MEMBER REPORT

ESCAP/WMO Typhoon Committee
9th Integrated Workshop

THAILAND

Bangkok, Thailand
20-24 October 2014

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I. Overview of tropical cyclones which have affected/impacted Member's area in 2014

1. Meteorological Assessment (highlighting forecasting issues/impacts)

From 1 January to 30 September 2014, Thailand has not been directly affected by any tropical cyclones which moved across the South China Sea. However, there were some tropical cyclones which had indirect influence on the weather in Thailand.

The average rainfall over Thailand from 1 January to 30 September 2011 was 1,156.5 mm or about 8 % below normal which was drier than usual. Figure 1 showed that monthly rainfall from January to May was below the 1981-2010 normal especially during January to March, which were more than 50 % below normal over the whole areas. However, from June to August, Thailand received plentiful rainfall and slightly above normal by the influence of active southwest monsoon that periodically prevailed over the Andaman Sea and the Gulf of Thailand associated with the monsoon trough and active low pressure cell which occasionally located in upper Thailand. Moreover, northern and northeastern regions experienced abundant rainfall in late July caused by typhoon "RAMMASUN (1409)" which downgraded into the tropical storm and tropical depression over upper Vietnam on July 19. The storm finally became low pressure cell and covered over the border between the southern China and upper Vietnam on July 20 resulted in active southwest monsoon prevailing over the Andaman Sea, Thailand and the Gulf of Thailand. The track of RAMMASUN is shown in Figure 2.

