



Summary Report on the Training Workshop on Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System

WMO RTC Nanjing, China
9-11 June 2014

SUMMARY REPORT

TRAINING WORKSHOP ON SYNERGIZED STANDARD OPERATING PROCEDURES (SSOP) FOR COASTAL MULTI-HAZARDS EARLY WARNING SYSTEM

Nanjing, China, 9 – 11 June 2014

1. Introduction

The workshop was conducted at the World Meteorological Organization (WMO) Regional Training Center (RTC) in Nanjing, China on 9-11 June 2014. It was held under Activity 2.1 of the SSOP Work Plan, “Conduct training of users and issuers in the interpretation and preparation of EWS SOPs and products for decision-making, media, and communications” which is one item under Activity 2 of the Work Plan, “Enhance the performance and effectiveness of SOPs for coastal multi-hazard Early Warning System in the Member Countries of Typhoon Committee (TC) and Panel on Tropical Cyclones (PTC) through capacity building.”

The training consisted of lectures, presentations and training scenarios followed by very active discussions among participants, representatives of the beneficiary countries, and lecturers/trainers.

The Workshop was attended by 33 participants from the beneficiary countries: Bangladesh (4); China (4); India (1); Lao PDR (1); Malaysia (1); Maldives (4); Myanmar (4); Pakistan (3); Philippines (3); Sri Lanka (2); Thailand (4); Viet Nam (2). Cambodia was the only SSOP project beneficiary country that did not send any representatives due to lack of available human resources. The TC Secretariat had requested the countries to select one expert from the following four areas: decision-makers, disaster managers, media professionals, and warning issuers. Most countries were represented by a lower number of participants in relation to what had been requested by the TC Secretariat and many had multiple experts from one requested area and none from others. Appendix I contains the list of participants.

2. Opening Ceremony

The opening ceremony was conducted at the RTC Nanjing at 09:00 on 9 June 2014. The speakers were introduced by Professor ZHENG Youfei, Executive Deputy Director of WMO Regional Training Centre Nanjing. The opening speeches were delivered by Mr. Olavo Rasquinho, Secretary of TC; Mr. Imran Akram, meteorologist of PTC Secretariat, on behalf of Mr. Arif Mahmood, Secretary of PTC; Mr. Samuel Muchemi, representative of WMO. The welcome address was delivered by Professor Jiang Jianqing, President of Nanjing University of Information Science and Technology (NUIST). Last minute difficulties prevented Mr. Alf Blikberg representing UN Environmental and Social Commission of Asia and the Pacific (ESCAP) from participating in the training workshop.

3. Agenda

The programme, according to the Agenda (Appendix II - Agenda), was mostly accomplished. The lecturers provided excellent presentations, but some were not as focused on Standard Operating Procedures as the original agenda had expected. Non-foreseen presentations were also provided: one by Mr. Tahir ISLAM, representative of Pakistan, on the Disaster Management System in Pakistan and one by Ms. DAI Qing, representative of China, on the Common Alert Protocol.

The lectures and training were distributed in modules: Module 1 - Overview/Introduction; Module II - Social/cultural aspects of EWS; Module 3 – Coastal Hazards/Monitoring and Warnings; Module 4 – Communications/Dissemination; Module 5 – After actions review; Module 6 – Lessons Learned; Module 7 – Development of SOP scenarios; and Module 8 – Panel/Group Discussions.

4. Lecturers/Trainers

Nine specialists from the following nine different organizations delivered lectures based upon the topics listed in the agenda: Asia-Pacific Broadcasting Union (ABU); Asian Disaster Preparedness Center (ADPC); China Meteorological Administration (CMA); Intergovernmental Oceanographic Commission (IOC) of UNESCO; Shanghai Typhoon Institute (STI); Shanghai Meteorological Service (SMS); International Research Institute of Disaster Science University of Tohoku (IRIDeS); Typhoon Committee Secretariat (TCS); and World Meteorological Organization (WMO).

A CD with the presentations was provided to all participants. The presentations were also posted on the SSOP project Webpage of Typhoon Committee Website: (<http://www.typhooncommittee.org/SSOP/indexSSOP.html>).

5. Development of SOP Scenarios and Panel/Group Discussions

On Day 3 of the workshop, after two days of lectures, an exercise was carried out according to instructions provided by Mr. James Weyman, SSOP Project Manager/ Technical Advisor. These were previously discussed with the lecturers and TCS. The scenario consisted of the approach of a tropical cyclone three, two, and one days before landfall and then when the cyclone made landfall in the country. The participants were requested to analyze the situation, make decisions, conduct operations, and establish appropriate Standard Operating Procedures for the situation at various time periods.

The participants and lecturers/trainers were distributed, on the morning of Day 3 into three previously established groups, according to their areas of specialization:

- Group I** – Warning preparers (meteorologists, hydrologists, and tsunami specialists);
- Group II** – Disaster Risk Reduction (DRR) and decision makers; and
- Group III** – Media

Each group met in different rooms and discussed the meteorological scenario and respective actions with the assistance of the lecturers for approximately one and a half hours (11:00-12:30). A rapporteur took notes during each group's discussions. Appendix III contains the composition of each group and the notes from each group. In the afternoon for one hour (20 minutes for each group), the respective rapporteurs provided the conclusions their group had reached.

Following these reports presentations, separate meetings were held by three new, integrated groups - each one was composed of a mix of warning issuers, DRR/decision makers and media professionals (Appendix IV – Composition of the Mixed Groups). In these meetings, the same scenario was used as in the morning session but the focus was on the role and use of multi-hazard SOPs and Memorandum of Understanding (MOU) for integrated and collaborative actions and procedures among the various stakeholders. The groups were requested to give particular attention to SOPs.

Following the discussions in the separate meetings, the participants rejoined each other in one group and were briefed on the results of the separate meetings. A final group discussion was carried out and a summary was drafted.

