

WORLD METEOROLOGICAL ORGANIZATION

Severe Weather Forecasting Demonstration Project (SWFDP)

Regional Sub-project for Bay of Bengal

**Report of the Public Weather Services (PWS) Workshop:
Delivery of Warning Services**

(Hanoi, 26-30 March 2018)



FINAL REPORT

1. Introduction

At the invitation of the Government of Vietnam, WMO convened the Severe Weather Forecasting Demonstration Project (SWFDP) Regional Sub-project for South East Asia Workshop in Hanoi, Vietnam (19-30 March 2018). The first week of the Workshop was on Severe Weather Forecasting and was conducted by the WMO Data Processing and Forecasting System (DPFS) programme from 19 to 24 March 2018. The second part of the Workshop was on Public Weather Services (PWS) addressing the Delivery of Warning Services and was conducted by the Service Delivery Division (SDD) from 26 to 30 March 2018. This report covers the second week of the Workshop.

1.1 Workshop Scope

The PWS Workshop covered the areas of Service Delivery with an emphasis on Impact-based Forecast and Warning Services (IBFWS). It also addressed: determination of gaps in service delivery in the participating countries; the Common Alerting Protocol (CAP); Working with media; Working with disaster management; and the participation of NMHSs in the WMO World Weather Information Service (WWIS) Website. The programme of the workshop is provided in **Annex 1** of this report.

1.2 Participants

Participants were drawn from countries of the SWFDP, S. E. Asia and was attended by representatives from Vietnam, Cambodia, Philippines, Lao and Thailand which are Members of the project. The participants comprised one PWS officer and one forecaster from each country except for Vietnam which, as host, sponsored many participants to the Workshop. **Annex 2** is the List of Participants.

1.3 The Workshop

Workshop presentations by the lecturers and participants as well as tables developed during the training session are provided on the PWSD website and may be accessed by clicking [here](#)¹. The Workshop comprised lectures accompanied by presentations. Participants carried out practical exercises by breaking into discussion groups for various topics, after which they presented the outcomes of their discussions followed by more open discussions and comments from other participants and the lecturers. This enabled good interaction and a very lively atmosphere at the Workshop.

2. Service Delivery Gaps and Solutions

The purpose of this session was to assess the service delivery status of the participating countries in terms of skills, dissemination channels, collaboration with user communities, capacity to forecast and develop warnings and other products. This self-assessment by participants revealed the existing gaps. It was followed by discussions on possible solutions and the actions that could be taken to fill the gaps.

This session was very interesting to the participants and the following is a summary of its outcome:

2.1 Cambodia

- TV and radio weather presenters lack basic knowledge of meteorology;
- Inadequate consultation between the Met service and users;
- Language problem in that there is no common language used to provide weather information that is understood by all members of the public;

¹ http://www.wmo.int/pages/prog/amp/pwsp/eventsworkshops_en.htm

- No service delivery channels developed using SMS and social media;
- Need for training staff in service delivery
- No proper communication mechanism between MOWRAM and NCDM

2.2 Vietnam

- Need to strengthen collaboration between NCHMF and mass media;
- Need to increase focus on end-users;
- Need to diversify the channels of communication;
- Websites: need to make more detailed information;
- Need to carry out user satisfaction surveys using social networks;
- Need to improve coordination between various government agencies/ministries.

2..3 Philippines

- a) Gap: Usage of technical terms that are hard to understand

Solution:

- make language easy for a layman to understand
- maintain language consistency

- b) Gap: Warnings are threshold-based

Solution:

- To carry out an Impact-based Forecast and Warning Services (IBFWS) training workshop

- c) Gap: Consultation with users is intermittent

Solution:

- Conduct regular and continuous IEC's to inform/learn about products/services and how to use them (include an annual programme of activities)

- d) Gap: Insufficient channels of communication to reach more vulnerable sectors (local areas etc) with low levels of literacy

Solution:

- Train and involve local people in dissemination

- e) Gap: Insufficient human resources - limited no. of forecasters

Solution:

