



## UNESCO-IOC

# Regional Workshop on Standard Operating Procedures for Tsunami Warning and Emergency Response for East African and Western Indian Ocean Countries

**15-19 November 2010**  
**Blue Pearl Hotel**  
**Dar es Salaam, Tanzania**

### Lecturers:

Tony Elliott, Head of ICG/IOTWS Secretariat, UNESCO IOC Tsunami Unit  
Masahiro Yamamoto, Senior Advisor, UNESCO IOC Tsunami Unit  
Dr. Laura Kong, Director, International Tsunami Information Centre, UNESCO IOC - NOAA  
Amir Mohyuddin, Director, National Disaster Management Authority, Pakistan

## AGENDA

Session	Start Time	End Time	T W C	T E R	TOPIC	Lecturer
<b>1-3</b>					<b>DAY 1: SESSIONS 1-3</b>	
<b>1</b>					<b>MORNING: PLENARY</b>	
<b>1.1</b>	9:00	9:30			Opening Ceremonies	TMA/IOC
<b>1.2</b>	9:30	9:40			Course Overview	Elliott
<b>1.3</b>	9:40	9:45			Logistics and other administrative items	Elliott
<b>2</b>					<b>Tsunami Warning and Emergency Response – Overview</b>	
					<b>Science, Hazards, and Warning Centres</b>	
<b>2.1</b>	9:45	10:30			End-to-End Tsunami Warning and Emergency Response – Overview	Kong
	10:30	11:00			COFFEE / TEA BREAK	
<b>2.2</b>	11:00	12:00			Earthquake and Tsunami Science for tsunami warning	Yamamoto
<b>2.3</b>	12:00	12:45			End-to-end Tsunami Warning – Stakeholders, Roles and Responsibilities, Standard Operating Procedures, and their linkage	Mohyuddin
	12:45	14:00			LUNCH	
					<b>AFTERNOON: PLENARY</b>	
<b>3</b>					<b>Country Standard Operating Procedures</b>	
<b>3.1</b>	14:00	15:30			Country Presentations (Comoros, Kenya, Mauritius, Mozambique, Seychelles, Somalia, South Africa, Tanzania, Yemen)	Countries
	15:30	16:00			COFFEE / TEA BREAK	
	16:00	17:00			Country Presentations continued	Countries

				<b>DAY 2: SESSION 4</b>	
				<b>MORNING: PLENARY</b>	
<b>4</b>				<b>Tsunami Warning and Emergency Response – Overview</b>	
				<b>Tsunami Warning</b>	
<b>4.1</b>	9:00	9:30		The Indian Ocean Tsunami Warning and Mitigation Systems (IOTWS)	Elliott
<b>4.2</b>	9:30	10:30		Lessons Learned from past tsunami. Use of timelines for assessing information flow effectiveness	Kong
	10:30	11:00		COFFEE / TEA BREAK	
<b>4.3</b>	11:00	11:30		National Tsunami Warning Centres Standard Operating Procedures - Overview	Kong
<b>4.4</b>	11:30	12:00		Discussion: TWC SOPs	All
				<b>Emergency Response and Preparedness</b>	
<b>4.5</b>	12:00	12:45		Tsunami Emergency Response Standard Operating Procedures - Overview	Mohyuddin
	12:45	14:00		LUNCH	
				<b>AFTERNOON: PLENARY</b>	
<b>4.6</b>	14:00	14:45		Warning Dissemination and Public Alerting mechanisms and technologies – Message Scheduling and Message Content, Warnings through GTS, RANET, and other existing reliable methods	Kong
<b>4.7</b>	14:45	15:30		Warning Dissemination and Public Alerts – Responsibilities to decision-makers, media, and the public. – Japan and US examples	Yamamoto
	15:30	16:00		COFFEE / TEA BREAK	
<b>4.8</b>	16:00	17:00		Breakout Groups: Information Flow SOPs - Media and Public Information	All
				<b>DAY 3: SESSIONS 4-5</b>	
				<b>MORNING: PLENARY</b>	
<b>4.9</b>	9:00	10:00		Use of Exercises in Tsunami Preparedness: Exercise Development / Regional and National Exercises and Post-Exercise Evaluations, Exercise Indian Ocean Wave '09	Elliott
<b>4.10</b>	10:00	10:30		Tsunami Preparedness - Education and Awareness	Mohyuddin
	10:30	11:00		COFFEE / TEA BREAK	
	11:00	11:45		Indian Ocean Interim Advisory Service (PTWC and JMA) SOPs	Yamamoto
<b>4.11</b>	11:45	12:45		Tsunami Warning Decision Support Tools: Earthquake Monitoring, PTWC SMS Alerts, Historical Databases, TideTool, IOC Sea Level Monitoring	Kong
	12:45	14:00		LUNCH	
				<b>DAYS 3 and 4: TWC and TER (DMO) MEET SEPARATELY FOR SPECIFIC TOPICAL AND TECHNICAL DISCUSSIONS</b>	
<b>5</b>				<b>DAY 3: TSUNAMI WARNING CENTRE SESSION</b>	
				<b>AFTERNOON</b>	
<b>5.1.1</b>	14:00	14:45		TWC Operations – Active seismic monitoring and real-time earthquake source characterization	Yamamoto
<b>5.1.2</b>	14:45	15:30		TWC Operations - Sea level monitoring, tsunami confirmation and wave forecast	Elliott
	15:30	16:00		COFFEE / TEA BREAK	
<b>5.1.3</b>	16:00	17:00		SOP Guidance - How to Guidance, including Analysis Processes, Flow Charts and Checklists. Fundamental TWC SOPs for a Timely Tsunami Warning: TWC Operations - Tsunami Event Activity Timelines: Cases 1-4 – Centres with / without real-time seismic processing	Kong

