PROJECT BRIEF

Strengthening of Myanmar's Multi-Hazard Early Warning System
(June 2013-November 2014)

Myanmar's Department of Meteorology and Hydrology (DMH) is the government agency mandated to observe, analyze, predict, and provide warning services for weather- and climate-related hazards, including hazards of geologic and oceanic origins, to contribute to the safety and socio-economic benefit and welfare of communities through, among others, protection of lives and properties, reduction of the impact of natural hazards, and sustainable resource management and development. Donor support has contributed significantly to improving DMH provision of these services. With recent political and economic changes, manifested in the country's opening up to the west, inflow of external support could overwhelm DMH, in the absence of a framework for coherent, integrated, efficient, and effective engagement with donors.

This project on Strengthening Myanmar's Multi-Hazard Early Warning System, supported by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) through the Trust Fund for Tsunami, Disaster and Climate Preparedness, shall assist DMH in developing a capacity building program framework for addressing capacity gaps, as well as fill immediate capacity gaps in earthquake monitoring and tsunami warning, and decision-support tools for disaster risk management.

Objectives

The project aims for strengthened and integrated multi-hazard early warning system in Myanmar through:

1) Synergy in donor assistance for DMH capacity building

RIMES shall assist DMH in developing a capacity building program framework to streamline donor assistance for DMH provision of meteorological, climatological, hydrological, agro-meteorological, seismological, and tsunami and other ocean services. This involves identification of capacity gaps vis-à-vis minimum and optimum requirements for observation and monitoring, data analysis, prediction and forecasting, warning generation and communication, and receipt of user feedback, with reference to WMO and UNESCO/IOC standards.

2) A National Earthquake and Data Center (NEDC) that meets UNESCO/IOC standards for national tsunami warning centers

RIMES shall assist DMH in filling gaps identified by the UNESCO/IOC assessment in September 2012, in particular: a) VSat telemetry of Pathein and Hpa-an seismic stations; b) NEDC access to CISN and CTBTO seismic data; c) integration of data streams from different seismic data acquisition systems; d) operational dedicated SeisComP3, with trained NEDC personnel; e) operational dedicated GTS clients server at NEDC, with trained personnel; f) operational Tide Tool, with trained NEDC personnel; g) NEDC exercises on earthquake and tsunami evaluations at different earthquake scenarios, and on SOP-based generation and dissemination of warning information

3) Reduced disaster risks through users' increased uptake of warning information

RIMES shall assist DMH and the Ministry of Agriculture and Irrigation (MOAI) in implementing key recommendations of the 9th Monsoon Forum in Naypyitaw in October 2012, in particular the development of tools to support users of weather and climate information: an updated agro-ecological zone map for Myanmar, crop-weather calendars that take into consideration the climate pattern in the past decades, agro-meteorological bulletin that integrates crop development stage, expert system for translating weather and climate information into potential impacts and management options, and pilot Climate Risk Management Field Schools to introduce farmers to the use of science-based information in decision-making. Upgrade of the country's agro-meteorological network shall support these initiatives.

In addition, building on ESCAP's project on geospatial information system for disaster risk preparedness in the Asia-Pacific region, RIMES shall assist DMH in developing a web-based geospatial database, for disaster risk management applications, with application demonstration in earthquake risk assessment, using U.S. Geological Survey's ShakeCast, an online tool for rapid assessment of risks to populations, buildings, and other critical facilities from real-time earthquakes, with automated notification to registered users.



Approach

Active engagement with and participation of partner institutions

A project inception meeting, convened by DMH and involving MOAI, Relief and Resettlement Department (RRD), General Administration Department (GAD), and other key stakeholders shall receive feedback and agree on the project framework, timeline, implementation arrangement, and their role and responsibilities as project partners. Partner institutions shall participate in tool development, with their staff, on secondment to RIMES, working alongside RIMES experts to facilitate assimilation of skills and technology transfer, and promote ownership. A project implementation committee, consisting of these key partner institutions, shall regularly monitor and evaluate progress. Project progress and results shall be shared with other stakeholders at the Monsoon Forum, for receiving feedback.

Capacity building through technology transfer, training, and demonstrations

Tools developed shall be transferred to DMH and MOAI. Training shall be provided to users at national and local levels. Tool application shall be demonstrated in select pilot sites.

DMH to drive the process, RIMES to facilitate

DMH shall lead project implementation. RIMES shall provide technical expertise and facilitate project implementation. Consistent with its mandate, RIMES shall provide technical support, as may be needed, even after project completion.

Beneficiaries

- o Department of Meteorology and Hydrology
- o Ministry of Agriculture and Irrigation
- o Relief and Resettlement Department
- o General Administration Department
- o Farming communities at the pilot sites

Expected Outcomes and Outputs

Strengthened and integrated multi-hazard early warning system in Myanmar

Synergy in donor assistance for DMH capacity building

- o DMH capacity building program document
- o Warning system design and specifications

NEDC meets UNESCO/IOC standards for NTWCs

- o VSat telemetry in 2 remote stations
- o 3 seismic stations registered with IRIS
- o Dedicated GTS client server
- o At least 5 staffs trained in SeisComP3, Tide Tool and GTS, and practiced on EQ and tsunami evaluations and SOP-based generation and dissemination of warnings

Reduced disaster risks through users' increased uptake of warning information

- o Geospatial database and customized ShakeCast installed at DMH and available on DMH website
- o At least 5 DMH personnel trained on geospatial database and ShakeCast O&M, further development, and application
- o Myanmar agro-ecological zone map
- o Crop-weather calendars for major crops
- o Agro-meteorological bulletin that integrates crop development stage
- o 17 agro-meteorological stations with automatic data recording and transmission
- o Upgraded facility at DMH for receiving agro-met data from remote stations
- o Web-based agro-advisory expert system at DMH, linked to MOAI website
- o Users manual on Ag-ADE
- o At least 3 DMH personnel trained on Ag-ADE O&M and further development
- o More than 20 MoAI, RRD, and GAD staffs at pilot sites trained on Ag-ADE
- o Adapted CRM Field School curriculum
- o At least 4 trainers for CRM Field School
- o More than 60 farmers trained on forecast-based decision-making

For more information, please contact:

A. R. Subbiah, RIMES Director (subbiah@rimes.int)
Lolita Bildan, RIMES Program Management Unit - Project Coordinator (lolita@rimes.int)
Ruby Rose Policarpio, RIMES Institutional Development Specialist - Country Coordinator (ruby@rimes.int)

RIMES
P.O. Box 4 Klong Luang, Pathumthani 12120, Thailand
Tel. +66 2516 5900-1
Fax. +66 2516 5902
Website: www.rimes.int

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