

WGH AOP2014 Review and AOP2015 Plan

Kamoto Chair of WGH

TC 9th Integrated Workshop:
20-24 October, 2014, Bangkok Thailand

Summary of WGH AOPs in 2014 and beyond

	Projects	Driver	Duration
AOP1	Assessment System of Flood Control Measures on Socio-economic Impacts	Korea	2008-2014
AOP2	Extreme flood forecasting system	Korea	2012~2016
AOP3	Estimation for Socio-economic Impact of Sediment-related Disaster	Japan	2013~2015
AOP4	Development and Application of Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) for TC Members	China	2014~2017
AOP5	Extension of Xin'anjiang Model Application in Selected River Basins in TC Members	China	2013~2016
AOP6	Guidelines for extreme flood risk management in TC region	Korea	2013-2015
AOP7	Study on Prediction of Debris flow and Shallow landslide by the Satellite Rainfall Data	Japan	2013-2017
AOP8	Project of Synergized Standard Operating Procedures for Coastal Multi-hazard Early Warning System (SSOP)	TCS	2013-2014

Budget Allocation for WGH Activities in 2014

➤ The budget of TCTF for WGH activities in 2014

1	Support to attend Integrated Workshop (IWS) and other activities	10,000
2	Support the ASFCM Application in TC members - <i>AOP1</i>	3,000
3	Support to the data collection (3rd field survey) in selected Members for the project on Extreme Flood Forecasting System – <i>AOP 2</i>	3,000
4	Support activities related to OSUFFIM - <i>AOP4</i>	4,000
5	Support to host the workshop for the project on Guidelines for extreme flood risk management in TC region led by Korea - <i>AOP6</i>	3,000
	Total	23,000

➤ The Special Request of TCTF for WGH Training in 2014

1	Support for OSUFFIM training – <i>AOP4</i>	3,500
2	Support for on-job training of Xin'anjiang Model Application– <i>AOP 5</i>	5,500
	Total	9,000

Summary of WGH AOPs in 2015 and beyond

	Projects	Driver	Duration
AOP1	Project of Synergized Standard Operating Procedures for Coastal Multi-hazard Early Warning System (SSOP)	TCS	2013-2015
AOP2	Extreme flood forecasting system ✓	Korea	2012~2017
AOP3	Estimation for Socio-economic Impact of Sediment-related Disaster ✓	Japan	2013~2016
AOP4	Development and Application of Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) for TC Members ✓	China	2014~2017
AOP5	Extension of Xin'anjiang Model Application in Selected River Basins in TC Members ✓	China	2013~2016
AOP6	Guidelines for extreme flood risk management in TC region ✓	Korea	2013-2016
AOP7	Study on Prediction of Debris flow and Shallow landslide by the Satellite Rainfall Data ?	Japan	2013-2017

Budget Allocation for WGH Activities in 2015

➤ The budget of TCTF for WGH activities in 2015

1	Support to attend Integrated Workshop (IWS) and other activities	10,000
2	Support summary seminar related to field survey of Extreme Flood Forecasting System in selected countries – AOP2	3,000
3	Support activities related to OSUFFIM – AOP4	4,500
4	Support activities related to Xin'anjiang Model Application – AOP5	3,000
5	Guidelines for extreme flood risk management in TC region – AOP6	2,500
	Total	23,000

➤ The Special Request of TCTF for WGH Training in 2015

1	<i>Attachment training for 2-3 persons from selected Members</i>	4,500
2	<i>Support hydrologists to participation of 7th WWF 2015 in Korea</i>	4,500
	Total	9,000

AOP1: Assessment System of Flood Control Measures on Socio-economic Impacts

➤ Guideline for Structural Flood Control Measures Assessment System

1. Introduction

- What are the flood control measures?
- Economic analysis of flood control measures

2. Economic analysis of flood control measures

- Estimation of benefits
- Estimation of cost
- Economic Evaluation

3. Estimation of flood damage cost

- Benefit factors in MD-FDA
- Basin constitution of MD-FDA
- Asset investigation by administrative district
- Estimation of inundated inclusion ratio
- Estimation of inundation damage cost
- Estimation of total damage cost
- Comparison of improved assessment method and the MD-FDA

4. Economic evaluation on structural flood control measures

- Procedure for economic assessment of structural flood control measures
- Early set up & building topographical, hydrological data required
- Estimation of flood stage
- Estimation of inundation area at river
- Economic analysis

➤ Manual for Assessment System of Flood Control Measures (ASFCM)

1. Introduction to ASFCM

2. Execution of ASFCM & GUI

- Program installation
- Initial run screen
- Title bar
- Menu collection
- Tool bar
- Menu tree etc.