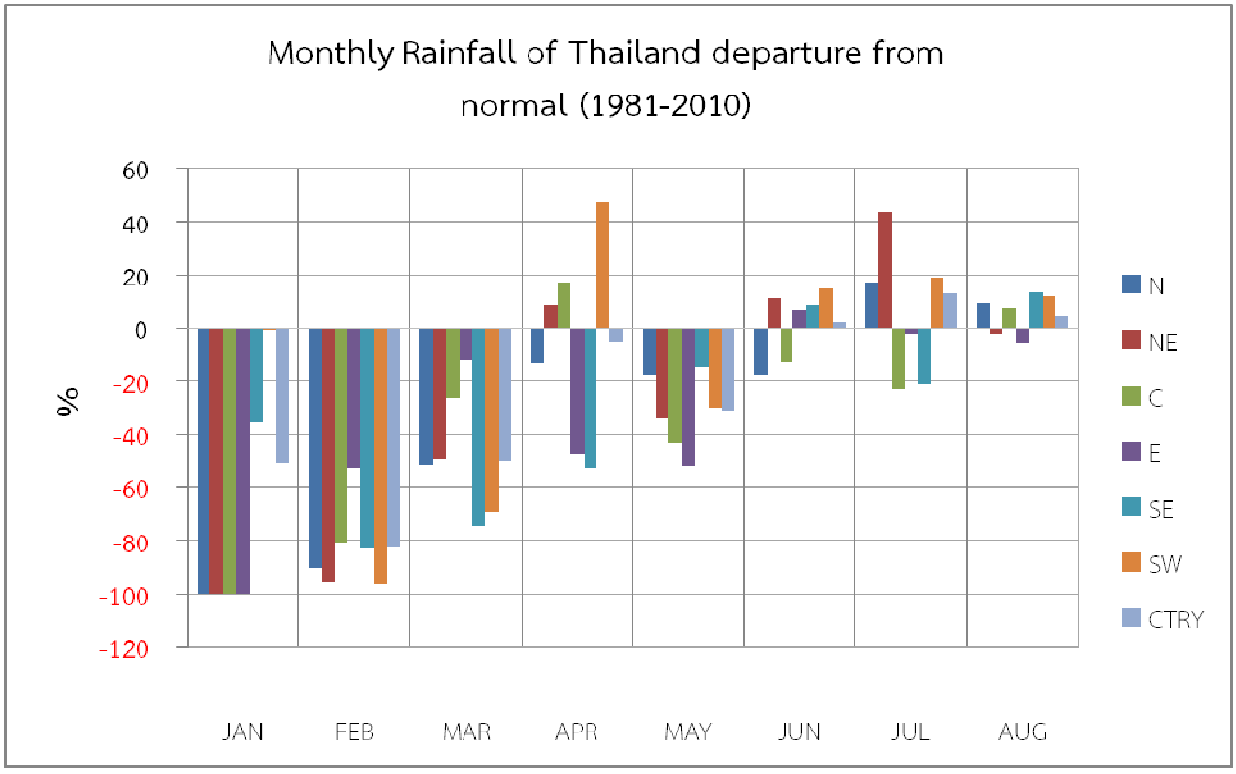
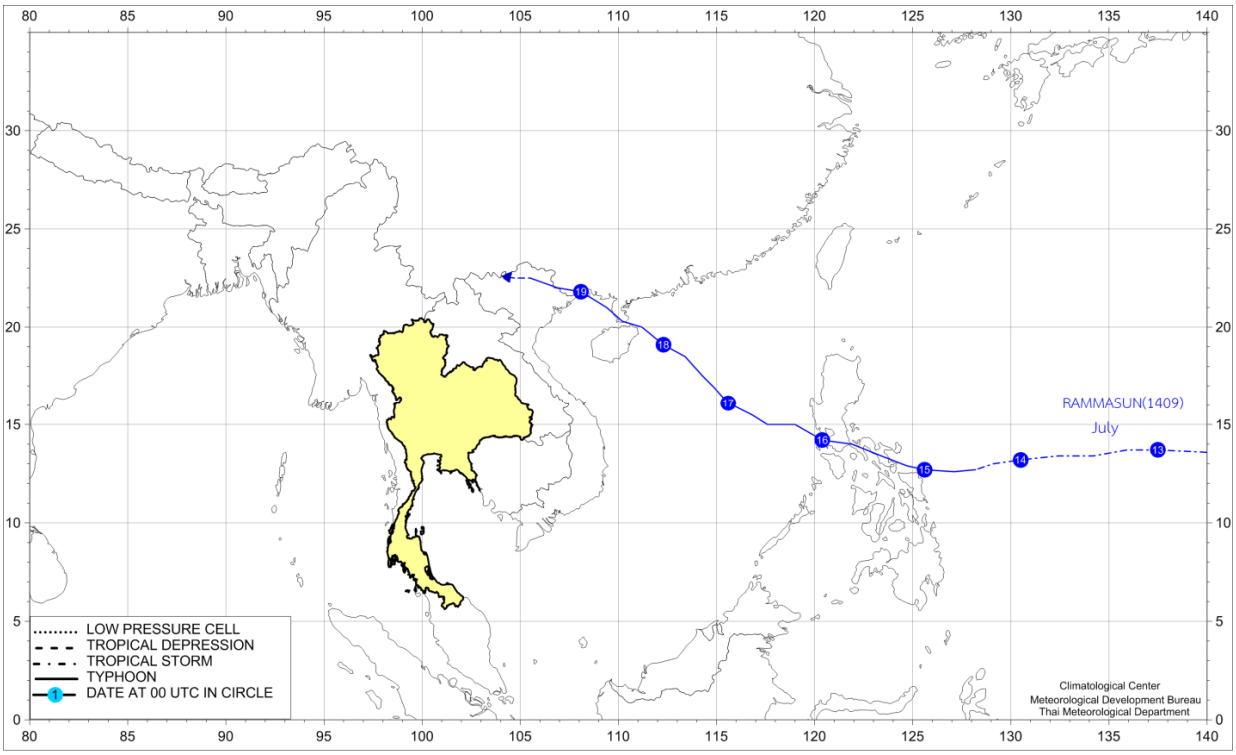


Figure1 The monthly rainfall of Thailand departure from normal (1981-2010)



