention. It includes town watching, environmental survey, hazard mapping, evacuation planning, and the drills that performs based on the information and plans that mentioned above. However, those activities usually performed in less efficient ways, with lots of manual instructions, redundant dialogs, and paper-pen format data that are hard to be re-used again. Not to mention the difficulty of providing the information and notifying the vulnerable group. Thus, a straightforward and frequently used ICT tool should be introduced to the vulnerable communities, to strengthen the disaster resilience.

We will introduce an innovative all-in-one implementation, geoBingAn, in this abstract and oral presentation. Traditional town watching and environmental survey activities are based on paper map & form. It takes much efforts to collect and digitize it, also difficult to include the meta-data such as photos, audio & video files, geo-tag location, and so on. Recently, some open source tools such as OpenDataKit or KoBoToolbox are introduced. However, it still needs additional IT efforts on deployment and hosting before starting the activity for data collection. This developed service, geoBingAn, allows users to perform the field surveys just as easy as if they were using map enabled Google Forms from mobile. Moreover, the surveys can be planned with polygons drawing on the map view based on general basemap or satellite imagery. All the collected survey data can be exported in Excel or GeoJSON file with a few clicks from website, and quickly visualized in graph as statistic. Collected disaster data and in-time situation report can be harmonized for disaster response. For the coming-disaster preparedness or the in-disaster response, the task assignment and response could be utilized via push notifications or GeoSMS. The community-based Emergency Operating Center can be easily established for information communication and task dispatching based on those data collected/reported. The vulnerable community/group can be swiftly notified, and response to the situation according to the previous practice.

In this presentation, we will also introduce the real practice and use case by the local community and local government agency in Taiwan. This development is the extension of the ICT deployment for Asian Development Bank project, TA8884, for the capacity building to disaster resilience. With the experience in this pilot project, we integrate the feature of survey form and OSM data, that allows user doesn't need to know much about OSM tagging, just focus on its questionnaire. Thus, good for mapping for basemap or infrastructure by even the un-experienced volunteers. As a result, the outcome is appreciated by the community and we would love to share this experience in EGU2019.