Launching of India-Supported Projects in Myanmar for Long Lead Flood Early Warning and Earthquake Monitoring

4 May 2018, Nay Pyi Taw

Two days ago, on 2nd May, 2018, we observed the tenth anniversary of the worst natural disaster in the recorded history of Myanmar. Cyclone Nargis killed nearly 140,000 people, affected nearly one-third of the country's population and caused nearly 13 billion dollars in financial and economic damage. There is no estimate of its long term effect, either in terms of the impact on human lives or the socio-economic and environmental implications for the areas it affected.

Extreme events such as Nargis can seriously undermine development gains, with the impact felt most by the poor and vulnerable sections of society. While such natural disasters cannot be prevented, their impact can nevertheless be mitigated considerably through access to prior information that enables preparation and mitigation of damage. It is not always true that disasters strike without warning and whatever we can do to ensure that there is adequate warning to protect against them should be done. It is only appropriate therefore that we are gathered here today to inaugurate the new Government of India-supported projects in Myanmar for long lead flood early warning and earthquake monitoring.

Ladies and Gentlemen, Myanmar is one of the fastest growing economies in the ASEAN region. However, Myanmar is unfortunately also one of the most disaster-prone countries in the world, exposed as it is to multiple hazards including floods, cyclones, earthquakes, landslides and droughts. With socio-economic development, more assets, economic activities and people will be exposed to risks that are only anticipated to increase in the future, induced in part by climate change. Data on disasters recorded in the country from 1980 to 2011 show that 50% of the disasters are flood-related, 23% attributed to storms, 15% to earthquakes and 12% to landslides. In 2017, out of 187 countries in the Long-Term Climate Risk Index, Myanmar ranked as high as 2nd based on direct impact of extreme weather events

from 1996 to 2015. This ranking also considered floods and landslides due to heavy rains brought by the 2015 southwest monsoon, which temporarily displaced over 1.6 million people and caused damages and losses of over $1.5 billion, equivalent to 3 percent of the country's GDP in 2014-2015. Also in 2017, out of 194 countries in the Index for Risk Management, a composite indicator of a country's risk of humanitarian crisis and disaster that would overwhelm its national capacity to respond, Myanmar ranked as high as 12th. This indicates the country's high exposure and vulnerability to the above-mentioned hazards, with a low capacity to respond to, cope with and spring back from the impacts of these hazards.

Ladies and gentlemen, since agriculture is one of the main drivers of Myanmar's economy, contributing 40 percent to its GDP, the Draft Myanmar Sustainable Development Plan of 2018 has correctly identified rural development and agriculture as the key to creating a diverse and productive economy. With 70% of the country's population dependent on agriculture, resilience of this sector to natural hazards is imperative. Unfortunately, many agricultural zones, which are also substantially populated, are prone to hazard risks. Shifting people away from these areas in an effort to shield them from disaster risk is impractical. The only viable long term disaster management option is an effective early warning system to reduce risks and maximize potential livelihood opportunities in these fertile zones.

Early warning information that is effectively communicated, well understood, and integrated into decision-making processes can help not only in managing risks, but also in optimizing benefits from potentially favorable climate conditions. Aware of the country's risk context and the importance of shielding development prospects from these risks, Myanmar's Department of Meteorology and Hydrology prepared a proposal in 2011 to develop and implement a flood forecasting and early warning system with support from the Government of India within the Regional Integrated Multi-Hazard Early Warning System cooperation framework. In 2012, the Government of India announced its acceptance of the proposal at the 12th RIMES Council Meeting in New Delhi and in 2014, funding for the proposed project was

sanctioned by the Ministry of Earth Sciences of the Government of India, together with another RIMES project to enhance Myanmar's earthquake monitoring capacity.

With technical assistance from RIMES and active participation by DMH in all aspects of system development, Myanmar's flood forecasting and early warning system was developed in early 2016 and tested during the 2016 and 2017 monsoon seasons with excellent forecast performance results. The system, which is capable of providing flood forecasts and associated advisories with 3 days' lead time or more, has been transferred to DMH and integrated into its operations. It is now fully operational for the 2018 flood season. An identical system is operational at RIMES to provide back-up support to DMH. Twelve automatic water level stations and three automatic weather stations, all telemetered, support this flood forecasting and early warning system, providing real-time data for forecast verification. I understand that currently the system covers the three major river basins of Ayeyarwaddy, Chindwin and Sittaung. I would like to state that we will support the extension of this system to cover all the river basins in Myanmar.

As part of this package of support, the Government of India has also enhanced Myanmar's earthquake monitoring capacity. Data from dense seismic networks is required to understand the tectonics and assess the earthquake hazard in the seismically active region that is straddled by India, Bhutan, Nepal and Myanmar. To this end, ten telemetered seismic stations have been added to Myanmar's 8-station network. All ten stations have the capability to detect ground motion velocity over a wide range of seismic frequencies. Three of these stations have the capability to measure ground acceleration during an earthquake – information that is useful in determining the forces that a structure experiences during an earthquake. Also, three stations have the capability to measure the displacement of a point on the ground after an earthquake.

Three elements stand out in India, RIMES and DMH Myanmar's innovative and collaborative approach to capacity building in these projects and they demonstrate

the distinct philosophy behind India's development cooperation as compared to that of some other countries.

One - the entire technology development was done through a highly participatory process. Myanmar experts were involved from start to end in the technology development chain to ensure that methods, tools and skills were transferred to the country and the establishment of the stations was done in collaboration with and participation of DMH in all activities from site selection, survey and preparation to equipment importation, installation and telemetry, including system testing and integration into DMH monitoring networks. Training was also provided on station operation and maintenance.

Two – the latest and most relevant scientific and technological tools available to improve warning lead time and allow timely and appropriate responses to reduce losses were deployed, such as the use of open source codes in system development, which permits further system improvement and does away with expensive annual license fees, which burden developing countries; and

Three – in order to ensure sustainability, technical back-up support was made available from RIMES that goes beyond the project period. This will ensure that operations in Myanmar are linked to the RIMES early warning information system, in collaboration with key organizations under the Ministry of Earth Sciences of the Government of India – such as the Indian Meteorological Department, the National Centre for Medium Range Weather Forecasting and the Indian National Centre for Ocean Information Services – as also global centers of excellence such as the European Centre for Medium-Range Weather Forecasts.

In developing this project, I should like to congratulate Myanmar, which, as a RIMES Member State, was able to leverage resources within the RIMES institutional mechanism to bypass multiple and longstanding technical and managerial constraints to obtain a state of the art technology based early warning system

without depending on external consultants, which usually entails huge costs and perpetual dependency and undermines the inherent capacity of beneficiary countries. Other development partners could build on this innovative capacity building approach, as it leverages institutional resources from within the country and helps transform the conventional development partner and beneficiary country relationship.

I am delighted that the Government of India's leadership as Chair of the RIMES Council has significantly contributed to this highly commendable venture. I am confident that this will accelerate the momentum towards replication of the Myanmar experience and bring RIMES programs and services to a cluster of countries in other RIMES sub- regions such as Africa, Central Asia, South Asia, Southeast Asia and West Asia. I would like to express my utmost appreciation to the Myanmar DMH and the Ministry of Transport and Communications for being active and supportive implementing partners. The Government of India remains committed to cooperating with the Government of Myanmar in enhancing early warning systems to safeguard its development efforts.

With these words, I dedicate the new flood early warning system to the people of Myanmar.

Thank you. Chezu tin ba de!