- Increase human resources - have PWS advisors

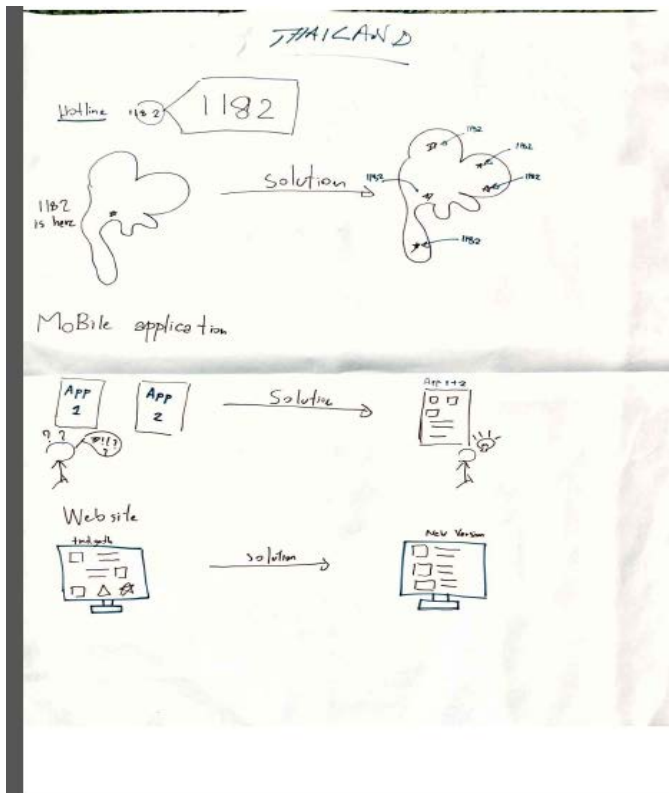


Figure 1: A cartoon depicting service delivery gaps of Thailand

2.4 Thailand

- Currently the hotline number 1182 is available in Bangkok only. There is need to spread hotline to other areas;
- There are two weather apps which is confusing to users. This should be improved by having only one integrated weather app;
- The website needs to be upgraded with modern features;
- Where there is no TV or Wi-Fi coverage, to use volunteers to communicate forecasts

2.5 Laos PDR

- There is a problem in communicating forecast information to some parts of the country;
 - Sometimes Weather Forecast are wrong because of failure to access forecast products due to internet connectivity problems and power outages, hence warnings may be sometimes be erroneous;
 - sometimes people do not understand, or do not take alerts or warnings seriously

so disasters happen;

- There is a gap in collaboration within the SWFDP project: Weather models are not always accessible and when they are, model outputs do not always indicate accurately in which country a hazard will occur.

3. Impact-based Forecasting (IBF) : Mr John Hammond (UK Met Office)

IBF was the focus of the workshop. Mr John Hammond conducted IBF training and he covered the following areas:



Figure 2: Mr John Hammond (UK Met Office) conducts IBF training

3.1 Advising for Severe Weather

He explained how Communicating and collaborating with stakeholders is done in the UK through the Met Office's Public Weather Service Advisors. A team of regionally based Public Weather Service advisors with responsibility for Government Office regions in England and Wales, and for the Devolved Administrations of Scotland and Northern Ireland. These

advisors work with regional emergency planning groups to assist in devising plans and exercises and respond to real-time emergency incidents. One of the main things they do is go out there and talk to responders.

Participants were given a chance to discuss and see whether a similar approach could be set up in their respective countries. This resulted in a lively discussion and it was clear that participants found this approach attractive and worth considering for implementation in their respective countries depending on availability of staff.

