

Flood Forecasting and Early Warning in Transboundary River Basins: A Toolkit



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Foreword

Asia and the Pacific is the most disaster prone region in the world. Building resilience to natural disasters is one of the most pressing challenges for achieving sustainable development in the region. Floods are one of the most frequent natural disasters in Asia-Pacific, with devastating impacts on the poor and vulnerable populations who live along river basins and are dependent on agriculture for their livelihoods. In 2015 alone, floods caused more than US\$ 11 billion in economic damage, much of which can be attributed to large-scale transboundary floods.

Flood forecasting and early warning is one of the most effective flood risk management strategies to minimize the negative impacts of floods. Recognizing this, at the fourth session of the ESCAP Committee on Disaster Risk Reduction in October 2015, Asia-Pacific countries requested ESCAP to work towards establishing a regional cooperation mechanism for early warning of transboundary basin floods, and to galvanize experts in the field to take this priority forward, in line with the ESCAP Resolution 71/12.

Recent advances in science and technology, especially space technology applications, have enabled longer lead times of up to 5-8 days for flood forecasts along the transboundary river basins. These scientific advances, however, rarely reach the communities who live along these vast rivers. On average they get one-day notice for evacuation. It is therefore critical that the operational capacities of flood forecasting and early warning systems in the riparian countries are enhanced to effectively utilize these new tools and techniques to save lives and livelihoods.

This toolkit for flood forecasting and early warning in transboundary river-basin has been prepared in collaboration with the Regional Integrated Multi-Hazard Early Warning System (RIMES), to support the capacity building process in the region. It highlights how the tools, techniques, and other resources available from RIMES, the International Centre for Water Hazard and Risk Management (ICHARM), International Centre for Integrated Mountain Development (ICIMOD), the Mekong River Commission (MRC), the World Bank' s South Asia Water Initiative (SAWI) can be put to operational use for more effective flood forecasting. It is my hope that the toolkit would be of practical value to the flood forecasting community, technical experts, disaster risk managers, and policymakers for enhancing flood early warning systems, especially in transboundary river basins.

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