



# LOCALISING TSUNAMI EARLY WARNING

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The process of disseminating tsunami early warning (TEW) information is complex as it involves a wide array of jurisdictional agencies and response partners, including national contact points, specialist agencies, and sub-national emergency operational centres and related actors. Limitations in preparedness and early warning have been exposed by the recent tsunami events in the Indian Ocean, which highlighted the need to build capacity to address tsunami and other coastal hazards, including multi-hazard and cascading threats, such as submarine landslides and liquefaction.

Recent studies of the Indonesia, Maldives, Myanmar and Sri Lanka have highlighted a number of specific challenges at the local level:

- 1) Sub-national actors have a vital role in disseminating early warning. There is a need for improved downstream Standard Operating Procedures (SOPs) to enhance institutional coordination and re-engage neglected political and representative bodies. The availability of such SOPs varies greatly among agencies and they tend to be fragmented in their approach. Poor coordination will also hinder the effectiveness of new technologies, such as 4<sup>th</sup> and 5<sup>th</sup> generation mobile technologies.
- 2) There is a need to strengthen awareness and knowledge at the community level, and embed early warning and evacuation in local disaster risk reduction planning. Community ownership of the early warning systems must be increased, where the community is engaged as equal partners.
- 3) Formal dissemination of warnings works alongside and sometimes in competition with other communication channels, including social media platforms, which may reinforce official messages, but also have the potential to undermine efforts, for example through social media's potential role as a catalyst for spreading misinformation and false news. There is a need to understand how formal and informal communication mechanisms can better co-exist to more effectively disseminate warning information.







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This project seeks to address these challenges by focusing on the wider array of national and local actors that have a mandate to support effective TEW. It will also seek to address the emerging challenge of cascading hazards that pose a tsunami risk, and the importance of linking tsunami early warning to a multi-hazard environment. The specific objectives of this project are to:

- 1) Map and measure the relationships and flows between downstream actors in the dissemination of tsunami early warning.
- 2) Understand the barriers and enablers for the next generation of TEW dissemination, including its ability to deal with emerging challenges such as cascading hazards and social media.
- 3) Explore the potential for synergising tsunami early warning with other hazards, to provide a multi-hazard early warning approach.
- 4) Further extend and test a self-assessment tool for capacity in tsunami early warning, that can be used at the national and sub-national level to determine the current state of tsunami preparedness.

### Planned activities/outputs include:

- 1) Social network analysis of downstream actors in the Maldives, Myanmar and Sri Lanka that can inform more detailed and accurate standard operating procedures;
- 2) Expert interviews with key agencies and international experts, and a public engagement event in Maldives, Myanmar and Sri Lanka to explore the barriers and enablers for the next generation of TEW dissemination;
- 3) A series of expert workshops to explore synergies with other hazards, with the aim of developing a multi-hazard standard operating procedures in Sri Lanka;
- 4) A minimum of two SCOPUS indexed journal articles and two conference papers;
- 5) Briefing papers targeting key national and subnational actors for each country, and infographics;
- 6) A regional briefing paper and capacity building workshop for end user agencies, in cooperation with IOC-UNESCO IOTWMS Working Group 1.



### Implementing partners:

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| <br><b>University of HUDDERSFIELD</b><br>Global Disaster Resilience Centre,<br>University of Huddersfield, UK (Lead) | <br>Maldivian National University, Maldives                |
| <br>University of Yangon, Myanmar   | <br>Mandalay Technological University, Myanmar             |
| <br>Department of Meteorology, Sri Lanka  | <br>Ministry of Disaster Management, Sri Lanka             |
| <br>Disaster Management Centre, Sri Lanka   | <br>University of Moratuwa, Sri Lanka                      |
| <br>Asian Disaster Preparedness Centre, Thailand  | <br>National Disaster Management Center (NDMC), Maldives   |
| <br>Department of Meteorology (Maldives Meteorological Services), Maldives  | <br>Department of Meteorology and Hydrology (DMH), Myanmar |
| <br>Intergovernmental Oceanographic Commission of UNESCO IOTWMS   | <br>Mandalay Technological University, Myanmar             |

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