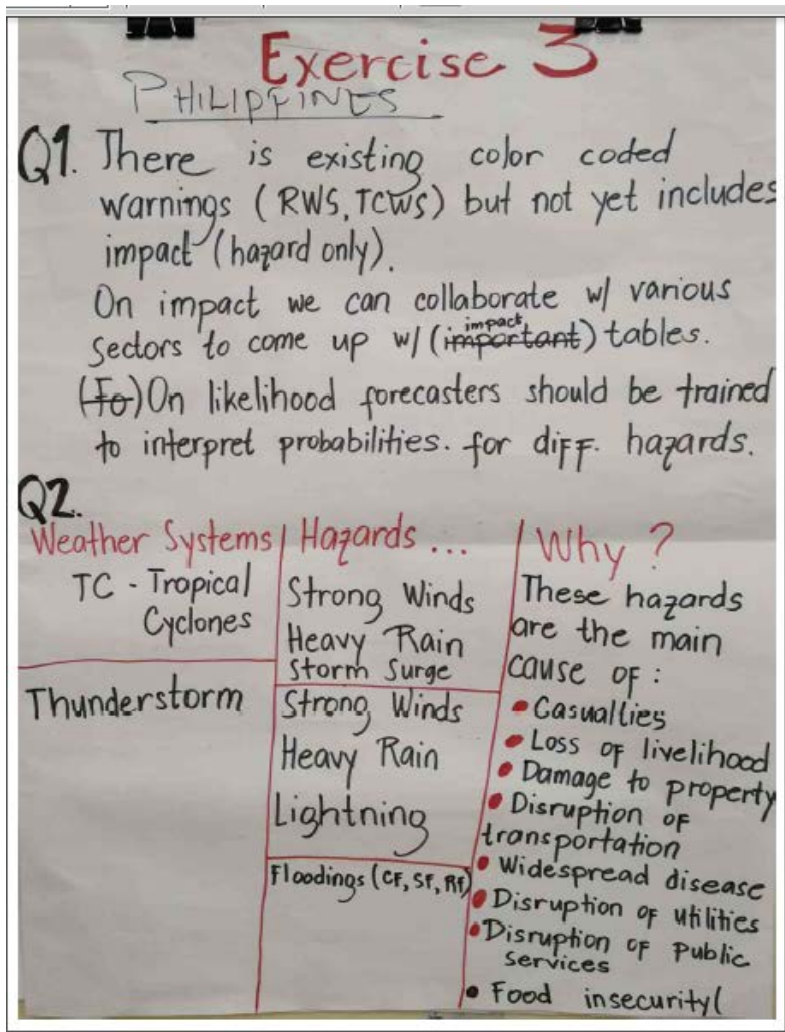


Figure 3: Warnings exercise responses. Example of Philippines

3.2 Methods of Disseminating Warnings

Participants were divided into groups to discuss the different methods of disseminating warnings. They considered the positive and negative points of each method for disseminating warnings in their country after which they constructed a table on paper and filled in answers. They also considered methods that communities could use to pass feedback/ reports of impacts back to the Ministries.

In this exercise they considered the use of TV, flags, E-mail, radio, newspapers, Twitter, Facebook, text messaging, sirens, websites, signs, community wardens, loud hailers etc

3.3 The Impact Matrix

Participants were introduced to Impact Tables for different hazards and taken through the process of how these tables are developed by NMHSs in collaboration with disaster management authorities. They carried out an exercise in which they sat in groups to consider their current methods of generating warnings.