6. Conclusions and Recommendations from the Groups Discussions

Conclusions:

- a. SOPs for the Early Warning System (EWS) are tools that allow officials to make quick decisions by avoiding wasted time in the production and dissemination of warnings.
- b. The concept of SOPs is not yet widely adopted in the SSOP project beneficiary countries.
- c. All of the beneficiary countries of the SSOP project have lists of procedures regarding the production and dissemination of warnings, nevertheless only a few have adopted the designation "Standard Operating Procedures". In addition, not all of these lists of procedures follow the format recommended by the publication "*Guidelines for Creating a Memorandum of Understanding and a Standard Operating Procedure between a National Meteorological or Hydro-meteorological Service and a Partner Agency*", WMO-No.1099 PWS-26 nor do some of them contain all of the information, details, and coordination required.
- d. Some SSOP project beneficiary countries have not yet been adopted the practice of establishing Memorandums of Understanding (MoU) between warning issuers and media organizations, between warning issuers and DRR, and between DRR and the media.
- e. In some recent disasters caused by tropical cyclones, despite reliable forecasts, the lack of well-structured SOPs to describe and ensure completion of the warning dissemination system to "the last mile" has contributed to a large number of victims (e.g., Severe Tropical Depression Washi/Sendong, Typhoon Haiyan/Yolanda).

Recommendations

From the discussions and inputs during the workshop, it can be inferred that the following should be addressed in the preparation, coordination, integration, standardization, and documentation of SOPs/MOUs prior to any event/disaster.

NOTE: The items and issues below are important to consider, but it is equally important to ensure that they are not only considered **but coordinated and included into SOPs/MOUs**. This must be done to ensure the same, standardized, efficient, integrated actions each time an event occurs and everyone understands their role and responsibilities. The SOPs/MOUs can also be used as a training tool to teach people what actions need to be taken in every situation.

- a. Identifying stakeholders (NMHSs, NDMOs, Media, etc.) involved in EWS based upon the type of hazard/disaster.
- b. Establishing coordinated SOPs in the Local Government Units (LGUs) to identify and to control the links with local communities (cultural and religious aspects in the communities).
- c. Adopting a timeline concept in drafting certain type of SOPs considering different hazards.
- d. Warning bulletins for specialized areas (e.g., fisheries, port authority, and tourism).
- e. Disseminating warnings through multiple-mode methods including conventional and non-conventional indigenous modes.
- f. Standardizing warning information for wider dissemination to multi-users (e.g., using Common Alert Protocol-CAP).
- g. Rapid notification through automation.
- h. In case of evacuation, identifying the need to explain to the people the reasons for that evacuation decision (people from villages frequently do not understand why they have to evacuate), including ideas, written scripts to be used, and guidelines to ensure standardized explanations are used in different areas, at different times, and for different hazards.
- i. Providing evacuation orders at least 24 hours (or some specific guideline) before the hazard/disaster hits incorporated into a documented timeline.
- j. Addressing, coordinating, and documenting situations when evacuations may not be appropriate prior to an event.
- k. Identifying and documenting standard methods and procedures for local communities to provide information to government entities and media on the evolution and consequences of each hazard/disaster.
- l. Including coordinated colored coding and graphical information for public warnings (i.e., warning services together with the coordinating body, NDMO, and the media).
- m. Developing and documenting plans to identify procedures to research knowledge of the needs of the populations that will likely be affected.
- n. Placing in situ equipment for media coverage, rescue, and recovery of possible victims (roads may become blocked).

- o. Establishing and coordinating SOPs documenting the rules for news bulletins, news updates, and special programmes in media.
- p. Using layman's language for public and media, and graphical information whenever possible for TV and newspapers.
- q. Identifying joint press conferences involving high level officers of NMHSs and NDMOs.
- r. Establishing SOPs for exceptional situations which dictate the rules and procedures for addresses to the public by high level government officers (Prime Minister/President).
- s. Numbering warning bulletins chiefly for media and others to prevent misunderstanding.
- t. Constant updating the information for media describing times and procedures.
- u. Mobilizing reporters in areas foreseen to be affected by the hazard or disaster.
- v. Developing MoUs between media organizations and official sources which focus on information provided, times of dissemination, official sources, accountability and transparency.

7. Closure

At the closure ceremony, the representatives of the beneficiary countries and the lecturers/trainers expressed their opinion on the results of the workshop and stressed the opportunity and usefulness of the SOP/MOU themes that were discussed.

The participants and lecturers were also requested to consult and comment on the initial draft framework of the *Manual on SSOP for Coastal Multi-hazards Early Warning System*, prepared by the Project Manager/Technical Advisor, Mr. James Weyman. Some examples of the Manual were distributed and the participants were informed of the process/method to consult, make comments, or to seek information. They were also informed that other documents related to the project can be found at

<http://www.typhooncommittee.org/SSOP/indexSSOP.html>

Typhoon Committee Secretariat

Macao, 28 July 2014

List of Appendixes:

Appendix I – List of Participants

Appendix II – Agenda

Appendix III – Day 3 Morning Groups' Scenario, Composition, and Discussions

Appendix IV – Day 3 Afternoon Groups' Composition

APPENDIX I – LIST OF PARTICIPANTS

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APPENDIX II - AGENDA

Training Workshop on Synergized Standard Operating Procedures (SSOP) for Coastal Multi-hazards Early Warning System

09 – 11 June 2014

WMO Regional Training Centre (RTC)
Nanjing, China

Time (min)	Start	End	Agenda	Speakers/Moderators
Day 1 (Monday, 09 June 2014)				
30	08:30	09:00	REGISTRATION	
			Opening Statements	
10	09:00	09:10	Typhoon Committee Secretary	Mr. Olavo Rasquinho
10	09:10	09:20	Panel on Tropical Cyclones Representative	Mr. Imran Akram
10	09:20	09:30	WMO Representative	Mr. Samuel Muchemi
10	09:30	09:40	ESCAP Representative	Mr. Alf Blikberg
10	09:40	09:50	President, Nanjing University of Information	Prof. Jiang Jianqing
10	09:50	10:00	Group Picture	
20	10:00	10:20	BREAK	
Module 1		Overview/Introduction		
15	10:20	10:35	Introduction to Workshop and Agenda	Mr. Olavo Rasquinho
15	10:35	10:50	Overview of SSOP Project	Mr. Olavo Rasquinho
20	10:50	11:10	Overview of Early Warning System	Mr. Atiq K. Ahmed
20	11:10	11:30	Overview Multi-Hazards Aspects of Early	Mr. Atiq K. Ahmed
60	11:30		Relationships – Coordination/Collaboration	Mr. Samuel Muchemi
			Importance and Purpose of developing	Mr. Samuel Muchemi
			Structure of Memorandums of Understanding	Mr. Samuel Muchemi
			Synergized SOPs	Mr. Samuel Muchemi
		12:30	Impact-Based Forecasting and Risk-Based	Mr. Samuel Muchemi
60	12:30	13:30	LUNCH BREAK	