TRACK OF TYPHOON RAMMASUN(1409) DURING JULY 2014

Figure 2 Tracks of typhoon “RAMMASUN (1409)” affecting Thailand in 2014

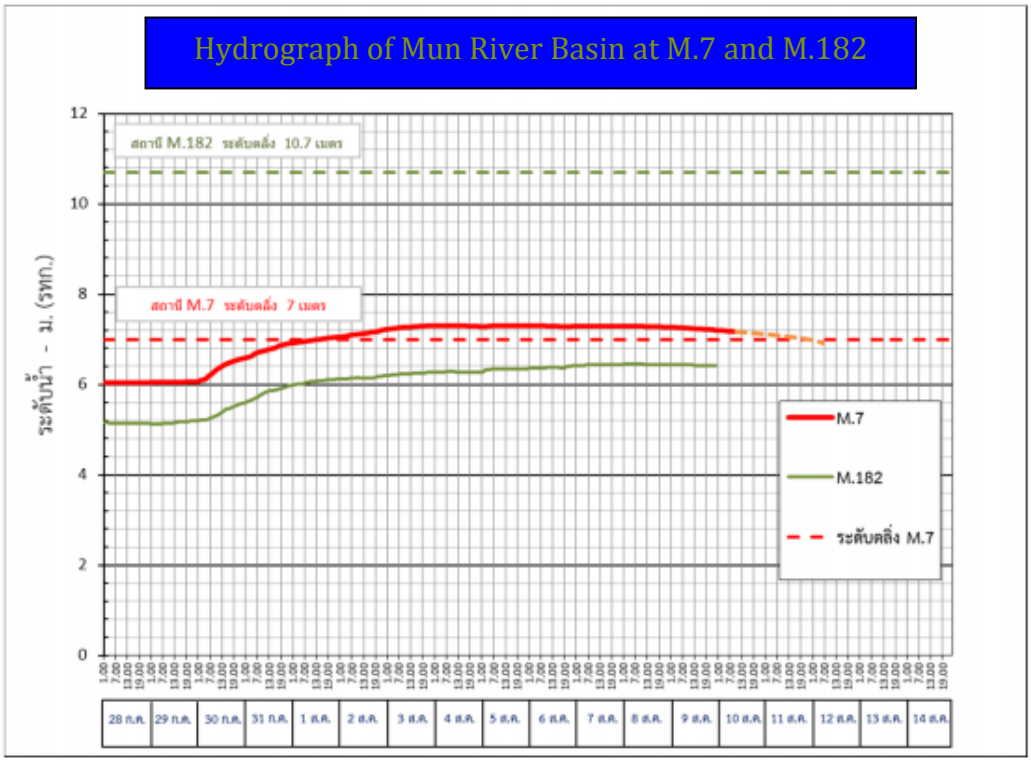
2. Hydrological Assessment (highlighting water-related issues/impacts)

During 1 January until end of September, the trend of the precipitation is nearly average compare with the past record. In upstream, the capital water in the reservoir is rather less than normal so this cause some drought area for the central of Thailand

However the tropical depressions and tropical storms of year 2014 have caused floods in some regions of Thailand as well. The RID was responsible for monitoring, forecasting and mitigation of flood situation.

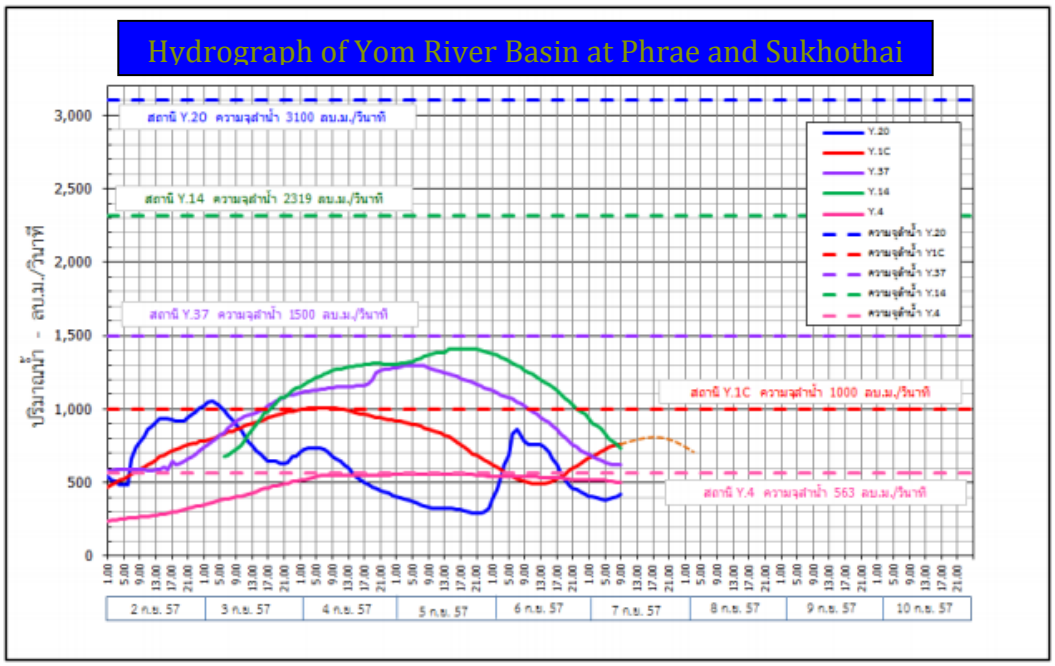
The tropical depression during July - September 2014, caused the flood in some river of Thailand like Mun river basin in the northeastern part as well as Yom and Nan river basin in the northern part. And now the flood watching areas move to the southern part of Thailand at the end of September.