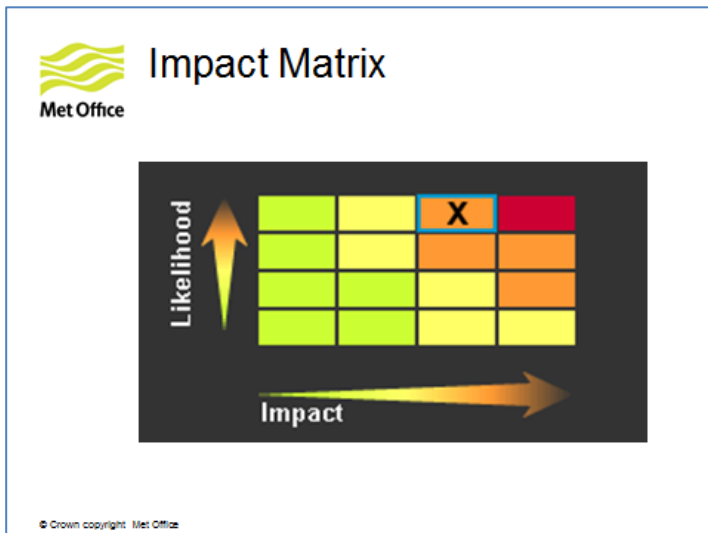


Impact tables in the UK

	Very Low	Low	Medium	High
Impact and advice applying to ALL SEVERE WEATHER	The weather is not expected to have any noticeable impacts but there may be some minor issues e.g. when travelling some extra care may be needed on occasions and there may be some disruption to outdoor events.	BE AWARE and ensure you access the latest weather forecast for up to date weather information. Expect some minor delays due to slower traffic. Outdoor events may be disrupted or cancelled.	BE PREPARED. Take precautions where possible and ensure you access the latest weather forecast. BE PREPARED for some disruption to normal daily routines. Travel only if well prepared and BE PREPARED for longer journey times.	TAKE precautionary ACTION and remain extra vigilant. Follow orders and any advice given by authorities under all circumstances. Ensure you access the latest weather forecast. EXPECT significant disruption to normal daily routines. Avoid all non-essential journeys. If you must make a journey carry emergency food/ clothing/ blanket etc.

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Figure 4: Example of a generic Impact Table



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Figure 5: The Impact Matrix

They were also introduced to the Impact Matrix which uses a combination of LIKELIHOOD and IMPACT to give a single colour to a warning. Participants learnt that the **Likelihood in a forecast** of impacts occurring was a reflection of the confidence in forecast; while the level of **impacts** expected is dependent on location, timing and recent weather.

John explained that Met Office's experience using the Table had shown that it was easy to understand, it changed people's behavior and that it was necessary to work with stakeholders in carrying out verification to continually improve.

Participants carried out an exercise in

which they imagined that heavy rainfall had been falling in a part of their country that is vulnerable to this wet weather. They drew the Impact Matrix and considered how they would use it, to warn for flooding in the vulnerable part of your country. The session enabled the participants to appreciate the importance of the Impact Matrix and how it is used in warning.

3.4 User perspective: Disaster Manager - Head of Division, Disaster Management Policy and Technology Center, Viet Nam Disaster Management Authority

Participants were informed of the activities of the Disaster Management Policy and Technology Center, Viet Nam Disaster Management Authority in acting to save lives and livelihoods as well as how they were collaborating with the National Centre for Hydro-Meteorological Forecasting (NCHMF).

4. User perspective - Media Session

4.1 Collaboration of NCHMF with the media: Truong Thanh Nguyen - Director, Weather and Disaster Broadcast Center (WDB), Vietnam Television (VTV)

TV weather presentation in Vietnam started in 1995, without a weather presenter. Weather presenters started appearing on Vietnam Television (VTV) in 2003. Currently there are 17 bulletins with a presenter and 30 without that are broadcast through six TV channels of VTV. When hazardous weather occurs, disaster warnings are updated and broadcast every 30 mins to 1 hour. The forecasts transmitted on VTV include 3-day, 7-day, marine, heavy rainfall, landslide, cold surge and seasonal forecasts. This has been made possible by the strong cooperation between VTV and the NCHMF.

4.2 Working with the Media: S. Muchemi (WMO)

Participants learnt why it is important for NMHSs to develop good relations with the Media (TV, radio, print) for increased positive and more accurate dissemination of forecasts and warnings provided by NMHSs. They were given the example of how an association of journalists and meteorologists, NECJOGHA, had improved relations and services in the Greater Horn of Africa. This had been achieved through close collaboration and cross-training between meteorologists and journalists.

Participants also learnt tips on how to effectively relate with the media, their constraints and the do's and don'ts of handling the media including during a live interview situation.

Reference: Guidelines on the Improvement of NMSs-Media Relations and Ensuring the Use of Official Consistent Information: (PWS-3; WMO/TD No. 1088), Available at https://library.wmo.int/pmb_ged/wmo-td_1088.pdf

4.3 Communications Working with the media: John Hammond

Examples of misreported forecasts in the UK were given. Participants learnt the importance of developing a competency in communication skills in order to ensure that they could:

- Explaining forecast uncertainty
- Provide consistent information and messages
- Provide clear and concise products that are easy to understand.

Participants also learnt the importance of developing a strong brand and reputation of the Meteorological Service as a way of building credibility so that public and the media would be more likely to listen to them.

