The Global Tsunami Model (GTM)

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Preconference Interactive Session
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Extreme, infrequent and uncertain events

✓ Infrequent tsunamis dominate disaster risk in different parts of the world
✓ This is a relevant hazard in several SIDS
✓ Considerable increase of exposure in tsunami hazard prone areas
Extreme, infrequent and uncertain events

✓ The tsunamis of 2004 (Sumatra) and 2011 (Tohoku) account for a large share of monetary and human losses in the past 100 years

Banda Aceh, Sumatra, 2004
Source: USGS
Extreme, infrequent and uncertain events

✓ Several uncertainties exist in the hazard and vulnerability components of tsunami risk
✓ When possible, those are to be identified, quantified and when possible reduced
✓ Lack of standards for its comprehensive assessment while potential consequences are formidable
Why is GTM needed?

- Collective and non-exclusive initiative for improved understanding of tsunami hazard and risk
- Highlight tsunami relevance at stakeholders and decision-makers level
- Improvement of analysis methodologies and tools
Current stage

✓ Multi-institutional work on hazard and risk for UNISDR’s GAR
✓ Formal endorsement by multi-lateral institutions involved in DRR and DRM activities
✓ Collaboration with other global hazard and risk assessment initiatives such as GVM, GFP and GEM
GTM’s objectives and mission

✓ Facilitate compatibility and improve probabilistic tsunami hazard and risk analysis methods through the development of standards, guidelines, methods, tools, and identification of key research aspects
GTM’s objectives and mission

✓ Facilitate compatibility and improve *probabilistic tsunami hazard and risk analysis methods* through the development of *standards, guidelines, methods, tools*, and identification of key research aspects

✓ Development of regional and global *reference probabilistic tsunami hazard and risk maps*, as well as *standardized processes for developing local hazard and risk analyses*
GTM’s objectives and mission

✓ Establish *reference pools of experts* for developing and reviewing tsunami hazard and risk assessments from stakeholders
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✓ Establish *reference pools of experts* for developing and reviewing tsunami hazard and risk assessments from stakeholders

✓ The provision of a *consistent input and contribution to multi-hazard risk assessment* through high-level harmonization with initiatives covering other perils
GTM’s objectives and mission

✓ Establish reference pools of experts for completing and developing tsunami hazard and risk assessments from stakeholders

✓ The provision of a consistent input and contribution to multi-hazard risk assessment through high-level harmonization with organizations covering other natural hazards

✓ The interaction with stakeholders to ensure relevance and proper dissemination of results and uncertainty communication to non-scientists

✓ To develop the above products while being mindful of their benefits for society
Contributions to the SFDRR

• Priority 1. Understanding disaster risk
• Priority 2. Strengthening disaster risk governance to manage disaster risk
• Priority 3. Investing in disaster risk reduction for resilience
• Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction
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Global and regional hazard maps
Global and regional hazard maps

1/500 exceedance rate runup height

ThinkHazard!

Probability of Exceedence for project SAMPLE-POIS, seisclass BSPS
Mean value for threshold 1.00m
Physical vulnerability functions

Source: http://www.telegraph.co.uk
Country level tsunami risk maps
Country level tsunami risk maps
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