Time (min)	Start	End	Agenda	Speakers/Moderators
Day 1 (Monday, 09 June 2014) continued				
Module 2		Social/Cultural Aspects of Early Warning		
60	13:30		Warning Wording, Message Content, and Terms	Mr. Russell Isaac/Ms. Natalia Ilieva
			Social Aspects of Warnings Responses	Mr. Russell Isaac/Ms. Natalia Ilieva
		14:30	Aspects of Effective Communications	Mr. Russell Isaac/Ms. Natalia Ilieva
Module 3		Coastal Hazards - Monitoring and Warnings		
<i>Tropical Cyclones – Focus on SOPs</i>				
40	14:30		Causes, Movement, Timing, and Risk Areas	Mr. LI Qingqing
		15:10	Specific and Relevant Needs of the Users	Mr. LI Qingqing
20	15:10	15:30	BREAK	
50	15:30		Warning Center Technical SOPs Ideas and Roles	Mr. LI Qingqing
			Inter-Agency Integrated, Coordinated SOPs Idea	Mr. LI Qingqing
		16:20	SOP Lessons Learned from the Tropical Cyclone	Mr. LI Qingqing
<i>Other Coastal Hazards - High Winds, High Surf, Flooding, and Others Focus on SOPs</i>				
50	16:20		Causes, Timing, and Risk Areas	Mr. Zhang Jianlei
			Specific and Relevant Needs of the Users	Mr. Zhang Jianlei
			Warning Center Technical SOPs Ideas and Roles	Mr. Zhang Jianlei
		17:10	Inter-Agency Integrated, Coordinated SOPs	Mr. Zhang Jianlei
20	17:10	17:30	Communication skills: Before, During and After	Mr. Samuel Muchemi

Time (min)	Start	End	Agenda	Speakers/Moderators
Day 2 (Tuesday, 10 June 2014)				
Tsunami – Focus on SOPs				
90	09:00		Causes, Propagation, Timing, and Risk Areas	Mr. Tony Elliott
			Specific and Relevant Needs of the Users	Mr. Tony Elliott
			Warning Center Technical SOPs Ideas and Roles	Mr. Tony Elliott
			Inter-Agency Integrated, Coordinated SOPs Ideas	Mr. Tony Elliott
		10:30	SOP Lessons Learned from Tsunami Program	Mr. Tony Elliott
20	10:30	10:50	BREAK	
Multi-Hazard Approach				
30	10:50	11:20	Similarities and Differences	Mr. Atiq K. Ahmed
30	11:20	11:50	Hazard Matrix of Agencies Actions vs. Time	Dr. Yuichi Ono
Module 4		Communications/Dissemination		
Media				
40	11:50		Roles/Responsibilities – Incorporation into SOPs	Mr. Russell Isaac/Ms. Natalia Ilieva
			Media Needs Identified in SOPs	Mr. Russell Isaac/Ms. Natalia Ilieva
		12:30	Communications – Flow of Information	Mr. Russell Isaac/Ms. Natalia Ilieva
60	12:30	13:30	LUNCH BREAK	
30	13:30		Coordination with International Media	Mr. Russell Isaac/Ms. Natalia Ilieva
		14:00	Overall role of SOPs	Mr. Russell Isaac/Ms. Natalia Ilieva
Role of SOPs/MOUs				
30	14:00		Designated Spokesperson	Mr. Atiq K. Ahmed
			Standard Methods of Dissemination	Mr. Atiq K. Ahmed
		14:30	Backup Systems and Locations	Mr. Atiq K. Ahmed
10	14:30	14:40	The Role of CPP Volunteers and storm Spotters in	Mr. Bashir Ahmed
30	14:40	15:10	Dissemination to District and Local (Last km)	Dr. Yuichi Ono
20	15:10		Dissemination to Vulnerable Groups	Mr. Russell Isaac/Ms. Natalia Ilieva
			Mobile Phones	Mr. Russell Isaac/Ms. Natalia Ilieva
		15:30	Social Media	Mr. Russell Isaac/Ms. Natalia Ilieva
20	15:30	15:50	BREAK	
30	15:50		Automation of Warnings	Mr. Samuel Muchemi
		16:20	The Development of CAP in China Public	Ms. Dai Qing
Module 5		After Actions Review		
30	16:20		Scheduled Meetings After Hazard Past	Mr. Zhang Jianlei
			Review and Recommendations from Event	Mr. Zhang Jianlei
		16:50	Regular Test Exercises – Use SOPs	Mr. Zhang Jianlei
Module 6		Lessons Learned		
40	16:50	17:30	Lessons Learned from Shanghai Experience	Mr. Zhang Jianlei

Time (min)	Start	End	Agenda	Speakers/Moderators
Day 3 (Wednesday, 11 June 2014)				
Module 6		Lessons Learned (Continued)		
*45	09:00	10:00	Lessons Learned from Haiyan	Mr. Olavo Rasquinho
Module 7		Development of SOP Scenarios		
20	10:00	10:20	Description of 3 Groups, Scenarios, Roles, etc.	
20	10:20	10:40	BREAK	
110	10:40	12:30	Break into 3 Groups for Scenarios and SOP	Three groups with instructors divided
60	12:30	13:30	LUNCH BREAK	
Module 8		Panel/Group Discussions		
60	13:30	14:30	Groups Brief Results and Give SOP Examples	Dr. Yuichi Ono, Moderator
15	14:30	14:45	Description of next exercise with three groups	Three groups with instructors divided
15	14:45	15:00	BREAK	
60	15:00	16:00	Break into 3 groups for discussion and	Instructors divided among 3 groups
40	16:00	16:40	Groups Brief Results and Give SOP Examples	Dr. Shuichi Kure, Moderator
30	16:40	17:10	Open Group Discussion	Mr. Atiq K. Ahmed, Moderator
10	17:10	17:20	Closing	Mr. Olavo Rasquinho

