

# DELTA Project

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## Developing and Harmonising Local Capacities for Tsunami Early Warning



### ● Research problem

Recent studies have revealed the interconnectedness, and economic and social importance of coastal, urban populations in Indonesia and elsewhere in the region. They have also highlighted their high exposure to disaster risk and limitations in tsunami preparedness. These include capacity gaps among key agencies, including varying availability of national and sub-national standard operating procedures for tsunami early warning (TEW), as well as technical and human capacities. Recent events in Indonesia also demonstrate the challenges posed by near field tsunami events that can cause inundation within minutes. In responding to such challenges, countries are developing more advanced systems for TEW, such as Indonesia's TEW (InaTEWS) 4.0, which will enable the rapid dissemination of data rich mapping and advisories to relevant agencies and the wider public. But, if InaTEWS 4.0 is to be effective, it is necessary to harmonise capacities for TEW at the local level. Official warning information also has to work alongside, but sometimes compete with informal communication such as social media, creating confusion.

### ● Research objectives

- Map and measure the relationships and flows between downstream actors in the dissemination of TEW
- Develop a framework to increase and harmonise the capacity of downstream actors in TEW
- Understand the barriers and enablers for the next generation of TEW dissemination (such as InaTEWS 4.0), and its ability to deal with emerging challenges identified in the last newton project, such as near field tsunamis and social media
- Build researcher capacity to address disaster risk, including improved disaster risk reduction and early warning at the local level

### ● Planned activities

- A social network analysis of downstream actors
- A downstream capacity assessment framework based on case studies in Denpasar Bali, Nusadua Bali and Padang, West Sumathra
- Expert interviews with BMKG (Indonesian Agency for Meteorology, Climatology and Geophysics)/BNPB (Indonesian National Board for Disaster Management), key agencies and international experts, and a public engagement event to explore the barriers and enablers for the next generation of TEW dissemination
- A regional capacity building workshop for end user agencies, in cooperation with IOC-UNESCO IOTWMS Working Group 1
- A research publication workshop for researchers in Indonesia working on disaster risk reduction and related fields

### ● Planned outcomes

1. A social network analysis of downstream actors
2. A downstream capacity assessment framework based on case studies in Denpasar Bali, Nusadua Bali and Padang, West Sumathra
3. Expert interviews with BMKG (Indonesian Agency for Meteorology, Climatology and Geophysics)/BNPB (Indonesian National Board for Disaster Management), key agencies and international experts, and a public engagement event to explore the barriers and enablers for the next generation of TEW dissemination
4. A regional capacity building workshop for end user agencies, in cooperation with IOC-UNESCO IOTWMS Working Group 1
5. A research publication workshop for researchers in Indonesia working on disaster risk reduction and related fields

### ● Implementing partners

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Global Disaster Resilience Centre (Coordinator)  
School of Applied Sciences,  
The University of Huddersfield, UK  
[www.hud.ac.uk/gdrc](http://www.hud.ac.uk/gdrc)



Institute of Technology Bandung  
Indonesia  
[www.itb.ac.id](http://www.itb.ac.id)



Ministry of Agrarian and Spatial Planning  
Indonesia  
[www.atrbpn.go.id](http://www.atrbpn.go.id)



National Disaster Management Agency  
Indonesia  
[www.bnpb.go.id](http://www.bnpb.go.id)



Meteorology, Climatology and Geophysical Agency  
Indonesia  
[www.bmkg.go.id](http://www.bmkg.go.id)



Intergovernmental Coordination Group for the Indian  
Ocean Tsunami Warning and Mitigation System  
(ICG/IOTWMS)  
[ioc.unesco.org](http://ioc.unesco.org)

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