



## Strengthening Tsunami Warning and Emergency Responses: Training Workshop on the Development of Standard Operating Procedures for Indian Ocean and Southeast Asian Countries

**12-16 May 2008  
Bangkok, Thailand**

### AGENDA

#### Lecturers and IOC Tsunami Team:

Bernardo Aliaga, Technical Secretary, ICG/CARIBE-EWS, IOC  
 David Coetzee, Operations Manager, New Zealand Civil Defense and Emergency Management  
 Dr. Jane Cunneen, Programme Specialist, ICG/IOTWS Secretariat, IOC  
 Tony Elliott, Head, ICG/IOTWS Secretariat, IOC  
 Dr. Fauzi, Chief, Seismic Engineering and Tsunami Division, Indonesia Meteorological and Geophysical Agency  
 Sanny Jegillos, Regional Programme Coordinator, UNDP Regional Center in Bangkok  
 Ardito Kodijat, Programme Coordinator, Jakarta Tsunami Information Center, IOC  
 Dr. Laura Kong, Director, International Tsunami Information Centre (ITIC), IOC  
 Dr. Charles McCreery, Director, US NOAA Pacific Tsunami Warning Center  
 Masahiro Yamamoto, Senior Tsunami Advisor, IOC  
 Brian Yanagi, Disaster Management Specialist, ITIC, IOC

ID	Start Time	End Time		Lecturer	Session Chair
<b>1</b>			<b>DAY 1: SESSION 1</b>		
			<b>MORNING: PLENARY</b>		Elliott
<b>1.1</b>	9:00	9:45	Opening Ceremonies	IOC, UNESCO, UNESCAP, ITIC	Elliott
	9:45	10:15	PHOTO and COFFEE / TEA BREAK		
			<b>Tsunami Warning and Emergency Response – Overview</b>		
<b>1</b>			<b>Science, Hazards, and Warning Centres</b>		Cunneen
<b>1.2</b>	10:15	10:30	Introduction and Course Logistics	Elliott	
<b>1.3</b>	10:30	11:00	End-to-End Tsunami Warning and Emergency Response – Overview	Kong	
<b>1.4</b>	11:00	12:00	Earthquake and Tsunami Science for tsunami warning	Fauzi	
	12:00	13:00	LUNCH		
			<b>AFTERNOON: PLENARY</b>		Kodijat, Aliaga
<b>1.5</b>	13:00	13:30	Tsunami Hazards in the Indian Ocean and Southeast Asia	Cunneen	Kodijat

1.6	13:30	14:00	End-to-end Tsunami Warning – Stakeholders, Roles and Responsibilities, and their linkage	Coetzee	
1.7	14:00	15:00	Lessons Learned from past tsunami - 1993 Japan, 1998 Papua Guinea, 2006 Indonesia, 2006 Kurils, 2007 Solomons, 2007 Peru, 2007 Sumatra - Use of timelines for assessing information flow effectiveness	McCreery	
	15:00	15:30	COFFEE / TEA BREAK		
1.8	15:30	15:45	Interim IO Tsunami Advisory Service – Standard Operating Procedures	McCreery	Aliaga
1.9	15:45	16:00	Pacific Tsunami Advisory Service, including South China Sea Interim Service – Standard Operating Procedures	McCreery	
1.10	16:00	16:30	National Tsunami Warning Centres – Overview on Standard Operating Procedures - Daily Operations, Flow Charts, Timelines	Kong	
1.11	16:30	17:00	Discussion: TWC SOPs	McCreery, Kong	
			<b>DAY 2: SESSIONS 2 and 3</b>		
			<b>MORNING: PLENARY</b>		
			<b>Tsunami Warning and Emergency Response – Overview</b>		
2			<b>Emergency Response and Preparedness</b>		
2.1	8:30	9:00	Tsunami "End to End" Emergency Response – Overview on Standard Operating Procedures, including evacuation considerations	Yanagi	Cunneen
2.2	9:00	9:30	Warning Dissemination and Public Alerting mechanisms and technologies – Message Scheduling and Message Content, Warnings through GTS, RANET, and other existing reliable methods	Fauzi	
2.3	9:30	9:45	Warning Dissemination and Public Alerts – Potential roles of the Media – Japan example	Yamamoto	
2.4	9:45	10:00	Summary: Public Alerting - Options Analysis	Coetzee	
	10:00	10:30	COFFEE / TEA BREAK		
2.5	10:30	11:15	Use of Exercise in Tsunami Preparedness: Exercise Development / Regional and National Exercises and Post-Exercise Evaluations, Exercise Pacific Wave 06 and Exercise Pacific Wave 08	Yanagi, Coetzee,	
2.6	11:15	12:00	Tsunami Preparedness - Education and Awareness	Kodijat	
	12:00	13:00	LUNCH		
			<i>Tsunami Warning Centres (TWC) and Tsunami Emergency Response (Disaster Management Organizations (DMO)) meet separately on Days 2-4 for specific topical and technical discussions</i>		
3			<b>AFTERNOON: TSUNAMI WARNING CENTRE SESSION</b>		
3.1.1	13:00	13:45	Fundamental TWC SOPs for a Timely Tsunami Warning	McCreery	Fauzi
3.1.2	13:45	14:30	TWC Operations – Receiving international bulletins and issuing national alerts	Kong	
	14:30	15:00	COFFEE / TEA BREAK		
3.1.3	15:00	16:00	TWC Operations – Active seismic monitoring and real-time earthquake source characterization	Yamamoto	
3.1.4	16:00	17:00	TWC Operations - Sea level monitoring, tsunami confirmation and wave forecast	McCreery	
3			<b>AFTERNOON: TSUNAMI EMERGENCY RESPONSE SESSION</b>		
3.2.1	13:00	13:30	10 Steps to Enable a Successful Tsunami Emergency Response	Yanagi	Jegillos