Remarks:

*Unforeseen Presentation on Day 3 from the participant of Pakistan, Mr. Tahir Islam, DRR for presenting with Topic "Disaster Management System in Pakistan"

Opening Statements:

Mr. Olavo Rasquinho, TCS, olavo@typhooncommittee.org

Mr. Imran Akram, PTCS, ptc.sectt@yahoo.com

Mr. Samuel Muchemi, WMO, smuchemi@wmo.int

Mr. Alf Blikberg, blikberg@un.org

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Lecturers/Instructors:

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Mr. Samuel Muchemi, WMO Representative, smuchemi@wmo.int

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Mr. LI Qingqing, Shanghai Typhoon Institute, liqq@mail.typhoon.gov.cn

Mr. Zhang Jianlei, Shanghai Meteorological Service, zhangjl@cma.gov.cn

Dr. Shuichi Kure, IRIDES, Tohoku University, kure@irides.tohoku.ac.jp

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Mr. Russell Isaac, ABU, russell@sportsmediaservices.com

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APPENDIX III – Day 3 Morning Groups, Scenario, Roles and Discussions

EXERCISE ON SOPs **(Modules 7 Agenda of SSOP Training Workshop)**

After two days of lectures, an exercise was carried out during the morning of Day 3. This exercise was previously discussed with the lecturers and TCS. The scenario consisted of the approach of a tropical cyclone three, two, and one days before landfall and then when the cyclone made landfall in the country. The participants were requested to analyze the situation, make decisions, conduct operations, and establish appropriate Standard Operating Procedures for the situation at various time periods.

The participants and lecturers/trainers were distributed, on the morning of Day 3 into three previously established groups, according to their areas of specialization:

Group I – Warning preparers (meteorologists, hydrologists, and tsunami specialists).
The instructors related to the warning process met with the first group and provided a scenario and requested ideas for SOPs especially considering a multi-hazards approach.

Group II – Disaster Risk Reduction (DRR) and decision makers.
The instructors for DRR and decision makers met with the group II and provided the same scenario.

Group III – Media
The media instructors and media professionals met with the group III and provided the same scenario.

Each group met in different rooms and were told to focus on the SOP aspects of their respective activities since the afternoon groups will look at collaboration and integration. They discussed the meteorological scenario and their respective actions with the assistance of the lecturers for approximately one and a half hours. A rapporteur took notes during each group's discussions. Following is the composition of each group and the notes from each group. At the start of the afternoon on Day 3, the respective rapporteurs provided the conclusions their group had reached.

Proposed Scenario

Approach of a tropical cyclone and start with the system forecasted to affect their country within 3 days. Then go to 2 days out, 1 day out, and then the tropical cyclone hits the country. What would be done at different times and how/what kind of SOPs would be needed and the general structure? How can these SOPs be made multi-hazards?

**COMPOSITION OF GROUPS FOR MORNING DISCUSSION
(Warning preparers / DRR and decision makers / Media)**

	Group I		Group II		Group III
	WARNING PREPARERS (METEOROLOGIST, HYDROLOGISTS, AND TSUNAMI SPECIALISTS)		DRR AND DECISION MAKERS		MEDIA
Lecturers	Mr. ZHANG Jianlei, Mr. Tony ELLIOTT and Mr. Samuel Wandimi MUCHEMI		Mr. Atiq Kainan AHMED, Prof. Yuichi ONO and Dr. Shuichi KURE		Ms. Natalia ILIEVA and Mr. Russell ISAAC
Reporter	Dr. Mohd. Hisham MOHD ANIP		Prof. Yuichi ONO		Mr. Gabriel de Alban DAVID
1	Mr. ZHANG Jianlei , Shanghai Meteorological Service	1	Mr. Atiq Kainan AHMED , Program Specialist (Early Warning Systems) - ADPC	1	Ms. Natalia ILIEVA , Executive Assistant to the Secretary – General, ABU
2	Mr. Tony ELLIOTT , Head of ICG/IOTWS Secretariat, UNESCO IOC Perth Regional Programme	2	Prof. Yuichi ONO , Professor Tohoku University	2	Mr. Russell ISAAC , Media Consultant
3	Mr. Samuel Wandimi MUCHEMI , Public Weather Services Division, WMO	3	Dr. Shuichi KURE , Assistant Professor, Tohoku University		
4	Mr. Imran AKRAM , Meteorologist (PTC)				
5	Ms. Mossammat Ayesha KHATUN, Assistant Director, Storm Warning Center, Bangladesh Meteorological Department, Bangladesh				
6	Dr. XU Ming (Mr.), Director, Climate Section, Shanghai Typhoon Institute, China	4	Mr. Bashir AHMED, Deputy Director (Admin.), Cyclone Preparedness Programme (CPP), Bangladesh	3	Mr. Md Mainul ISLAM, Staff Reporter, SA Television Ltd., Bangladesh
7	Ms. CHEN Peiyan, Shanghai Typhoon Institute, China	5	Mr. Md Abdulla-Hel KAFI, Upazila Project Implementation Officer, Bangladesh	4	Ms. YIN YIN SHWE, Staff Officer, Myanmar Radio and Television, Myanmar
8	Mr. Ganesh Kumar DAS, Scientist C, Regional Meteorological Centre, KOL-27, India Meteorological Department, India	6	Mr. Hissan HASSAN, Project Director, National Disaster Management Centre, Maldives	5	Mr. Syed Muhammad ILYAS Deputy Director, Ministry of Information, Broadcasting & National Heritage, Pakistan
9	Mr. Vanhdy DOUANGMALA Head of Weather Forecasting and Aeronautical Division, Department of Meteorology and Hydrology, Lao PDR	7	Mr. Abdullah RAFEEU, Assistant Project Officer, National Disaster Management Centre, Maldives	6	Mr. Gabriel de Alban DAVID, Director Government Affairs/Consultant Panahon TV, Panahon TV, Philippines
10	Dr. Mohd. Hisham MOHD ANIP, Meteorological Officer, National Weather Centre, Malaysian Meteorological Department (MetMalaysia), Malaysia	8	Mr. THAN HTUT SWE, Director, Relief and Resettlement Department, Ministry of Social Welfare Relief and Resettlement, Myanmar		
11	Mr. Ahmed RASHEED Senior Meteorologist, Meteorological Service, Hulhule', Maldives	9	Mr. Tahir ISLAM, Director (Recovery & Rehabilitation), National Disaster Management Authority, Pakistan		