5. The Common Alerting Protocol (CAP) Introduction Session – S. Muchemi (WMO)

The CAP standard is an alert or warning message format that simplifies and enables the task of communicating warnings. Participants learnt of the basics of CAP and why it is important for NMHSs to implement the CAP standard as well the steps involved in its implementation. The initiatives that WMO was taking to facilitate speedy implementation of CAP by WMO Members were presented, including the development of an online training platform as well as an online cloud-based CAP editing platform.

At the same time, participants were introduced to the WMO Register of Alerting Authorities. An update of the level of involvement of the NMHSs represented in the workshop was considered in terms of whether a country editor of the register had been nominated and if so, whether the editor had carried out the task of editing the Register. This was an interesting session in which participants noted the immediate tasks they needed to perform in order to bring the participation of their countries in the Register up to date.

The importance of CAP and the Register in the development of the WMO Global Multi-hazard alert System (GMAS) was demonstrated and this provided more reason to act quickly to ensure that both CAP and the Register were working in each of the countries.

6. WMO global platforms for service delivery: The World Weather Information Service (WWIS): S. Muchemi (WMO)

The WWIS is a global website that presents OFFICIAL weather observations, weather forecasts and climatological information for selected cities supplied by National Meteorological & Hydrological Services (NMHSs) worldwide. The NMHSs make official weather observations in their respective countries. Links to their official weather service websites are also provided. By January 2018, WWIS provided official weather information for over 2200 cities. One of the challenges of WWIS is the gaps in the availability of forecasts as well as some NMHSs providing less than 5-day forecasts. In order to deal with this problem, it had been decided to request Members to provide forecasts for at least 10 cities, for forecasts to be for at least 5 days and to update the forecasts at least twice a day. A Monitoring tool that shows how the Met services were performing in their participation at WWIS was displayed to the participants and actual actions that participants would take to improve their country situation were identified.

WORKSHOP ON PUBLIC WEATHER SERVICES

(Hanoi, 26-30 March 2018)

Provisional Programme

(Updated on 14 March 2018)



Date	Time	Agenda Items	Who
26 March 2018 (Monday)	09:00 – 12:30	Item 1: Opening/welcome Item 2.1: Working Arrangements Item 2.2: Workshop objectives and outline Item 3: Presentations by participants: - weather warning dissemination, challenges and gaps	Host/WMO Host S. Muchemi, WMO All PWS Participants Moderator (S. Muchemi)
	14:00-17:00	- Service Delivery: The case of UK Met Office - Practical Session: Determining Service Delivery gaps	J. Hammond (UK Met Office) S. Muchemi
27 March 2018 (Tuesday)	09:00-12:30	Item 4: Impact-Based Forecasting & warning	J. Hammond
	14:00-17:00	- WMO guide No. 1150 on IBF - The WMO Strategy for service Delivery	S. Muchemi
28 March 2018 (Wednesday)	09:00-12:30	- User perspective: Disaster Manager - Common Alerting Protocol	Nguyen Anh SON Head of Division, Disaster Management Policy and Technology Center, Viet Nam Disaster Management Authority - S. Muchemi
	14:00-17:00	Impact-based forecasting and warning (continued)	J. Hammond
29 March 2018 (Thursday)	09:00-12:30	Item 5: Working with the media - User perspective: media - Working with the media	- Truong Thanh Nguyen - Director, Weather and Disaster Broadcast Center (WDB), Vietnam Television (VTV) - S. Muchemi





	14:00-17:00	Item 6: Service delivery evaluation Item 7: WMO global platforms for service delivery	J. Hammond S. Muchemi
30 March 2018 (Friday)	09:00-12:30	Item 8: Practical session - Improvement in service delivery	All participants
	14:00-17:00	- Improvement in service delivery - Workshop evaluation	All participants
Daily Breaks	10:00-10:30	Morning Coffee	
	12:30-14:00	Lunch Break	
	15:30-16:00	Evening Coffee	


Severe Weather Forecasting Demonstration Project
(SWFDP), RAI –Southeast Asia – Training Workshop
on Severe Weather Forecasting and Delivery of
Warning Services
Ha Noi, Viet Nam, 19-30 March 2018

ORIGINAL: ENGLISH

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