

# BUILDING RESILIENCE IN SOUTHEAST ASIA

Promoting risk reduction investments and innovative disaster risk finance solutions

## AT A GLANCE

**Countries** Cambodia, Lao People's Democratic Republic (PDR), Myanmar

**Risks** River floods, urban floods, earthquakes, tropical storms, cyclones, landslides

**Area of Engagement** Promoting resilience to climate change; Strengthening hydromet services and early warning systems; Deepening financial protection

In a region with a long tradition of coping with extreme water and weather variability, the Japan-World Bank DRM Program\* supported disaster risk reduction, risk financing, and hydro-meteorological systems and laid the foundation for a new disaster risk insurance facility.

## REGIONAL CHALLENGES CALLING FOR A REGIONAL APPROACH

Despite a long tradition of coping with water and weather variability, floods, droughts and extreme weather events remain a serious challenge in the Southeast Asia region. Its ability to manage the increasing impact of disasters will have important implications on growth and development agendas.

Cambodia faces a variety of hazards, with floods, storms and droughts as the most prevalent. Typhoon Ketsana in 2009, as well as pervasive floods in 2011 and 2014, caused damages and losses of \$132 million, \$625 million, and \$357 million, respectively. Roads are a particularly vulnerable yet critical sector for the economy and country's growth.

Lao PDR experienced major typhoons in 2009 (Ketsana) and in 2011 (Haima), and severe flooding in 2013. Most recently in 2018, floods across the country caused \$371.5 million in damages and losses, making it the most expensive disaster in the past 10 years. A large share of Lao PDR's population is considered highly vulnerable to disaster impacts.



A powerline lies in the street following 2017 floods in Oudomxay, Lao PDR (Photo source: World Bank)

Cyclone Nargis was one of the worst disasters to hit Myanmar, causing large loss of lives and destruction. More recently, severe floods and landslides in 2015 are estimated to have caused production losses to the economy in 2015-16 of about 1.7 percent of 2014 GDP. Myanmar's vulnerability is exacerbated by rapid and unplanned development, especially in cities.

## LAYING THE GROUNDWORK FOR RESILIENT INVESTMENTS

Recognizing the links between development, sustainability, and resilience in Southeast Asia, the Japan-World Bank DRM Program provided a \$2.5 million grant for Cambodia, Lao PDR, and Myanmar with the goal to help identify strategic investments and opportunities in disaster risk reduction, risk financing, and hydro-meteorological systems.

This grant pursued a multi-level approach to strengthen disaster and climate resilience at both the national and regional levels through analytics, advisory services, and capacity-building. The grant focused on priority country investments as well as activities which could improve regional collaboration on financial resilience and hydrometeorological services.

\*The Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries

In Cambodia, analytics were used to examine opportunities to improve resilience of rural roads across different provinces including the use of green infrastructure solutions. In Lao PDR, analysis of benefits of investing in hydrometeorological services was conducted, accompanied by a policy note on opportunities to strengthen hydrometeorological services in the Mekong region. In Myanmar, a structural risk assessment of selected public facilities in Yangon was supported with concept drawings for seismic retrofitting. Priority drainage and flood risk management investments were also identified.

## LESSONS LEARNED

### Importance of analytics for decision making

This program demonstrated that quality information is critical in being able to identify and prioritize investments to strengthen disaster resilience. Through analytics and knowledge exchanges, policy makers have been exposed to a range of tools and methodologies available to improve their understanding of disaster risk, and planning, implementing and maintaining their investments into resilience.

### Understanding potential benefits of regional collaboration in hydromet services

Regional collaboration can bring many benefits to the delivery of national weather, climate and hydrological services. Integration of the region's hydromet systems provides opportunities to lower required investment while increasing accuracy of forecasts. The grant contributed to the discussion and improved understanding of common challenges and opportunities which can inform future investments in this field.

### Innovative regional solutions can provide an additional layer of financial protection

This grant helped to lead the dialogue on financial resilience regionally, laying the groundwork to support the preparation of the Southeast Asia Disaster Risk Insurance Facility (SEADRIF). As part of this dialogue, a regional technical working group on disaster risk finance and insurance has been established and meets regularly on an annual basis. The creation of this catastrophic insurance pool will be the first of its kind in South East Asia.

# More than \$206 million of informed risk reduction investments

## INFORMED INVESTMENTS & DIALOGUE ON COMPREHENSIVE DRM

The grant informed and shaped the project preparation and implementation of three Disaster Risk Management projects in Cambodia, Lao PDR, and Myanmar, supported by World Bank IDA financing approved in 2017.

Throughout the process, governments' capacity to manage disaster risk was strengthened through workshops and trainings benefitting some 200 officials. The grant's results continue to inform the World Bank's program and policy dialogue on disaster and climate resilience in the region.

## RISK REDUCTION IN TARGET AREAS

Cambodia: the grant informed preparation of a \$60 million investment that focuses on improving the disaster resilience and connectivity of rural roads across six provinces, as well as improved capacity of the government to manage and maintain its assets. When finished, over 290 kilometers of rural roads will be strengthened.

Myanmar: the grant helped shape a \$116 million project that supports improved drainage, flood risk management, and seismic retrofitting of select public infrastructure, thereby supporting the capacity of the government to better understand and manage disaster risk in Yangon.

Lao PDR: the grant informed preparation of investments to improve hydrometeorological services and early warning systems as part of a \$30 million project which will also reduce the impacts of flooding in Oudomxay Province.

## POLICY DIALOGUES FORM INTEGRATION ACROSS THE THREE PROJECTS

A series of diagnostic notes informed regional and national dialogues for Cambodia, Lao PDR, and Myanmar with country-specific catastrophe risk profiles. A web-based real-time flood and loss estimation modelling tool was developed, combining hydro-meteorological and satellite data to produce of Loss Exceedance Probability Curves. The analytics and the tool continue to inform the design of the SEADRIF.

*"Yangon faces high flood risk and is located in an earthquake-prone area. The project investments in the city's drainage system, public facilities, and critical infrastructure will help achieve our aim of delivering high quality public infrastructure and services in the city."*

-- Yangon Chief Minister U Phyo Min Thein.