	Group I		Group II		Group III
	WARNING PREPARERS (METEOROLOGIST, HYDROLOGISTS, AND TSUNAMI SPECIALISTS)		DRR AND DECISION MAKERS		MEDIA
12	Mr. TIN HTUT, Assistant Director, Department of Meteorology and Hydrology, Myanmar	10	Mr. Kodippili Arachchge Don Pradeep Kumara KODIPPILI, Assistant Director-Media Spokesman, Disaster Management Centre, Sri Lanka		
13	Mr. WIN MAW, Staff Officer, Hydrological Section, Department of Meteorology and Hydrology, Myanmar	11	Mr. Peerapong MUENPONG, Director of Operation Section, Department of Disaster Prevention and Mitigation, Thailand		
14	Mr. Abdul RASHID, Director, Institute of Meteorology and Geophysics (IMG), Pakistan Meteorological Department, Pakistan	12	Miss Parwath PHUNTHIRAWUTHI, Meteorologist, Weather Forecast Bureau, Thai Meteorological Department, Thailand		
15	Mr. Gener Macanlalay QUITLONG, Weather Specialist I, PAGASA, Philippines				
16	Mr. Marino Ladines MENDOZA, Weather Specialist II, PAGASA, Philippines				
17	Mr. Wirat WARANUCHIT, Expert on Meteorological Research and Development, Thai Meteorological Department, Thailand				
18	Mr. Maytee MAHAYOSANANTA, Director, Central Weather Forecast Division, Weather Forecast Bureau, Thai Meteorological Department (TMD), Thailand				
19	Ms. Anusha Rashanthi WARNASOORIYA, Deputy Director, Department of Meteorology, Sri Lanka				
20	Ms. DANG Thanh Mai, Deputy Director, Central Hydro- Meteorological Forecasting Center, National Hydro-Meteorological Service of Viet Nam, Viet Nam				
21	Mr. Lu Ngoc Lam, Vice Head of Planning Division, Department of Dyke Management and Flood Storm Control, Viet Nam				

**COMPOSITION OF GROUPS FOR AFTERNOON DISCUSSION
(Mixed groups)**

	Group A		Group B		Group C
Rapporteur	Mr. Tony ELLIOTT		Prof. Yuichi ONO		Ms. Natalia ILIEVA
Presenter	Mr. Tony ELLIOTT		Mr. Atiq Kainan AHMED		Mr. Russell ISAAC
1	Mr. Tony ELLIOTT , Head of ICG/IOTWS Secretariat, UNESCO IOC Perth Regional Programme (DRR) and	1	Mr. Atiq Kainan AHMED , Program Specialist (Early Warning Systems), Asian Disaster Preparedness Center (ADPC) (DRR)	1	Ms. Natalia ILIEVA , Executive Assistant to the Secretary – General, Asia-Pacific Broadcasting Union (Media), and
2	Mr. Samuel Wandimi MUCHEMI , Scientific Officer, Public Weather Services Division, World Meteorological Organization (Meteo)	2	Prof. Yuichi ONO , Professor, Tohoku University (DRR) and	2	Mr. Russell ISAAC , Media Consultant, Asia-Pacific Broadcasting Union (Media),
		3	Dr. Shuichi KURE , Assistant Professor, Tohoku University, (DRR)		
3	Mr. Gabriel de Alban DAVID, <i>Director Government Affairs/Consultant Panahon TV, Panahon TV, Philippines (Media)</i>	4	Mr. TIN HTUT, <i>Assistant Director, Department of Meteorology and Hydrology, Myanmar (Meteo)</i>	3	Ms. Anusha Rashanthi WARNASOORIYA, <i>Deputy Director, Department of Meteorology, Sri Lanka (Meteo)</i>
4	Ms. YIN YIN SHWE, <i>Staff Officer, Myanmar Radio and Television, Myanmar (Media)</i>	5	Mr. Abdul RASHID, <i>Director, Institute of Meteorology and Geophysics (IMG), Pakistan Meteorological Department, Pakistan (Meteo)</i>	4	Mr. Kodippili Arachchge Don Pradeep Kumara KODIPPILI, <i>Assistant Director-Media Spokesman, Disaster Management Centre, Sri Lanka (DRR)</i>
5	Mr. THAN HTUT SWE, Director, Relief and Resettlement Department, Ministry of Social Welfare Relief and Resettlement, Myanmar (DRR)	6	Mr. Ahmed RASHEED, <i>Senior Meteorologist, Maldives Meteorological Service, Hulhule', Maldives (Meteo)</i>	5	Mr. Maytee MAHAYOSANANTA, <i>Director, Central Weather Forecast Division, Weather Forecast Bureau, Thai Meteorological Department (TMD), Thailand (Meteo)</i>
6	Mr. Tahir ISLAM, <i>Director (Recovery & Rehabilitation), National Disaster Management Authority, Pakistan (DRR)</i>	7	Mr. Syed Muhammad ILYAS, <i>Deputy Director, Ministry of Information, Broadcasting & National Heritage, Pakistan (Media)</i>	6	Mr. Wirat WARANUCHIT, <i>Expert on Meteorological Research and Development, Thai Meteorological Department, Thailand (Meteo)</i>
7	Mr. Imran AKRAM, <i>Meteorologist, Panel on Tropical Cyclones (PTC), Pakistan</i>	8	Mr. Md Mainul ISLAM, <i>Staff Reporter, SA Television Ltd., Bangladesh (Media)</i>	7	Dr. XU Ming (Mr.), <i>Director, Climate Section, Shanghai Typhoon Institute, China (Meteo)</i>
8	Mr. Abdullah RAFEEU, <i>Assistant Project Officer, National Disaster Management Centre, Maldives (DRR)</i>	9	Mr. Vanhdy DOUANGMALA, <i>Head of Weather Forecasting and Aeronautical Division, Department of Meteorology and Hydrology, Lao PDR (Meteo)</i>	8	Ms. CHEN Peiyan, <i>Shanghai Typhoon Institute, China (Meteo)</i>

