



*Training/Workshop on  
Tsunami Evacuation Maps, Plans, and Procedures and  
the UNESCO-IOC Tsunami Ready Recognition Programme for the Indian Ocean Member States  
Hyderabad - India, 15-23 April 2025*

# UNESCO-IOC Tsunami Ready Indicators

## TRRP 04: Assessment Indicator 2

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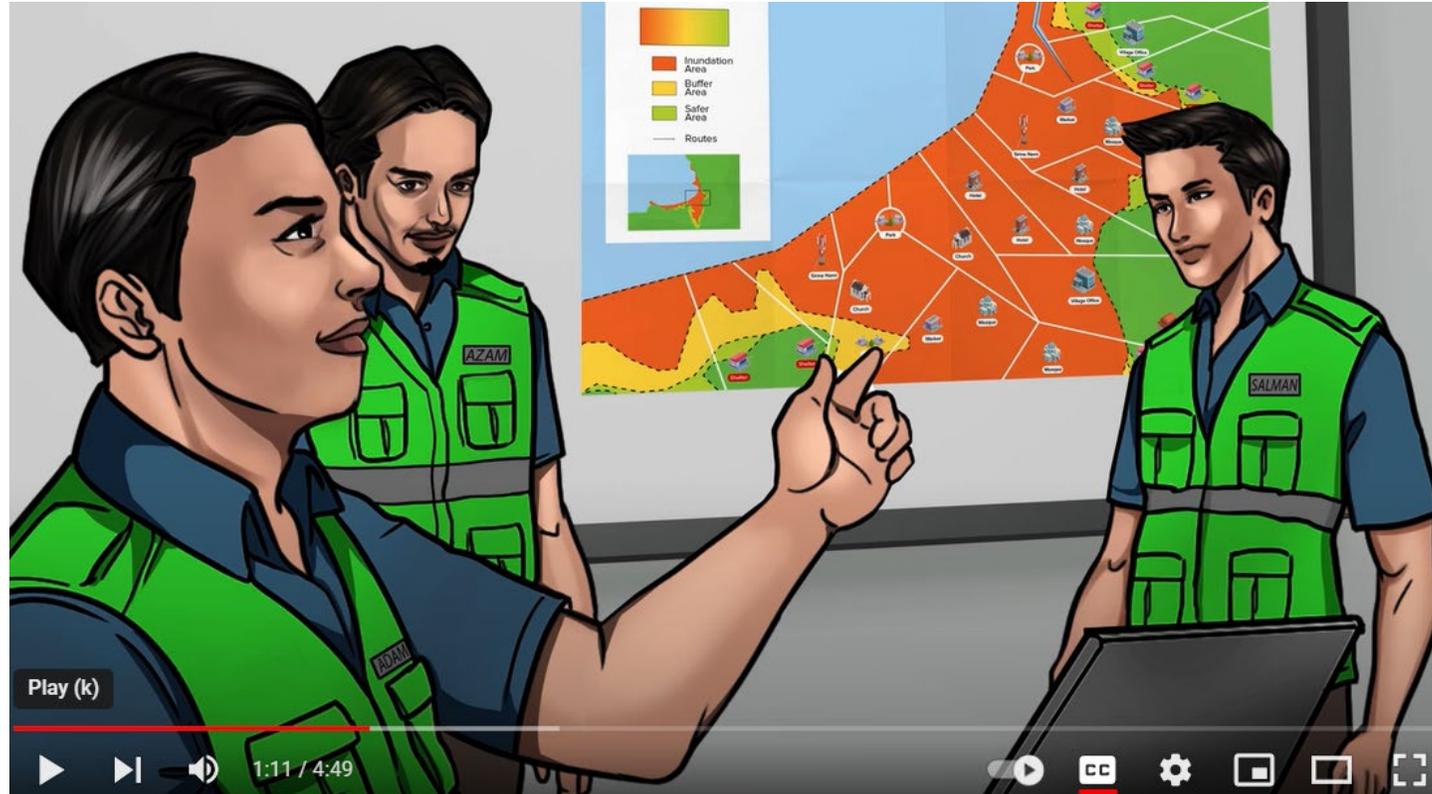


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# ASSESS-2: Number of people at risk in the tsunami hazard zone is estimated



<https://www.youtube.com/watch?v=Wox4cSS8th0Video>

**+ 4:48 minutes**



# ASSESS-2: Number of people at risk in the tsunami hazard zone is estimated

Community needs to have information, knowledge, and understanding of its vulnerability, including:

- Vulnerable populations (people with disabilities, elderly, young, pregnant women, toddlers, etc.)
- Local resident and Non-resident population (e.g., tourists, commuters).
- Day and nighttime population in the hazard zone during different times, e.g., holiday seasons or religious days, etc.
- Critical Infrastructure

Knowing the number of people and critical infrastructure in the hazard zone is important for evacuation planning and response.