Mun river basin at station M.7 Ubon RatchaThani province, the overbank flow started on 31July and reach to the peak on 6 August by higher than the riverbank 0.30 meters



Nan river basin in upstream of Nan Province, the heavy rainfall cause some of landslide and debris flow in the beginning of August

Yom river basin at Phrae and Sukhothai province the overbank flow started on 4 September and reach peak at the same day by higher than the riverbank 0.07 meters



3. Socio-Economic Assessment (highlighting socio-economic and DRR issues/impacts)

From March to August 2014, High pressure area from China continue to extend to the upper parts of the North. And in the Northeast. As a result, many areas of the North and Northeast are still cool in the morning. The upper portion of the dense fog in many areas. In the afternoon, there will be hot air oven open. And thundershowers in some areas for the central and eastern regions. Winds will be southeast or south winds prevail, making hot areas. Mostly in the upper portion of a thunderstorm in some areas. Then in mid-March There will be continued pressure over upper Thailand heating intermittently with the wind south or southeast wind prevails over the area. As a result, the upper country with hot weather in general. And it is very hot in some areas. The south wind is blowing east or southeast winds over the Gulf of Thailand. And the southern most of the period, making the South. The two sides have reached an area of rain and extreme heat in some days. The winds in the Gulf of Thailand and Andaman Sea to wave about 1 meter of tropical cyclone formation in the North West Pacific and moved through the Philippines into the South China Sea. You are more likely to move near and moving through the east of the country. This puts the southwest monsoon prevails over the Gulf of Thailand and Thailand are intensifying. As a result, the country has increased, especially in the rain with the storm moving through. The southwest monsoon, which is in the southwest.

Tropical cyclone formation in the North-West Pacific and moved through the Philippines into the South China Sea. You are more likely to move near and moving through the east of the country. This puts the southwest monsoon prevails over the Gulf of Thailand and Thailand are intensifying. As a result, the country has increased, especially in the rain with the storm moving through. The southwest monsoon, which is in the southwest.

II. Summary of progress in Key Result Areas
TC Members' Report
Summary of Progress in KRAs

Title of item: Nationwide Radar Composite Map

TMD has developed python program for creating nationwide radar composite map in Geographical Information System (GIS) coordinate from the result of the lowest level intensity techniques (EIL) composite of each radar site by choosing nearest point and maximum value and export to NetCDF binary format.

The procedure to develop nationwide radar composite map is: 1) converting the UF (Universal format) polar radar data format to WMO GRIB2 format (using radartogrib2.py), 2) creating elevation angle composite table (using elevation_angle_composite_table.py), 3) creating composite map with Echo Intensity at the Lowest Level (EIL) (using make_site_polar_saikaso.exe), 4) merging radar site composite map to nationwide (using nationawidecomposite.py) and finally 5) creating nationwide composite map (with GrADS package) as shown in Figure 3.

