



UNESCO – IOC / NOAA INTERNATIONAL TSUNAMI INFORMATION CENTER (ITIC) ITIC TRAINING PROGRAMME INTERNATIONAL (ITP-INTL)

ITP-Vanuatu: Strengthening Tsunami Warning and Emergency Response Using the PTWC Enhanced Products for National Tsunami Threat Decision-Making Port Vila, Vanuatu, 5-8 April 2016

Trainers

Dr. Laura Kong, Director, ITIC, UNESCO IOC - NOAA, Hawaii, USA

Rajendra Prasad, Programme Officer for DRR/TW, IOC Tsunami Unit, Fiji

Masahiro Yamamoto, Senior Advisor (retired), IOC Tsunami Unit, Japan

Training Overview

The training workshop will focus on tsunami warning and emergency response and the use of the PTWC Enhanced Products for tsunami threat decision-making, with specific attention to the standard operating procedures (SOPs) of Vanuatu. Topics will include warning and response SOPs and challenges, warning decision support tools, warning messages and alerting, evacuation concepts and planning, and awareness strategies. Over the last 10+ years, with improvements in data quality, quantity, and real-time availability, PTWC's response time has dropped significantly from an hour to 5-10 minutes for tsunami events. At the same time, with each great earthquake and tsunami since 26 December 2004 helping to increase scientific understanding, better techniques have been developed to quickly characterize the earthquake and numerically model the tsunami. In 2014, the PTWC implemented Enhanced Products for the PTWS that now include wave amplitude forecasts in both text and graphical formats, and that require each country to explicitly assign Warning / Watch status in their own messages to their coasts. Accordingly, the goal of this training is to increase the capacity of first responder operational staff to efficiently and effectively respond to tsunamis.

PROVISIONAL AGENDA

Sess ion	Start Time	End Time	Topic	Speaker
1-3			Tuesday, 5 April 2016	
			TSUNAMI WARNING AND EMERGENCY RESPONSE	
			MORNING	
			Opening, ICG/PTWS-XXVI, Tsunami Warning	
	8:30	9:00	Registration	Vanuatu, IOC
1.1	9:00	9:30	Opening Ceremonies	ITIC, IOC, Vanuatu
	9:30	9:50	GROUP PHOTO	
1.2	9:50	10:10	Logistics, Administrative Items, Introductions, Course Overview	Rajendra Prasad, IOC

2.1	10:10	10:30	ICG/PTWS-XXVI Outcomes, specifically for the Pacific Islands	Prasad
	10:30	11:00	COFFEE / TEA BREAK	
2.2	11:00	11:45	Responding Rapidly and Effectively: Tsunami Warning and Emergency Response Requirement and Timeline-driven Standard Operating Procedures (SOPs)	Laura Kong, ITIC
2.3	11:45	12:30	Tsunami Warning Center SOPs: What do Tsunami Warning Centers (TWCs) provide to Tsunami Emergency Response (TER) agencies?	Masahiro Yamamoto, IOC
	12:30	13:30	LUNCH	
			AFTERNOON	
			Science and Hazard, PTWC Enhanced Products, Vanuatu SOPs	
2.4	13:30	14:00	Science of Earthquakes and Tsunami for Tsunami Warning	Yamamoto
2.5	14:00	14:30	Tsunami Hazard Scenarios around the Pacific	Kong
3.1	14:30	14:45	Pacific Tsunami Warning Center (PTWC) New Enhanced Products: Overview - What, Why, Criteria, Formats	Kong
	14:45	15:00	COFFEE / TEA BREAK	
3.2	15:00	15:30	Pacific Tsunami Warning Center (PTWC) New Enhanced Products: Public Products and Staging	Kong
3.3	15:30	16:00	Vanuatu TWC and TER SOPs using PTWC Enhanced Products	VMGD, NDMO
3.4	16:00	16:30	Discussion: Vanuatu SOPs - warning, alerting, evacuation - status, gaps, needs	Prasad, All
4-5			Wednesday, 6 April 2016	
			TSUNAMI WARNING AND EMERGENCY RESPONSE	
			MORNING	
			Tsunami Emergency Response: Challenges, Preparedness	
4.1	9:00	9:15	PTWS video: Tsunami Warning!	Prasad
4.2	9:15	10:00	What do TERs do with TWC information? Challenges in Alerting, Evacuation, and Safe-to-Return (All-Clear)	Kong
4.3	10:00	10:30	Building Awareness & Community Preparedness – Being TsunamiReady	Kong
	10:30	11:00	COFFEE / TEA BREAK	
4.4	11:00	11:45	Improving Response - Managing Reliable and Unreliable Information (Activity)	Prasad, All
4.5	11:45	12:30	Improving Response - Knowing What Happens When (Activity)	Yamamoto, All
	12:30	13:30	LUNCH	
			AFTERNOON	
			PTWC TWFP/NTWC PRODUCTS, NATIONAL TSUNAMI THREAT DECISION-MAKING SOPs,	
5.1	13:30	14:00	16 September 2015, M8.3 Tsunami – PTWS and PTWC summary	Prasad
5.2	14:00	14:15	Pacific Tsunami Warning Center (PTWC) New Enhanced Products - Overview - What, Why, Criteria, Formats; TWFP Products and Staging	Kong
5.3	14:15	14:45	PTWC Enhanced Products - Explanation of Each Product: Text, Forecast Polygon Map, Graphical Deep-Ocean Energy, Coastal Forecast, Forecast Tables, KMZ file	Kong
	14:45	15:00	COFFEE / TEA BREAK	
	15:00	15:15	PTWC Enhanced Products - Explanation of Each Product (cont'd)	Kong
	15:15	15:45	TWC and TER SOPs: Overview of Stakeholder Roles and Coordination, Event Operations, SOP documents and examples	Yamamoto
5.5	15:45	16:30	TWC and TER SOPs for PTWC Enhanced Products: Guidance for Warning and Evacuation, Flow Charts, Criteria Tables (EQ Magnitude and Forecast thresholds, Land and Marine Threats), Timeline-driven SOP, Message Templates	Kong