3.2.2	13:30	14:00	Understanding and acting on TWC Messages	Yanagi	
3.2.3	14:00	14:30	DMO Use of Timelines in Emergency Response	Coetzee	
	14:30	15:00	COFFEE / TEA BREAK		
3.2.4	15:00	15:30	Evacuations: Alerting and Moving People, Inundation maps, Evacuation Routes and Signage, Safe return	Coetzee, Yanagi	
3.2.5	15:30	16:15	Community-based disaster risk management	Jegillos	
3.2.6	16:15	17:00	Case Studies on experiences in developing and using SOPs - Kushimoto, Japan; Bengkulu, Indonesia	Yanagi, Fauzi	
			<b>DAY 3: SESSIONS 4 and 5</b>		
			<b>TSUNAMI WARNING CENTRE SESSION</b>		
<b>4</b>			<b>MORNING</b>		
4.1.1	8:30	9:15	SOP Guidance Manual – Explanation of Templates, Distant and Local Threats, RTWP example	Kong	Elliott
4.1.2	9:15	10:00	PANEL: National Tsunami Warning Centres – Earthquake Monitoring and Warning Issuance – Case Studies on present operations - India, Indonesia, Malaysia	India, Indonesia, Malaysia, Yamamoto	
	10:00	10:30	COFFEE / TEA BREAK		
4.1.3	10:30	11:15	PANEL: National Tsunami Warning Centres – Receiving International bulletins and Warning Issuance - Case Studies on present operations - Kenya, Maldives, Philippines	Kenya, Maldives, Philippines, Yamamoto	
4.1.4	11:15	12:00	Tsunami Event Case Studies – Successes and Continuing Challenges, Discussion	Yamamoto, McCreery, Kong	
	12:00	13:00	LUNCH		
<b>4-5</b>			<b>AFTERNOON</b>		
4.1.5	13:00	13:30	Case Studies - TWC and DMO interactions, Hawaii example between PTWC, Tsunami Advisor Scientists, Emergency Management for distant and local threat cases	Kong	Cunneen
4.1.6	13:30	14:30	SOP Guidance Manual – Explanation of Templates, Distant and Local Threats. Creating SOPs - How to Guidance, including Analysis Processes, Flow Charts and Checklists in SOP	McCreery	
	14:30	15:00	COFFEE / TEA BREAK		
5.1.1	15:00	17:00	Breakout Groups: Using Templates to Create TWC SOPs (Roles & Responsibilities, Routine Operations, Ensuring Data Quality Control and Telecommunications Reliability, and other requirements)	Small Groups	
			<b>TSUNAMI EMERGENCY RESPONSE SESSION</b>		
<b>4</b>			<b>MORNING</b>		
4.2.1	8:30	9:30	Tsunami Emergency Response – Distant Tsunami Threat – Case Studies on present operations - New Zealand, Hawaii	Coetzee, Yanagi	Aliaga
4.2.2	9:30	10:00	Tsunami Emergency Response – Local Tsunami Threat – Case Studies on present operations - Shizuoka, Japan	Yanagi	
	10:00	10:30	COFFEE / TEA BREAK		
4.2.2	10:30	11:30	Tsunami Emergency Response – Local Tsunami Threat – Case Studies on present operations – Padang, Indonesia	Kodijat	
4.2.3	11:30	12:00	SOP Guidance Manual – Explanation of Templates, Distant and Local Threats	Yanagi	
	12:00	13:00	LUNCH		
<b>4-5</b>			<b>AFTERNOON</b>		
4.2.4	13:00	13:30	Creating SOPs - How to Guidance, including Response Processes, Flow Charts and Checklists in SOPs	Coetzee, Yanagi	Elliott
5.2.1	13:30	14:30	Breakout Groups: Using Templates to Create General Roles and Responsibilities for SOPs	Small Groups	
	14:30	15:00	COFFEE / TEA BREAK		

