SAHANA ALERTING AND MESSAGING BROKER (SAMBRO)
A TOOL TO IMPROVE INSTITUTIONAL RESPONSIVENESS TO ALL HAZARDS IN **ASIA PACIFIC**

POLICY BRIEF

Sharing of early warning information in a timely and coordinated manner is a challenge faced by the National Warning and Response Organizations in Asia and the Pacific. At present, the practice is rather labor intensive and the technologies used to notify the respective communities are limited to Fax, Phone Trees, and limited SMS. The growing reach of wireless networks and mobile phones, especially in the rural areas, offer a convenient alternative to paper-based or manual warning dissemination methods. SAMBRO is a tool that offers multi-path and multi-technology approach to sending and receiving early warnings over the wireless networks. It is a tool proven in Maldives, Myanmar, and the Philippines. Its key features include:

Single entry point	⇒	at sambro.meteo.philipinas.gov.ph, for example
Multiple dissemination channels	⇒	for Swift delivery of alerts over SMS, Email, Twitter, Facebook
Cross agency platform	⇒	to miss no one agency or their stakeholders with alerts
Common alerting protocol (CAP)	⇒	for interoperability among local agencies and links worldwide

Implementation in Maldives, Myanmar, and Philippines under the supervision of Director Generals of their Meteorological, Seismological, and Disaster Management Organizations have proven the Adaptability, Usability and the Utility of SAMBRO. The test involved each country's Early Warning (Meteorology, Hydrology, Earthquake, Volcanology) and Response Organizations (Disaster Management, Civil Protection, Health, Maritime, and Red Cross). A customized SAMBRO tool was operationalized through Maldives National Disaster Management Center, Myanmar Department of Meteorology and Hydrology, and Philippine Atmospheric Geophysical and Astronomical Service Administration. The recommendations arising from the evaluation and the details of the testing are summarized in this policy brief.

RECOMMENDATIONS

NATIONAL POLICIES AND PLANS - Formulate cross-agency situational-awareness policies and plans to improve institutions' responsiveness to hazards using the research findings.
WORKING GROUP - Form a CAP/SAMBRO working group, involving members of the Emergency Communication Committee and other relevant Stakeholders to oversee the CAP and SAMBRO expansion
TRAINING & CERTIFICATION - Offer a CAP/SAMBRO training and certification program to support the Stakeholder Organizations with the adoption and implementation of CAP and CAP-enabled EWSs

TESTING DETAILS

SAMBRO server software is a web-based application. It offers a Common Operating Picture with a listing of alerts and on a map. SAMBRO offers CAP-enabled feeds for other dissemination networks: Internet, GSM, TV, Radio. Authenticated subscribers have access to restricted and private alerts. SAMBRO Android and Apple Mobile APPs integrates with the SAMBRO server. It is capable of: publishing local alerts (example a significant urban fire, landslide, or a chemical spill) and retrieving latest alerts from the server to store them on the phone for offline use. An important feature of the Mobile APP is the audible siren serving as a wake-up function. The SAMBRO tool was hosted at sambro.meteo.philipinas.gov.ph .

Institutional staff were trained as SAMBRO Stewards and Trainers. Members from the various early warning, response, and relevant Departments were also given training. A set of controlled-exercises were carried out in Maldives, Myanmar, and Philippines. They were designed as verification exercises to determine the system's:Utility (state of being useful, beneficial, and cost-effective), Adaptability (capabilities and capacities to alter to the change and new system), and Usability (UI/UX on system complexities, efficiencies, and quality). Results to date (Figures 1 2 3) support the utility, adaptability, and simplicity of SAMBRO; with the Meteo, Hydro, &; Seismo divisions now effectively issuing live alerts with SAMBRO.

UTILITY
On a scale of 1 (disagree) to 5 (agree), National Warning Center staff and Response Organizations agree to SAMBRO being useful and easy-to-use (Figure 1).
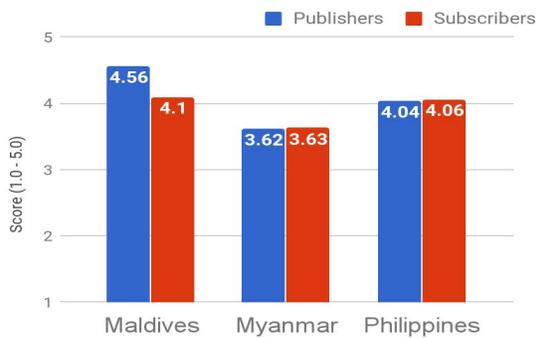
ADAPTABILITY
On a scale of 1 (bad, harmful, foolish, & negative) to 7 (good, beneficial, wise, & positive) the Users' attitude towards adapting SAMBRO is quite high (Figure 2).
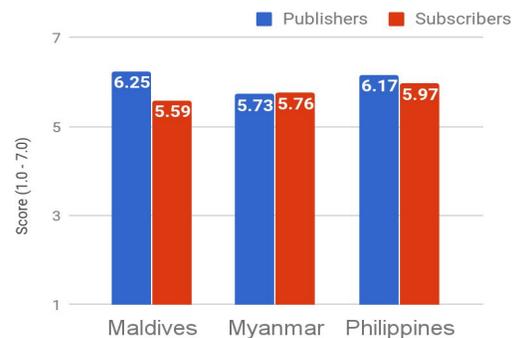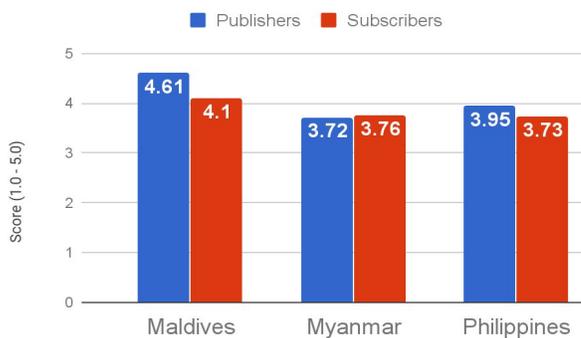
Figure (1) - SAMBRO usefulness and ease-of-use

Figure (2) - Attitude towards using SAMBRO

USABILITY
Simplicity, through Complexity, measures on a scale of 1 (difficult) to 5 (easy). Users can in easily accomplish the tasks for accessing SAMBRO to issue alerts within the allotted warning horizon (Figure 3).

Figure (3) - SAMBRO operational simplicity

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