Sess ion	Start Time	End Time	Topic	Speaker
6			Thursday, 7 April 2016	
			NTWC OPERATIONS	
			MORNING	
			TWC Operations - Earthquake and Tsunami Monitoring and Analysis, Tsunami Warning Decision Support Tools	
6.1	9:00	9:45	TWC Operations: Real-time Earthquake Detection and Fast Source Characterization – Methods to determine Magnitude and Fault Mechanism (W-Phase CMT), Limitations and Challenges	Yamamoto
6.2	9:45	10:30	TWC Operations: Sea Level Monitoring - Methods, Instruments, Limitations, Challenges	Yamamoto
	10:30	11:00	COFFEE / TEA BREAK	
6.3	11:00	11:30	TWC Operations: Travel Time Forecasting - Methods, Limitations, Uncertainty, Sensitivity Studies (Location, Depth, Magnitude)	Yamamoto
6.4	11:30	12:30	Demonstration Training: Decision Support Tools for Monitoring, Detection, Assessment – Earthquakes: Real-time Earthquake Display (CISN), USGS web site (CMT, ShakeMap, PAGER); Tsunami: Sea Level Monitoring (IOC web site, TideTool with Tsunami Travel Times), RIFT Tsunami Scenarios	Kong
	12:30	13:30	LUNCH	
			AFTERNOON	
	13:30	14:30	Demonstration Training: Decision Support Tools (cont'd)	Kong
	14:30	14:45	COFFEE / TEA BREAK	
6.5	14:45	15:45	TWC Operations: Wave Amplitude Forecasting – Methods, Limitations, Uncertainty, Sensitivity Studies (Location, Depth, Magnitude)	Kong
6.6	15:45	16:30	Improving Response 2 – What Happens When, including TWC operations (Activity)	Prasad, All
7-8			Friday, 8 April 2016	
			NTWC DECISION-MAKING	
			MORNING	
			Tsunami Hazard Scenarios, Tsunami Exercise	
7.1	9:00	10:30	Tsunami Hazard Scenarios around the Pacific - Understanding the PTWC TWFP Products	Kong
	10:30	11:00	COFFEE / TEA BREAK	
7.2	11:00	12:30	Tsunami Table Top Exercise - Decision-making using PTWC Enhanced Products - Regional Scenario	Prasad, Vanuatu
	12:30	13:30	LUNCH	
			AFTERNOON	
			Tsunami Exercise, Closing	
7.3	13:30	14:45	Tsunami Table Top Exercise - Decision-making using PTWC Enhanced Products - Distant Scenario	Yamamoto, Vanuatu
	14:45	15:00	COFFEE / TEA BREAK	
7.4	15:00	15:30	Discussion: 1. Vanuatu Tsunami Warning Using the PTWC Enhanced Products, 2. Vanuatu Next Steps	Vanuatu, IOC, ITIC
8	15:30	16:00	Closing Ceremonies	Vanuatu, IOC, ITIC