5.2.1	15:00	17:00	Breakout Groups: Using Templates to Create Evacuation Checklists for SOPs	Small Groups	
			<b>DAY 4: SESSIONS 5 and 6</b>		
			<b>TSUNAMI WARNING CENTRE SESSION</b>		
			<b>TSUNAMI EMERGENCY RESPONSE SESSION</b>		
5 - 6			<b>SOP Development - TWC and TER meet separately following same Agenda</b>		
5.1.2 , 5.2.2	8:30	9:00	Creating SOPs: Timeline-driven SOPs	McCreery / Yanagi	Kodijat / Jegillos
5.1.3 , 5.2.3	9:00	10:00	Break out Groups: Using Templates to Develop Timeline of Processes and Actions as SOPs	Small Groups	
	10:00	10:30	COFFEE / TEA BREAK		
5.1.3 , 5.2.3	10:30	12:00	Break out Groups: Using Templates to Develop Timeline of Processes and Actions as SOPs	Small Groups	
	12:00	13:00	LUNCH		
5.1.3 , 5.2.3	13:00	14:30	Break out Groups: Using Templates to Develop Timeline of Processes and Actions as SOPs	Small Groups	
	14:30	15:00	COFFEE / TEA BREAK		
5.1.4 , 5.2.4	15:00	16:30	Presentation of Break out Group SOPs	Break out Group Chairs	
6.1	16:30	17:00	Table Top Exercise – Background and Scenarios for Day 5	Coetzee / Kong	
	19:00		Dinner and Cultural Show, Amari Watergate Hotel		
			<b>DAY 5: SESSIONS 6 and 7, PLENARY</b>		
6 - 7			<b>Table Top Exercise and Summary</b>		
6.2	8:30	9:00	Table Top Exercise Set-up according to Stakeholder Warning and Response Groups	Coetzee / Kong	Aliaga
6.3	9:00	10:00	Table Top Exercise – Stakeholder Break out Group discussions according to Timeline	Small Groups	
	10:00	10:30	COFFEE / TEA BREAK		
6.3	10:30	11:00	Table Top Exercise – Stakeholder Break out Group discussions according to Timeline	Small Groups	
6.4	11:00	12:00	Table Top Exercise – Stakeholder Responses according to Timeline	Break out Group Chair	
	12:00	13:00	LUNCH		
6.4	13:00	14:30	Table Top Exercise – Stakeholder Responses according to Timeline	Break out Group Chair	
	14:30	15:00	COFFEE / TEA BREAK		
6.5	15:00	16:00	Table Top Exercise – Evaluation and Next Steps	Coetzee / Kong	
6.6	16:00	16:30	Workshop Summary Discussion	All	
7			<b>CLOSING CEREMONIES</b>		Elliott
	16:30	16:45	Presentation of Certificates	All	
	16:45	17:00	Closing		