<b>5-6</b>				<b>DAY 4: TSUNAMI WARNING CENTRE SESSION</b>	
<b>5.1.4</b>	9:00	9:45		Earthquake Seismology	Yamamoto
<b>5.1.5</b>	9:45	10:30		SOP Guidance - How to Guidance, including Analysis Processes, Flow Charts and Checklists in SOP	Yamamoto
	10:30	11:00		COFFEE / TEA BREAK	
<b>5.1.6</b>	11:00	11:30		Creating SOPs: Timeline-driven SOPs – Breakout instructions	Kong
<b>5.1.7</b>	11:30	12:45		Break out Groups: Using Templates to Develop Timeline of Processes and Actions as SOPs (Messages, Checklists, Information Dissemination)	Small Groups
	12:45	14:00		LUNCH	
<b>5.1.8</b>	14:00	15:30		Break out Groups: (cont'd)	Small Groups
	15:30	16:00		COFFEE / TEA BREAK	
<b>5.1.9</b>	16:00	16:45		Presentation of Break out Group SOPs	Breakout Group Chairs
<b>6.1</b>	16:45	17:00		Table Top Exercise – Background and Scenarios for Day 5	Exercise Controller
<b>5</b>				<b>DAY 3: TSUNAMI EMERGENCY RESPONSE SESSION</b>	
				<b>AFTERNOON</b>	
<b>5.2.1</b>	14:00	14:45		Understanding and acting on TWC Messages, DMO Actions and Use of Timelines in Emergency Response	Elliott
<b>5.2.2</b>	14:45	15:30		Evacuations: Alerting and Moving People, Inundation maps, Evacuation Routes and Signage, Safe return	Mohyuddin
	15:30	16:00		COFFEE / TEA BREAK	
<b>5.2.3</b>	16:00	16:30		Community-level preparedness and response	Mohyuddin
<b>5.2.4</b>	16:30	17:00		SOP Guidance Manual – Explanation of Templates, Distant and Local Threats	Kong
<b>5-6</b>				<b>DAY 4: TSUNAMI EMERGENCY RESPONSE SESSION</b>	
				<b>MORNING</b>	
<b>5.2.5</b>	9:00	9:30		Tsunami Emergency Response – Distant and Local Tsunami Threat – Wakayama, Japan Case Study	Kong
<b>5.2.6</b>	9:30	10:00		Creating SOPs - How to Guidance, including Response Processes, Flow Charts and Checklists in SOPs – Breakout Instructions	Kong
<b>5.2.7</b>	10:00	10:30		Further Breakout Instructions – Pakistan example	Mohyuddin
	10:30	11:00		COFFEE / TEA BREAK	
<b>5.2.8</b>	11:00	12:00		Breakout Groups: Using Templates to Create General Roles and Responsibilities for SOPs	Small Groups
<b>5.2.9</b>	12:00	12:45		Breakout Groups: Using Templates to Create Evacuation Checklists for SOPs	Small Groups
	12:45	14:00		LUNCH	Small Groups
<b>5.2.10</b>	14:00	14:30		Creating SOPs: Timeline-driven SOPs	Kong
<b>5.2.11</b>	14:30	15:30		Break out Groups: Using Templates to Develop Timeline of Processes and Actions as SOPs	Small Groups
	15:30	16:00		COFFEE / TEA BREAK	
<b>5.2.12</b>	16:00	16:45		Presentation of Break out Group SOPs	Breakout Group Chairs
<b>6.1</b>	16:45	17:00		Table Top Exercise – Background and Scenarios for Day 5	Exercise Controller

<b>6-7</b>				<b>DAY 5: SESSIONS 6 and 7, PLENARY</b>	
<b>6</b>				<b>Table Top Exercise and Summary</b>	
<b>6.2</b>	9:00	9:45		Table Top Exercise Set-up according to Stakeholder Warning and Response Groups	Exercise Controller
	9:45	10:00		COFFEE / TEA BREAK	
<b>6.3</b>	10:00	12:45		Table Top Exercise	Small Groups
	13:00	14:00		LUNCH	
<b>6.4</b>	14:00	14:30		Table Top Exercise - Post exercise report preparation	Small Groups
<b>6.5</b>	14:30	15:30		Table Top Exercise – Evaluation	Breakout Group Chairs
	15:30	15:45		COFFEE / TEA BREAK	
<b>6.6, 6.7</b>	15:45	16:30		Table Top Exercise – Summary and Next Steps Workshop Summary Discussion	Exercise Controller All
<b>7</b>				<b>CLOSING CEREMONIES</b>	
	16:30	16:45		Presentation of Certificates	All
	16:45	17:00		Closing	IOC, TMA