3. Initial setting

- Unit setting
- Area setting
- Asset data entry

4. Flood stage analysis

- Analysis of river cross-section & location using HEC-GeoRAS
- Stream correction & flood stage analysis using HEC-RAS

5. Estimation of flood inundation zone

6. Estimation of flood damage amount

7. Economic analysis

AOP2: Extreme Flood Forecasting System

● Purposes of AOP2

- *An comparative analysis of the flood characteristics* in the 4 selected rivers(Chao Phraya river basin, Nakdong River basin, Pampanga river basin, including Nam Ngum river basin in 2013) *with on-line, field survey and the results of flood vulnerability analysis*
- *Investigation of the flood forecasting systems and suggestion of an appropriate system* for each countries
- *Sharing suitable flood forecasting method and technology* from simple to advanced system
- *Establishment of extreme flood forecasting pilot system*

AOP3: Estimation for Socio-economic Impact of Sediment-related Disaster

This study is to establish common collecting sediment disaster event format and methods of investigation for the disasters to estimate estimation for socio-economic impact of sediment-related disaster and to share common technical background in TC members.

Hong Kong colleague has already sent a event filled format.

In the early hours of August 20, some parts of Hiroshima Prefecture were hit by extremely heavy rainfall of up to 87 mm per hour for a cumulative total of 247 mm. This extreme event caused sediment disasters in a variety of locations to the north of Hiroshima City, including 107 debris flows and 59 slope failures. As of September 10, the toll included 73 fatalities, 1 person missing and 5 000 seriously damaged houses

AOP4: Development OSUFFIM for Selected Pilot City

OSUFFIM (Operational System for Urban Flood Forecasting and Inundation Mapping) to promote the capacity of early warning of urban flood and emergency response, urban flood forecasting and inundation mapping. The challenges faced the complexity of the human-influenced urban systems, which makes the inundation mapping a very complicated, and make it necessary of the participation of research institutes and governmental authorities.

China is leading this with Sun Yat-Sen University starting from 2014
Department of Irrigation and Drainage (DID) of Malaysia;
Royal Irrigation Department (RID) of Thailand,
National Center for Hydro-Meteorological Forecasting (NCHMF) of
Vietnam

Pilot cities: Dongguan city of Southern China, Chiang Mai, Thailand
Malaysia's pilot cities will be selected.

A training workshop is scheduled in SYSU in early December 2014.
Implementation the OSUFFIM system in the pilot cities and one month training are next year.

AOP5: Extension of Xin'anjiang Model Application in Selected River Basins in TC Members

As one of the conceptual, rainfall-runoff (CRR) models, the Xinanjiang model was developed in 1973 by the Hohai University. It has been used to forecast inflow for the Xinanjiang reservoir and was published in 1980. Since then, it was improved and widely used for flood forecasting in humid regions with rich vegetation, well developed soil zone, where the infiltration rate is high, making surface runoff low and interflow or subsurface flow high.

National Flood Forecasting System In China started in 1998 using this Xin'anjiang Model.

Bureau of Hydrology (BOH) of China with Department of Irrigation and Drainage (DID) of Malaysia from 2013 to 2016.

DID, Malaysia has commenced developing flood forecasting system by using Xin'anjiang Model for Segamat River Basin.

An associated training course with AOP4 has been scheduled to be held at Sun Yat-Sen in Guangzhou, China in early December 2014

AOP6:Guidelines for Extreme Flood Risk Management

Guidelines for Extreme Flood Risk Management - Focus on the practical cases-

1) Introduction

2) Framework of Extreme Flood Risk Management

- Extreme Flood Definition
- Framework of Extreme Flood Response
- Status of TC member Flood Forecasting

3) Hydrological Data Monitoring

- Standards & Rules of Hydrological Data Monitoring in International Organization
- Status of TC member

4) Forecasting and Warning

- Standards & Rules of Flood Forecasting in International Organization
- Status of TC member
- Framework of Flood Forecasting for Extreme Flood (LEVEL1-LEVEL4)

5) Structural Extreme Flood Control Measures

- General Structural Flood Control Measures
- Status TC members of Structural Flood Control Measures
- Structural Flood Control Measures for Extreme Flood

6) Non-structural Extreme Flood Control Measures

- General Non-structural Flood Control Measures
- Status TC members of Non-structural Flood Control Measures
- Non-Structural Flood Control Measures for Extreme Flood

7) Dam Operation

- Status of Dam Operation for Flood Control in TC Regions
- Dam Operation for Extreme Flood Control

8) Extreme Flood Adaptation

- Framework of Extreme Flood Adaptation

AOP7: Study on Prediction of Debris flow and Shallow landslide by the Satellite Rainfall Data

The aim of the study is to develop prototype program which shows high potential disaster areas of near real time by satellite data of both rainfall and topographic conditions. It reflects some concepts of the “REPORT OF THE PROJECT ON HAZARD MAPPING FOR SEDIMENT RELATED DISASTER” authorized by the Typhoon Committee in December 2012. Outputs of this study would be useful for member countries’ officials being in charge of disaster warning and operating evacuation. Its period is from 2013 to 2017 and the ICHARM have studied feasibility of the model on soil water index in Hofu City of Japan. In 2014, the activities postponed as main researcher transferred, and ICHARM is requesting necessary budget for its activities of 2015.

Others

- WGH session in 7th World Water Forum (12-17 April 2014). It will be one of WGH discussion activities.
- Operation of TC WGH Webpage (<http://tcwgh.hrfco.go.kr>)
- SSOP project formation was greatly contributed by TCS (Olavo san, Jinpin san).
- New Chair and Vice Chair of WGH will be appointed on 47th annual session.

“The Shapers of New Asia”

“They include YOU and ME....”

Thanks