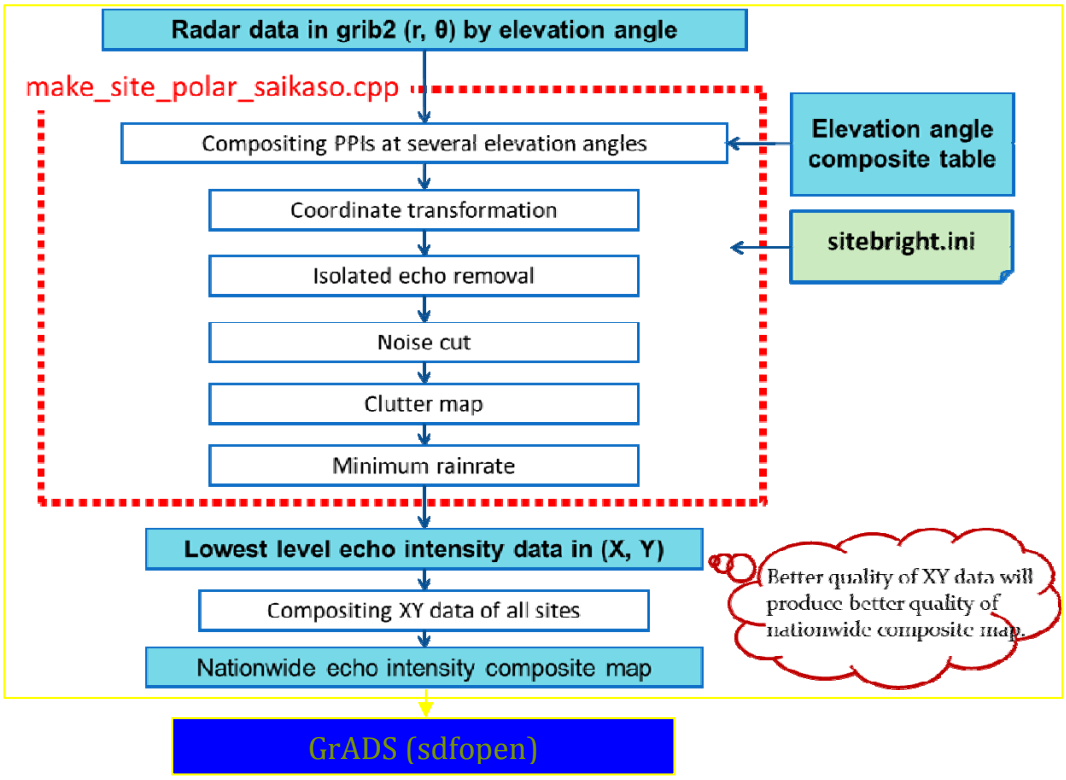


Figure 3. Nationwide radar composite map procedure.

Identified opportunities/challenges, if any, for further development or collaboration:

TMD successful to apply the lowest level intensity techniques (EIL) for each TMD radar site and created nationwide radar composite map with technical assistance of JMA.

JMA plans to hold a technical meeting in Tokyo on the radar composite map in November 2014 to focus on QC technique and QPE technique.

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

KRA =	1	2	3	4	5	6	7
Meteorology						√	√
Hydrology							
DRR							
Training and research							
Resource mobilization or regional collaboration							

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TC Members' Report
Summary of Progress in KRAs

Title of item : Improved the ability of weather nowcasting

Two new dual-polarization C-band Doppler radars have been installed at Sakon Nakhon and Narathiwat Radar stations. It is expected to operate at the end of this year. This new Doppler weather radar will provide high quality meteorological products to improve the ability of weather nowcasting.

Identified opportunities/challenges, if any, for further development or collaboration: *Nil*

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

KRA =	1	2	3	4	5	6	7
Meteorology	√	√					
Hydrology							
DRR							
Training and research							
Resource mobilization or regional collaboration							

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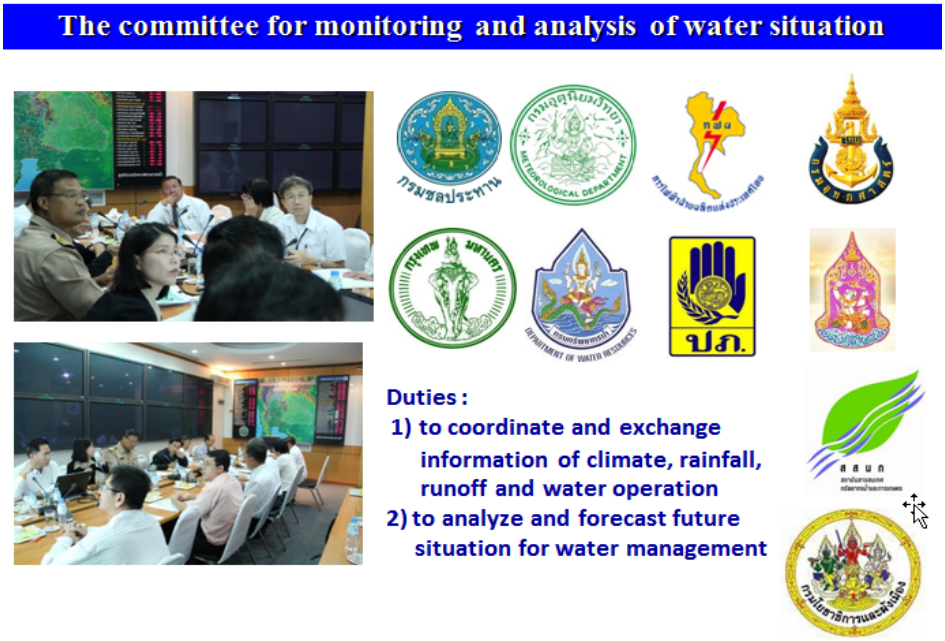
TC Members' Report
Summary of Progress in KRAs