# Why is it important

Knowing the number of people in the hazard zone is necessary for estimating the response effort and for planning to build evacuation shelters and define evacuation routes.

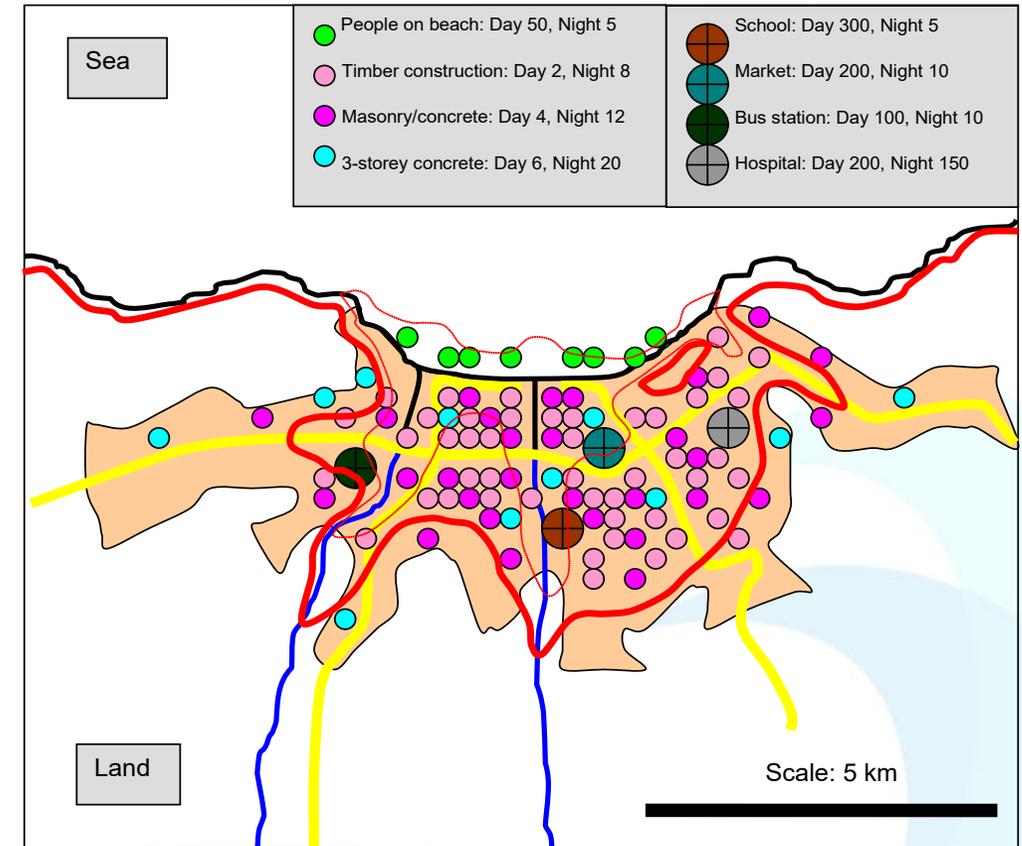


# Considerations

- Take into account all activities, not just residential accommodation. eg. schools, community centres, offices, markets, beaches, hotels, mosques and churches etc.
- Pay particular attention to identifying vulnerable people who will require assistance during evacuation. For example, elderly people, people with disabilities.
- Hospitals in the hazard zone will require specific measures to protect the safety of patients and staff.
- Also take into consideration differences between daytime and nighttime populations, and seasonal variations in workers and tourists.
- Population during summer, winter, holiday seasons and mass gatherings.

# Steps to estimating the number of people at risk

1. Start with hazard zone map for a specified tsunami scenario to define geographical limits. Might be worst case or baseline scenario
2. Create a census and asset database for people and their supporting systems within and adjoining the modelled inundation zone
3. Create an exposure database of people and their supporting systems, assets and critical infrastructure for specified tsunami scenarios
4. Produce maps of population distribution classified by vulnerability and exposure for specified tsunami scenarios. Larger towns may be subdivided into districts, quadrants or segments

