

When the big water comes, be ready!

Impact Story

November 2016



Photo by ADPC

ADPC's initiatives in Myanmar strive to monitor and predict hazardous events so communities, who rely on water resources as a part of everyday life can remain safe during extreme weather events.

Nay Pyi Taw , Myanmar – In May 2008, Cyclone Nargis struck the Irrawaddy delta, killing about 140,000 people and impacting 2.4 million in the communities of the mostly rural and poor area. This disaster is a painful reminder of the constant threat Myanmar faces from natural disasters. At that time, the still isolated and developing country needed international assistance to deal with the Nargis destruction and ADPC was invited in to help the Department of Meteorology and Hydrology (DMH) with post-disaster assessment. That's when the idea to start a more long-term cooperation with the Myanmar government to enhance their capacity in monitoring and projections of weather and strengthen climate services arose.

Since 2012, ADPC has been conducting and facilitating the training and soft support in the form of state-of-the-art technology to DMH staff, enhancing their capacity to monitor and predict weather events, such as floods and landslides, but also to create climate change projections. The project is financed by the Ministry of Foreign Affairs of Norway and the expert knowledge has been channeled through a partnership with Met-Norway.



Asian Disaster Preparedness Center

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DMH MYANMAR WRF(30 km) RAINFALL (inches) FORECAST(24 hr)
Based on GFS 06:30 MST of (03-05-2017) Valid for 06:30 MST of (04-05-2017)

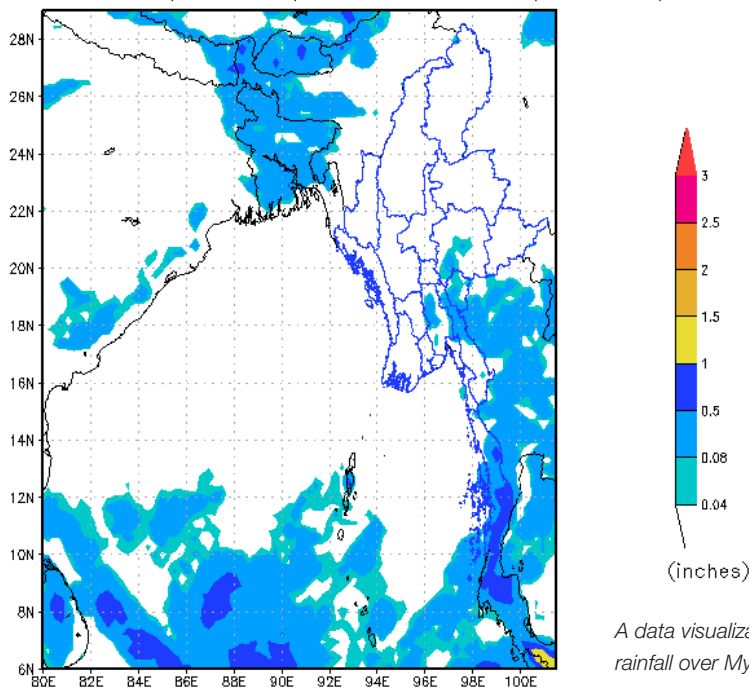


Photo by ADPC

A data visualization predicting the amount of rainfall over Myanmar and other areas.

Digitalization of weather forecast and public access to climate projections

At the DMH office in Nay Pyi Taw, the situation room of the meteorological department is busy and noisy, as the ten-member staff discuss weather data visualizations and prepare various weather forecasts for the day or the week, or particularly for the monsoon season.

Just next door in the DMH studio, the daily weather forecast is filmed to be broadcast on state television across the country by the meteorological staff. Dr. Tin Mar Htay, a climate change specialist holding a Ph.D. from Yangon University, offers a glimpse into the different tools and open source database programs the Norwegians have provided for free as she explains how they monitor the monsoon and cyclone seasons. “Thanks to the software and training, we can work on our own, analyze and monitor weather and

climate, [and] develop Myanmar specific model products,” says Dr. Tin Mar Htay. She adds that with the ability to gather data and create projections, DMH can serve the public better. In that sense, the most effective output of this project surely is the Climate Data Portal available to the public. It’s very much a digital revolution for Myanmar’s meteorologists and climatologists as well as hydrologists, advancing ways of communicating weather and climate forecasts to the public.

“Some of the successful outputs of this project with ADPC and the Norwegian government is the upgrade to our weather and climate services, which make data available to the public, but also the software provided to our departments of meteorology and hydrology, which are undergoing a digital transformation in their work,” says DMH Director General, Dr. Hrin Nei Thiam.

A screenshot of the Myanmar Climate Data Portal developed by ADPC with support from the Ministry of Foreign Affairs of Norway, designed for the public to access climatological, meteorological, geographical and projected climate change scenarios on the web

Photo by ADPC

Social mapping strengthens early warning system and saves lives

Last year, Myanmar suffered extensive flooding in 15 out of their 30 provinces; half of the affected areas were declared disaster zones, impacting millions of people. To prevent and manage such situations of extreme weather, Myanmar's hydrological experts need to measure river flow, analyze the behavior of rivers and even predict landslides which are a frequent and dangerous consequence of heavy rainfall.

As part of the capacity building project by ADPC and Norwegian experts, hydrologists in Nay Pyi Taw office had received the HBV model and training on how to apply it. One such expert is Mr. Myon Tun Oo, whose team focuses on flood forecasting and issues flood warnings to key government agencies.

"We can now measure and check the data, control data equipment. With the new technologies, we can automatically calculate everything in a computer. It makes our work much easier and effective, we can produce data within days. Manually, it used to take much longer," says Mr. Myo Tun Oo.

To strengthen the early warning system for floods and landslides, hydrologists need to work closely with meteorologists on flood forecasting, but in order to determine the situation on the ground in flood prone areas, they have to understand river terrain. Through training, the DMH staff is now also capable of monitoring river flow and analyzing weather's behavior. The program involved communities social mapping to improve disaster preparedness and early warning at local level.

"Many people in Myanmar live in high flood risk areas. We've launched a social-mapping project in Chin state, in communities of the Chin Win river, which is a flooding zone. The people help create flood maps as they have knowledge of flood zones and where landslides usually occur," says Mr. Myo Tun Oo.

Social mapping is a new way of crowdsourcing maps and in disaster preparedness it improves the early warning system, adding capacity to the disaster resilience of local communities. *"Not only does it help us determine high risk areas and use the social map data to create simulations, social mapping enhances local understanding of hazards. People can better prepare for the risks as they become first responders in case of floods or landslides,"* adds Dr. Senaka Basnayake, Head of Department at ADPC.



Photo by ADPC

Dr. Senaka Basnayake, Department Head Climate Change and Climate Risk Management, ADPC, (center) next to a solar-powered automatic rain gauge station that records, stores, and sends data to a central database.



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