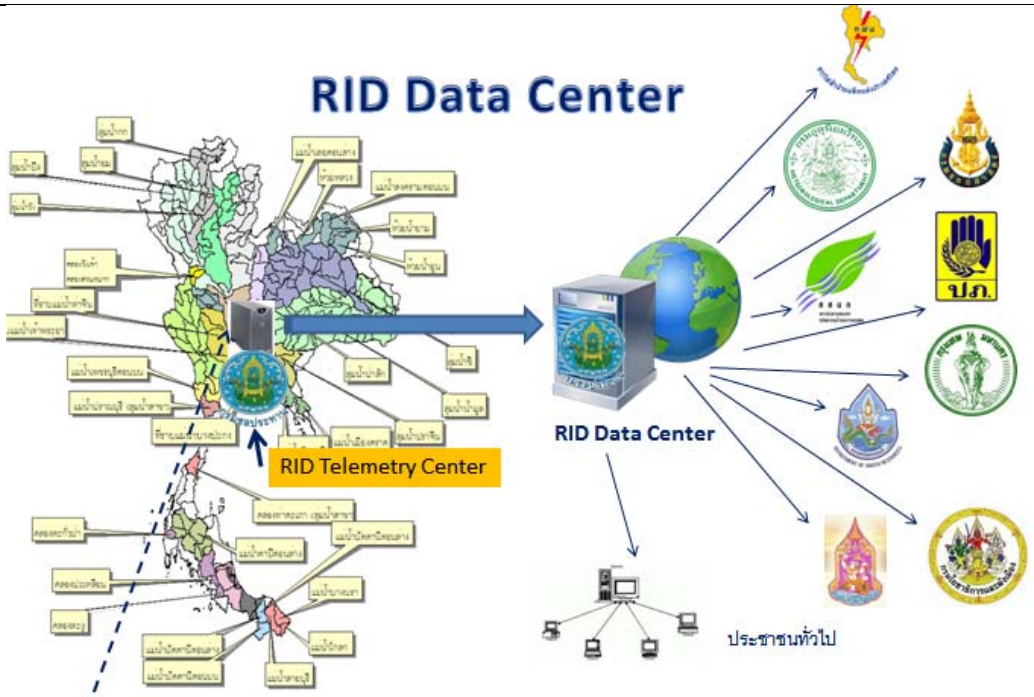
Title of item : Flood warning and develop the communication system

Hydrological Related:

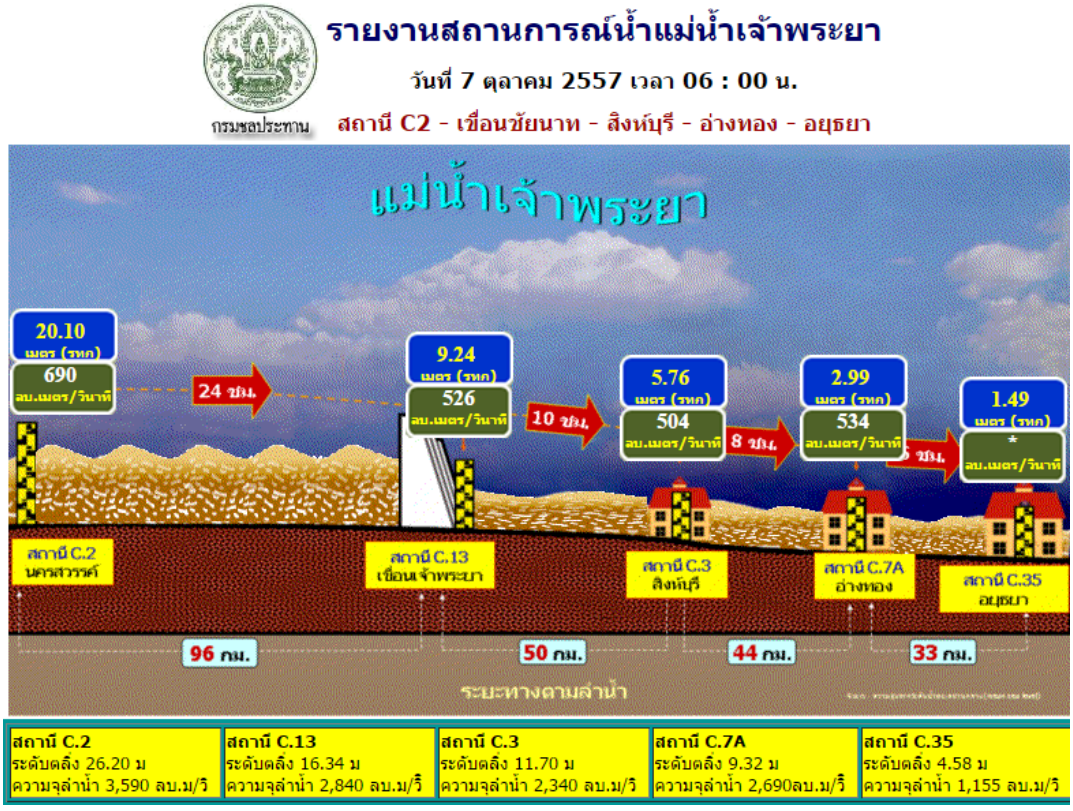
To reduce the lost from Typhoon-related disasters, RID and the other agencies collaborate for monitoring and analysis of flood situation