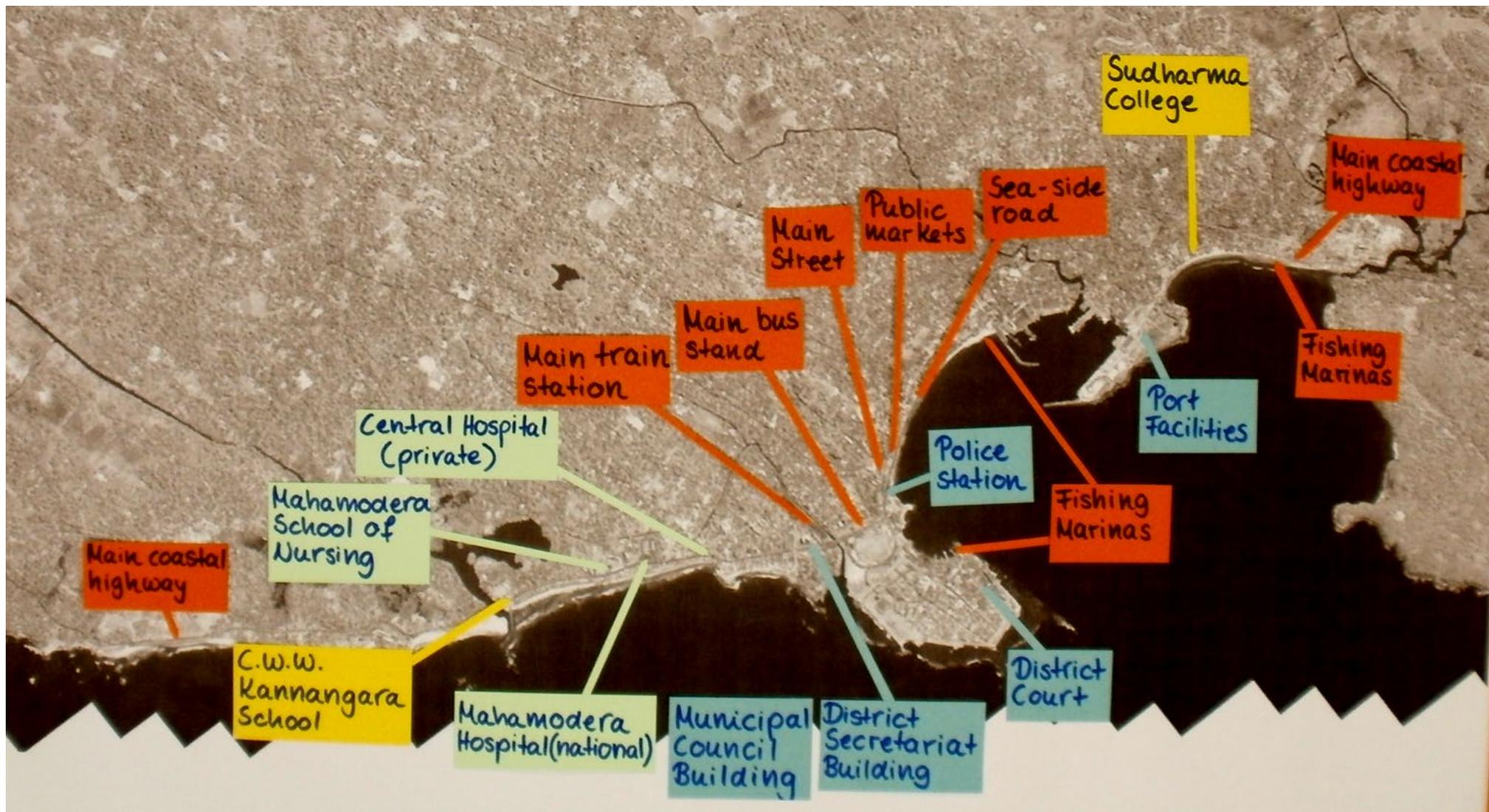


Exposure map and database (training exercise). Source: UNESCO IOC and UNDP, 2009

# Sources of information

- Census data is a good starting point (population distribution, socio-economic status, statistics such as age, occupation, disability and education)
- Other sources i.e. provincial or municipal data
- Information from the DMO for existing Emergency Operation Plans.
- When using official information (i.e. census data) it is advisable to conduct ground surveys to check the accuracy of the data. Populations can be dynamic and change over time in response to a range of socio-economic factors
- For smaller communities or where official data is not available, on-the-ground surveys and questionnaires will be required.
- Satellite imagery and apps such as Google Maps are useful for planning such surveys.





Satellite image of the City of Galle, Sri Lanka indicating the location of critical infrastructure exposed to tsunamis.

Source: Satellite image by GeoEye through European Space Imaging. Copyright: European Space Imaging, ESI, GMBH

# Thank you



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IOTIC-BMKG Programme Office***

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