	Group A		Group B		Group C
9	Mr. Hissan HASSAN, <i>Project Director, National Disaster Management Centre, Maldives (DRR)</i>	10	Mr. WIN MAW, <i>Staff Officer, Hydrological Section, Department of Meteorology and Hydrology, Myanmar (Meteo)</i>	9	Miss Parwaph PHUNTHIRAWUTHI, <i>Meteorologist, Weather Forecast Bureau, Thai Meteorological Department, Thailand (Meteo)</i>
		11	Dr. Mohd. Hisham MOHD ANIP, <i>Meteorological Officer, National Weather Centre, Malaysian Meteorological Department (MetMalaysia), Malaysia (Meteo)</i>	10	Mr. Peerapong MUENPONG, <i>Director of Operation Section, Department of Disaster Prevention and Mitigation Thailand (DRR)</i>
		12	Mr. Ganesh Kumar DAS, <i>Scientist C, Regional Meteorological Centre, KOL-27, India Meteorological Department, India (Meteo)</i>	11	Mr. Gener Macanlalay QUITLONG, <i>Weather Specialist I, PAGASA, Philippines (Meteo)</i>
		13	Ms. DANG Thanh Mai, <i>Deputy Director, Central Hydro-Meteorological Forecasting Center, National Hydro-Meteorological Service of Viet Nam (Meteo)</i>	12	Mr. Marino Ladines MENDOZA, <i>Weather Specialist II, PAGASA, Philippines (Meteo)</i>
				13	Mr. Md Abdulla-Hel KAFI, <i>Upazila Project Implementation Officer, Bangladesh (DRR)</i>
				14	Mr. Lu Ngoc Lam, <i>Vice Head of Planning Division, Department of Dyke Management and Flood Storm Control, Viet Nam (DRR)</i>
				15	Mr. Bashir AHMED, <i>Deputy Director (Admin.), Cyclone Preparedness Programme (CPP)</i>
				16	Ms. Mossammat Ayesha KHATUN, <i>Assistant Director, Storm Warning Center, Bangladesh Meteorological Department, Bangladesh (Meteo)</i>

EXERCISE - SUMMARY OF PRESENTATIONS BY THE RAPPORTEURS

Group I (Warning preparers)

Tropical cyclone SOP

Stakeholders

- 1) Met & Hydro dept
- 2) Disaster management
- 3) Media
- 4) Coast guard, navy, civil defense, red-cross
- 5) Volunteers & NGOs
- 6) Local Govt Authorities
- 7) Utility companies
- 8) Public

Time	Assessment	Action	Stakeholder	Responsibility	Communication
72 hrs	TC max wind 64 kts and intensify Central press 970 hPa and intensify 750 km E of Fictionia Lat 7N Long 150E Mov W at 5 kts	Issue an alert and update every 12 hrs including:	All above except 1	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
48 hrs	TC max wind 72kts and intensify Central press 965 hPa and intensify 500 km E of Fictionia Lat 8N Long 140E Mov W at 6 kts	Issue a warning and update every 6 hrs	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
		Press conference	Media Disaster management	Corporate Unit of Met & Hydro Dept	TV & Radio, press

24 hrs	TC max wind 72kts and maintain Central press 960 hPa and intensify 200 km E of Fictionia Lat 8N Long 135E Mov W at 7 kts	Updating a warning every 6 hrs	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
		Update every 3 hrs the TC position & intensity	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
12 hrs	TC max wind 72kts and maintain Central press 958 hPa and intensify Storm surge up to 3 m wave 200 km E of Fictionia Lat 9N Long 130E Mov W at 8 kts	Updating a warning every 6 hrs	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
		Update every hr the TC position & intensity	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
		Press release	media	Corporate Unit of Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
6 hrs	TC max wind 72kts and maintain Central press 955 hPa and intensify Storm surge up to 3 m wave 100 km E of Fictionia Lat 10N Long 120E Mov NW at 10 kts	Updating a warning every 6 hrs	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio

		Update every hr the TC position & intensity	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
0 hr	TC max wind 72kts and maintain Central press 950 hPa and intensify Storm surge up to 3 m wave Reach Fictionia Lat 11N Long 110E Mov NW at 10 kts	Updating a warning every 6 hrs	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
		Update every hr the TC position & intensity	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
-6 hrs	TC max wind 50kts and weaken Central press 970 hPa and weaken Reach Fictionia Lat 13N Long 112E Mov NNW at 12 kts	Updating a warning every 6 hrs	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio
		Keep monitoring until it dissipates	Met & Hydro Dept	Met & Hydro Dept	
		Termination of the warning	All above	Met & Hydro Dept	Mail, Fax, sms, website, phone, mobile apps, TV, radio

Group II (DRR and Decision makers)

Scenario: Any cyclone/tropical cyclone or storm or depression which may be making a landfall to a country

Special scenario: A huge cyclone like Haiyan is approaching to your territory

Day 1 (-72 hours/3 days before the arrival of a cyclone)

Met Office tells an approaching cyclone with a certainty

Action:

- Communication with the Met Office to confirm an approaching tropical cyclone Bulletin (info) from the Met Office should come to NDMO and related agencies
- Within an NDMO to discuss (with Met dept.) and decide if it is hitting the country
- NDMOs to circulate the info/message to other sectors, Govt. agencies/ministries, media, etc.
- NDMO to activate National Disaster Management Council/Committee
- The Council to decide whether they should have a governmental (emergency) declaration or not
- Disseminate information/alert/bulletin to local administration and share it with media
- (update the info from Met Office more frequently – how often? 6 hours, 12 hours, RSMCs -3 hours depending on country)
- The Council considers whether they should be 24h/7day operational (if serious, 24h/7day)
- Involvement with local community leaders??? (timing does matter, though)

