

# The Indian Ocean Tsunami Warning and Mitigation System

[www.cawcr.gov.au](http://www.cawcr.gov.au)



Diana Greenslade

(Jane Cuneen, Tony Elliot, Jan Sopaheluwakan,  
Geoff Crane, etc.)



**Australian Government**  
**Bureau of Meteorology**

The Centre for Australian Weather and Climate Research  
A partnership between CSIRO and the Bureau of Meteorology



# Outline



- History
- Structure
- Progress to date
- Regional Tsunami Watch Provider (RTWP)
- Current/upcoming activities
  - IOTMS, Perth 2010



# History

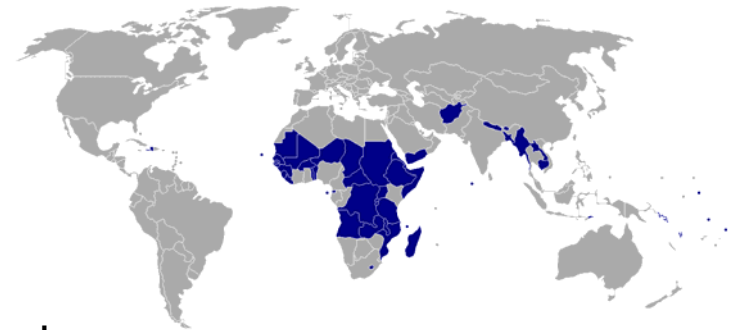


- ICG/IOTWS formed in response to IOT of Dec 26<sup>th</sup> 2004
- Formally established at IOC Assembly June 2005
- 28 Countries:

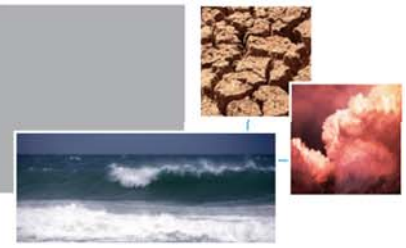
Australia, Bangladesh, Comoros, Djibouti, France, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Myanmar, Oman, Pakistan, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, Timor Leste, United Arab Emirates, United Kingdom, Yemen

- 6 meetings of ICG/IOTWS

- |      |               |                        |
|------|---------------|------------------------|
| I.   | August 2005   | Perth, Australia       |
| II.  | December 2005 | Hyderabad, India       |
| III. | August 2006   | Bali, Indonesia        |
| IV.  | February 2007 | Mombasa, Kenya         |
| V.   | April 2008    | Kuala Lumpur, Malaysia |
| VI.  | April 2009    | Hyderabad, India       |
| VII. | Early 2010    | Indonesia              |



# Structure



- Chair (Jan Sopaheluwakan, Indonesia), vice-chairs (Rick Bailey, Australia and Shailesh Nayak, India)
- Steering Group consisting of
  - Chair and vice-chairs as above, Chair and vice-chairs of each WG.
- Six Working Groups
  - WG1: Seismic measurements, data collection and exchange
  - WG2: Sea level data collection and exchange, including deep-ocean tsunami detection instruments
  - WG3: Risk assessment
  - WG4: Modelling, forecasting and scenario development
  - WG5: Establishment of a system of interoperable advisory and warning centres
  - WG6: Mitigation, preparedness and response

# Progress



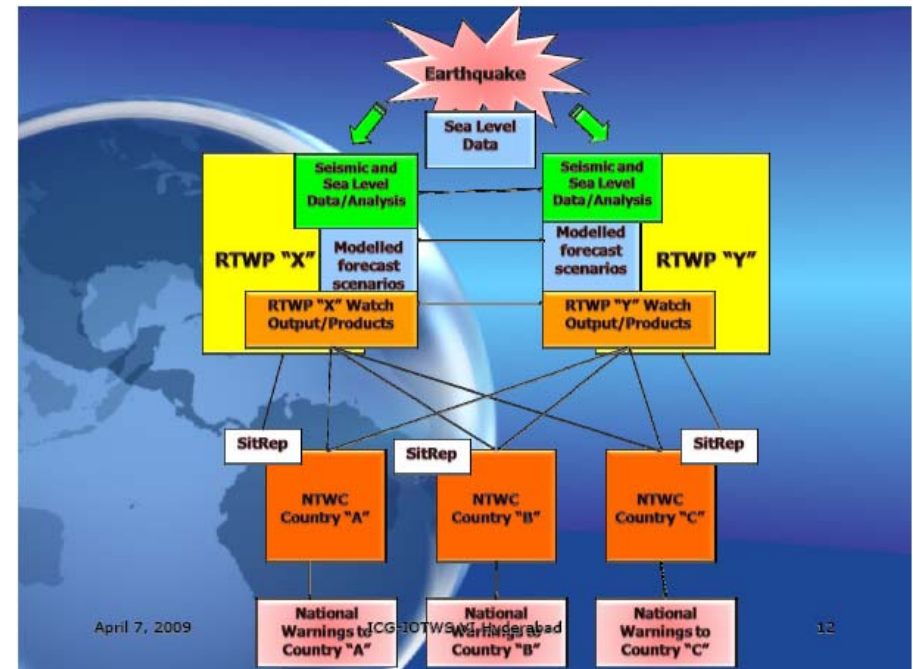
- As of mid-2009
  - ~60 new operational seismic stations
  - ~60 new coastal sea-level stations reporting to GTS
  - ~25 new deep ocean tsunameters
- Development of guidelines for “Tsunami Risk Assessment and Mitigation for the Indian Ocean: Knowing Your Tsunami Risk - and What to Do About it”
- Tsunami Hazard Map for Indian Ocean
- Capacity Building
  - Inundation modelling training conducted for ~80 participants
  - Standard Operating Procedures (SOP) workshops
- Model Standards document adopted



# Regional Tsunami Watch Providers



- IOTWS is a coordinated network of national systems and capacities
- Each Member State has the responsibility to issue warnings within their respective territories
- IO nations can offer to be an RTWP
  - Provide “tsunami watch products” to other nations
  - RTWP has required level of functionality
  - Potential RTWPs
    - Australia, India, Indonesia, Iran, Malaysia, Thailand/ADPC
- Australia, India, Indonesia currently operating at “Service level 1”



# Current and upcoming activities



- **Indian Ocean Wave 09 Exercise on 14th October 2009**
  - Re-enactment of IOT 2004
  - Test and review national responses
  - Test the interoperability of the system
  - Public warning dissemination/emergency response optional
- **Steering Group to review WG structure**
- **WG3**
  - 2 years of palaeotsunami work in the Makran (UNESCAP)
- **WG4**
  - Summary of existing tsunami scenario databases
  - Tsunami model forecast intercomparison
  - IOTMS



# Indian Ocean Tsunami Modelling Symposium



- October 12-15, 2010 (5+ years after IOT 2004)
- Fremantle/Perth, Western Australia



## ▪ Themes

- Modelling of tsunamis in the Indian Ocean
- Indian Ocean 2004 event
- Operational forecasting and warning
- Advances in tsunami modelling techniques
- Tsunami observations
- Inundation modelling
- etc.