To improve the telemetering system to the rural area which is the high risk area for flood warning and develop the communication system to disseminate flood information like on website or text messages



Water Data (Water level, Rainfall, Flow)are Sending every 15 minute with Automatic Real Time from the 23 river basin of telemetry systems (Thailand has 25 river basin)



Data information from website of Hydrology center

Identified opportunities/challenges, if any, for further development or collaboration:

From April 2014, RID have the Operation System for Urban Flood Forecasting and Inundation Mapping Project (OSUFFIM) under WGH by choosing Chiang Mai is the pilot city.

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

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Meteorology							
Hydrology	√	√		√			
DRR							
Training and research							
Resource mobilization or regional collaboration							

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TC Members' Report
Summary of Progress in KRAs

Title of item : OSUFFIM project in Chiang Mai

Hydrological Related:

About OSUFFIM project in Chiang Mai, RID start to use the telemetering system to collect the rainfall data and calibrating with the past record compare with the damage from past time relate to GDP.

Identified opportunities/challenges, if any, for further development or collaboration:

From April 2014, RID have the Operation System for Urban Flood Forecasting and Inundation Mapping Project (OSUFFIM) under WGH.

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

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Hydrology		√		√			
DRR							
Training and research							
Resource mobilization or regional collaboration							

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TC Members' Report
Summary of Progress in KRAs

Title of item : To provide reliable typhoon-related disaster information

Hydrological Related:

To provide the impact area and disseminate to the people

To provide the flood information for the committee to make a decision base on model analysis.

Preparation of inundation and flood Hazard Maps for effective policy making in risk management

Identified opportunities/challenges, if any, for further development or collaboration:

Nil

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

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TC Members' Report
Summary of Progress in KRAs

Title of item : Transfer knowledge and collaborate

Hydrological Related: To transfer knowledge and collaborate among RID and the farmers, example the Chief of Water Management of the irrigation project and the water user groups

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

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Meteorology							
Hydrology					√		
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TC Members' Report
Summary of Progress in KRAs

Title of item : The National Disaster Prevention and Mitigation

Disaster Risk Reduction Achievements

The key agency working on disaster preparedness and protection of vulnerable communities against typhoon-related disaster is, according to the National Disaster Prevention and Mitigation Act B.E. 2007, is Department of Disaster Prevention and Mitigation (DDPM). DDPM has been working in close collaboration with other agencies such as Thai Meteorology Department, Royal Irrigation Department, and National Disaster Warning Center.

The National Plan for Disaster Prevention and Mitigation 2009-2014 is the core document used as the strategic guideline for disaster risk management. The plan has the provision that addresses how to protect the people living in the vulnerable communities.

Identified opportunities/challenges, if any, for further development or collaboration:

Nil

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

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Meteorology							
Hydrology							
DRR					√		
Training and research							
Resource mobilization or regional collaboration							

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TC Members' Report
Summary of Progress in KRAs

Title of item : Disaster Risk Reduction

Disaster Risk Reduction Achievements

In 2013, Department of Disaster Prevention and Mitigation has signed MOU with UNDP to implement the 3-year project on Disaster Risk Reduction. Four priorities of this projects are: 1) building capacity of DRR 2) formulation of Disaster Response Operating Procedure 3) implementation of Post Disaster Need Assessment and 4) Standardization of Disaster Criteria.