Day 2 (Now, super cyclone/typhoon Haiyan-like storm is approaching)

- Updating (upgrading/downgrading) the warning level with the Met Office and then suppose the warning is issued
- NDMO to call for another National Council (highest level) meeting to make a decision on
 - 1) Update warning to marine and fishery community within 200-400 km from the area at risk
 - 2) Preparedness pattern based on the nature of the storm
 - 3) Specify geographic locations at high risk
 - 4) activate the contingency plan, including evacuation order, including using military forces (operation of emergency operation center, unit, sending message, SMSs, frequent press conf. etc. logistical preparedness (stand-by) – rescue and emergency operation, communicating with local community level managers)
 - 5) Activate a humanitarian/relief coordinating process with end users

- 6) Closely update info to the public through Media, press conference, etc. by responsible persons at the government (this can be done a minister or higher depending on situations)
- Evacuation 24 hours ahead of time (48 hours before to be ready/stand-by)
- Keep communication between the NDMOs/Council and Met Office and the media

Day 3 (cyclone approaching)

- Issues the evacuation order – sirens, mega-phone, door-to-door, and all other EW systems to be activated (in local languages as well)
- Local administrations/authorities, including police, military forces, and firefighters, take a lead to activate their local action plan
- Activate the evacuation process and incident command system (and secure and control the routes to the centers, maintain the evacuation centers – supply materials, first-aid, medical services, hospital/school evacuations, safety, etc.)
- A back-up plan to shift the evacuation site – have to consider but might be difficult because it may be already with strong rain, wind, and surges
- Final check to see if there is any people remaining at the community at risk
- Complete the evacuation operations (even police, military forces, firefighters, and volunteers to evacuate to safer places)

Keep communication between the NDMOs/Council and Met Office and the media

Tsunami and other hazards with short lead time;

Cyclone devastated the area at the end of Day 3

Day 4 (After the disaster hit)

- Cancellation - depending on the messages from Met Office: Warning to cancel and NDMOs: evacuation order to cancel
- Incident command system be activated

Lifesaving efforts

Search and rescue hospital treatment

Relief (infrastructure recovery)

Food and water

Sheltering

- Communication (Press release and media reporting)
- Security
- Damages and Losses Assessment
- Activate national and international humanitarian/relief coordinating process with end users
- Linkage between local DMO and local Met Office instead of going through central agencies

Keep communication between the NDMOs/Council and Met Office and the media

Later (long-term)

Recovery

Other comments:

A meteorologist shall be assigned to the NDMO when considered advisable

Joint Press Conference/Release/Briefing between the NDMOs and Met Offices

NDMOs to make a decision on the which area only with Met Office

Met Office to inform info/bulletin to Fishery sector and Port authority, etc. – as fishermen would go for fishing several days before the cyclone approaches

Standardization of warning info for wider dissemination to multi-users is requested by Media (this is to the EW Group)

Sharing of warning through multiple-mode including conventional and non-conventional indigenous modes

Before the Day1

NDMOs should be better prepared

Identification of evacuation centers

Day 3 (-24 hours) - Precipitation and wind will get stronger and be prepared for that when considering their actions

For Multi-hazard SOPs

Different SOPs for far-tsunami is needed

Actions in hours instead of days --- No physical meetings

All actions should be predefined with automatic actions without telling others what to do

National Council to be still formed by law

In some country, trigger the EW button to be pushed by authority – Met Office to coordinate with the authority

Group III (Media)

Actions	3 DAYS BEFORE IMPACT	2 DAYS BEFORE IMPACT	1 DAYS BEFORE IMPACT	0 DAY IMPACT
Tone	Alert	Assertive	Imperative	Urgent
Communications	<p>Write TOR between broadcasters and official sources of information – official spokespeople, official stamp of approval to be incorporated in media info; monitoring by official agencies</p> <p>Establishing a 24 hour line with stakeholders nationally</p> <p>Establish End-to end agreement that there will be analyses at the end of the event for accountability and transparency</p>	<p>Establishing a 24 hour line nationally, regionally and locally</p>	<p>Establish a broadcast hub for central information with satellite inputs from the field</p>	<p>Live and constant updates and information</p>

Programme schedule – Radio and TV	News bulletins – probably top of the news Establish there will be regular updates and Met Office protocol schedule updates (possibly every 3 hours) including a final “sign-off”.	News –more extensive Special Broadcast with interviews including Head of state, ministers	More often weather updated, Special field reports with local leaders from government and communities - addressing cultural and religious resistance ensure that there is information in local languages	Live information
Technical aspects	Prepare alternative communications-power and transmission	Field location preparation	Establish set-up transmissions locally	Live from all sources
Content	Alert of impending danger and definition of the hazard in news bulletins	Education on the impacts, advice for transmission preparation, Special programming Context – archive , experts previous experience and advice menu.	Mobilisation for evacuation advice for receiving info – phones, batteries, emergency pack – medicines etc, met office expert – updates on duration and intensity; disaster logistics expert on evacuation advice; safety expert on survival safety aspects	Broadcasting out of the zone but with a focus also on local information for safety, mobilization – use of short distance transmitters, community radio.
Post – disaster	Mobilising the periphery of 20 – 30 km radius for the support systems	When putting in contest give advice for people how to react to	Talking in terms of rescue and relief	

Day 3 – great role of identifying the needs and can penetrate the decision as well

APPENDIX IV – Day 3 Afternoon Groups, Scenario, Roles and Discussions

EXERCISE ON SOPs (Modules 8 Agenda of SSOP Training Workshop)

Following the morning of Day 3 groups which were divided according to their areas of specialization, during the afternoon of Day 3 separate meetings were held by three new, integrated groups - each one was composed of a mix of warning issuers, DRR/decision makers and media professionals. The participants by groups is listed below. In these meetings, the same scenario was used as in the morning session but the focus was on the role and use of multi-hazard SOPs and Memorandum of Understanding (MOU) for integrated and collaborative actions and procedures among the various stakeholders. The groups were requested to give particular attention to SOPs.

Following the discussions in the separate meetings, the participants rejoined each other in one group and were briefed on the results of the separate meetings. A final group discussion was carried out and a summary was drafted.