In 2014, The proudly success of activities of Department of Disaster Prevention and Mitigation is The 6th Asian Ministerial Conference on Disaster Risk Reduction of 2014. The conference was taken place between 22 - 26 June B.E.2557 at the Bangkok Convention Centre. Bangkok Convention Centre at Central World. Bangkok In co-operation with Office of the International Strategy for Disaster Risk Reduction (United Nations' Office for Disaster Risk Reduction) and local agencies involved. Such as the Ministry of Foreign Affairs National Police Department of Defense Office of National Economic and Social Development. And other agencies involved in disaster risk reduction. This meeting was attended by a total of 5,278 people from 63 countries were represented by ministers of 19 countries, the authorities. Senior (Permanent Secretary, Director General of the agency) to 19 countries and other levels (staff, practitioners, academics, scientists, The private sector Civil society representatives And other relevant stakeholder groups) in 25 countries.

Key activities of the ministerial meeting of the Asia to reduce the risk of disasters during 22 - 26 June B.E. 2557 contains the guidelines for the implementation of the Hyogo Framework Phase 2 of the high-level meeting. A meeting of the Cabinet official. Academic conference And Special Session
The success of a conference is (1) the preparation of the Bangkok Declaration. (2) a framework for reducing the risk of disasters in Phase 2, and (3) the proposed participation in mobilizing and Hyogo Framework for Action in Phase 2 of the stakeholder groups

Identified opportunities/challenges, if any, for further development or collaboration:

Nil

Summary Table of relevant KRAs and components (please tick boxes, can be more than one, as appropriate):

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TC Members' Report
Summary of Progress in KRAs

Title of item : Mr. Disaster Warning

Disaster Risk Reduction Achievements

Since 2006, DDPM has implemented a project called **"Mr. Disaster Warning"** to be a mechanism to save lives of the people from hazard such as landslide. This project provides training to volunteers in landslide disaster warning.

This project aims at creating disaster warning network in flashflood and mudslide prone village. "Mr. Disaster Warning" is the village volunteer who has been selected and trained to function as a vigilant, a forewarner and a coordinator. As the vigilant, he will keep the close watch on the development of the potential flood and mudslide and check the level of rainwater in the simple rain gauge installed in his village and then report to the village headman if there is any indication that these will be an emergency. Since the inception of the programme, approximately 23,858 villagers were trained and tasked as the "village – based disaster warning volunteers in their respective villages" DDPM made "Mr. Disaster Warning" manual and distribute to villages and agencies concerned.

Civil Defence Volunteers (CDVs)

CDVs play an important role in disaster management in Thailand on a voluntary basis. Authorized by the Civil Defense Act 1979 and MOI's Civil Defense Regulations 2005, Local governments can recruit local residents with age over 18 years to have 5-days trainings and then grant them the CDV status. Roles of CDVs can be found in disaster response, relief, recovery, prevention, mitigation and preparedness. In other words, all activities in disaster management have been involved by the volunteers. CDVs have been also engaged in general activities organized by government agencies at national, provincial and local level. At present, there are around 1,229,274 CDVs in the country (update data on 31 January 2014).

One Tambon One Search and Rescue Project (OTOS)

DDPM has recognized the immediate need to establish a range of search and rescue capacities at national, provincial and most importantly, local levels. Thus, DDPM has launched the "One tambon One Search and Rescue Team (OTOS) Programme" which will resulted in the establishment, training and long-term maintenance of specially trained search and rescue team in every tambon community.

DDPM has incorporated various government agencies and NGO such as Department of Local Administration, Health Insurance Office, Office of Health Promotion and Support Fund, and Thai Red Cross, to achieve the following OTOS objectives;

- To ensure the safety of life, and the rapid and efficient search and rescue operation,
- To establish efficient search and rescue team at every provinces, district and tambon,
- To enhance capacity and efficient search and rescue team through technical training and drilling,
- To provide first- aid treatment and rapid transfer to the appropriate medical establishment.

At present, the data information on 30 September, 2014, OTOS programe has been implemented of training in 61 Provincial Administration Agency, 1,943 municipalities, 5,074 Sub-district Administration Agency and approximately 74,411 trainees are trained. It is also expected that there will be a SAR team (10 members) based in each tambon (7,078 tambons) throughout the country.

Identified opportunities/challenges, if any, for further development or collaboration:

Nil

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KRA =	1	2	3	4	5	6	7
Meteorology							
Hydrology							
DRR	√	√			✓		
Training and research					✓		
Resource mobilization or regional collaboration							✓

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