COMPOSITION OF GROUPS FOR AFTERNOON DISCUSSION (Mixed groups)

	Group A		Group B		Group C
Rapporteur	Mr. Tony ELLIOTT		Prof. Yuichi ONO		Ms. Natalia ILIEVA
Presenter	Mr. Tony ELLIOTT		Mr. Atiq Kainan AHMED		Mr. Russell ISAAC
1	Mr. Tony ELLIOTT , Head of ICG/IOTWS Secretariat, UNESCO IOC Perth Regional Programme (DRR) and	1	Mr. Atiq Kainan AHMED , Program Specialist (Early Warning Systems), Asian Disaster Preparedness Center (ADPC) (DRR)	1	Ms. Natalia ILIEVA , Executive Assistant to the Secretary – General, Asia-Pacific Broadcasting Union (Media), and
2	Mr. Samuel Wandimi MUCHEMI , Scientific Officer, Public Weather Services Division, World Meteorological Organization (Meteo)	2	Prof. Yuichi ONO , Professor, Tohoku University (DRR) and	2	Mr. Russell ISAAC , Media Consultant, Asia-Pacific Broadcasting Union (Media),
		3	Dr. Shuichi KURE , Assistant Professor, Tohoku University, (DRR)		
3	Mr. Gabriel de Alban DAVID, <i>Director Government Affairs/Consultant Panahon TV, Panahon TV, Philippines (Media)</i>	4	Mr. TIN HTUT, <i>Assistant Director, Department of Meteorology and Hydrology, Myanmar (Meteo)</i>	3	Ms. Anusha Rashanthi WARNASOORIYA, <i>Deputy Director, Department of Meteorology, Sri Lanka (Meteo)</i>
4	Ms. YIN YIN SHWE, <i>Staff Officer, Myanmar Radio and Television, Myanmar (Media)</i>	5	Mr. Abdul RASHID, <i>Director, Institute of Meteorology and Geophysics (IMG), Pakistan Meteorological Department, Pakistan (Meteo)</i>	4	Mr. Kodippili Arachchge Don Pradeep Kumara KODIPPILI, <i>Assistant Director-Media Spokesman, Disaster Management Centre, Sri Lanka (DRR)</i>
5	Mr. THAN HTUT SWE, <i>Director, Relief and Resettlement Department, Ministry of Social Welfare Relief and Resettlement,</i>	6	Mr. Ahmed RASHEED, <i>Senior Meteorologist, Maldives Meteorological Service, Hulhule', Maldives (Meteo)</i>	5	Mr. Maytee MAHAYOSANANTA, <i>Director, Central Weather Forecast Division, Weather Forecast Bureau, Thai Meteorological Department</i>

	Group A		Group B		Group C
	Myanmar (DRR)				(TMD), Thailand (Meteo)
6	Mr. Tahir ISLAM, <i>Director (Recovery & Rehabilitation), National Disaster Management Authority, Pakistan (DRR)</i>	7	Mr. Syed Muhammad ILYAS, <i>Deputy Director, Ministry of Information, Broadcasting & National Heritage, Pakistan (Media)</i>	6	Mr. Wirat WARANUCHIT, <i>Expert on Meteorological Research and Development, Thai Meteorological Department, Thailand (Meteo)</i>
7	Mr. Imran AKRAM, <i>Meteorologist, Panel on Tropical Cyclones (PTC), Pakistan</i>	8	Mr. Md Mainul ISLAM, <i>Staff Reporter, SA Television Ltd., Bangladesh (Media)</i>	7	Dr. XU Ming (Mr.), <i>Director, Climate Section, Shanghai Typhoon Institute, China (Meteo)</i>
8	Mr. Abdullah RAFEEU, <i>Assistant Project Officer, National Disaster Management Centre, Maldives (DRR)</i>	9	Mr. Vanhdy DOUANGMALA, <i>Head of Weather Forecasting and Aeronautical Division, Department of Meteorology and Hydrology, Lao PDR (Meteo)</i>	8	Ms. CHEN Peiyan, <i>Shanghai Typhoon Institute, China (Meteo)</i>
9	Mr. Hissan HASSAN, <i>Project Director, National Disaster Management Centre, Maldives (DRR)</i>	10	Mr. WIN MAW, <i>Staff Officer, Hydrological Section, Department of Meteorology and Hydrology, Myanmar (Meteo)</i>	9	Miss Parwapath PHUNTHIRAWUTHI, <i>Meteorologist, Weather Forecast Bureau, Thai Meteorological Department, Thailand (Meteo)</i>
		11	Dr. Mohd. Hisham MOHD ANIP, <i>Meteorological Officer, National Weather Centre, Malaysian Meteorological Department (MetMalaysia), Malaysia (Meteo)</i>	10	Mr. Peerapong MUENPONG, <i>Director of Operation Section, Department of Disaster Prevention and Mitigation Thailand (DRR)</i>
		12	Mr. Ganesh Kumar DAS, <i>Scientist C, Regional Meteorological Centre, KOL-27, India Meteorological Department, India (Meteo)</i>	11	Mr. Gener Macanlalay QUITLONG, <i>Weather Specialist I, PAGASA, Philippines (Meteo)</i>
		13	Ms. DANG Thanh Mai, <i>Deputy Director, Central Hydro-Meteorological Forecasting Center, National Hydro-Meteorological Service of Viet Nam (Meteo)</i>	12	Mr. Marino Ladines MENDOZA, <i>Weather Specialist II, PAGASA, Philippines (Meteo)</i>
				13	Mr. Md Abdulla-Hel KAFI, <i>Upazila Project Implementation Officer, Bangladesh (DRR)</i>
				14	Mr. Lu Ngoc Lam, <i>Vice Head of Planning Division, Department of Dyke Management and Flood Storm Control, Viet Nam (DRR)</i>
				15	Mr. Bashir AHMED, <i>Deputy Director (Admin.), Cyclone Preparedness Programme (CPP)</i>
				16	Ms. Mossammat Ayesha KHATUN, <i>Assistant Director, Storm Warning Center, Bangladesh Meteorological Department, Bangladesh (Meteo)</i>