CTCN assistance in Thailand

Strengthening Bangkok's Early Warning System to respond to climate induced flooding

Deliverable 6 - Activity 4 Dissemination workshop

Draft final 10st November 2017

This report has been prepared under the DHI Business Management System certified by Bureau Veritas to comply with ISO 9001 (Quality Management)

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Contents

1 Dissemination workshop

This report summarises the workshop conducted under the project activity on dissemination and sharing (Activity 4).

The workshop addressed experiences from the technical assistance with focus on issues of urban flooding, rainfall forecasting, climate change early flood warning. Representatives of local, regional and national authorities had been invited to follow presentations and participate in the discussions addressing issues around urban flooding. Further, experiences from the CTCN urban flood TA project in Jakarta was also shared by the TA partners.

1.1 Workshop Schedule

The workshop took place in Bangkok, 7 November 2017 at BMA premises. The workshop was conducted with the following program:

9:00 Seminar Facilitator and chair: Ms. Varaporn Buranautama, DHI Thailand

9:15 Opening speech: Dr. Suthimol Ketsomboon, Deputy Director, Department of Drainage and Sewerage BMA and Mr. Sompong Wiangkaew, Deputy Permanent Secretary BMA

9:30 Appreciation of project, overview and key objectives, Mr. Sten Lindberg, DHI Denmark

9:45 BMA current monitoring system and web access, Mr. Pavaris Meebangsai, BMA

10:00 Lessons learned from the CTCN-Jakarta Flood Modelling case, Yus Budiono, Jakarta Research Council

10:30 The Sukhumvit 1D-2D hydraulic model, Dr. Somchai Chonwattana, DHI Thailand

11.00 Radar data and forecasts – a key sensor for reliable flood forecasts, Dr. Sutat Weesakul, Director of HAII

11:15 The flood warning system – MIKE Operations, Lars Yde. DHI Denmark

11:30 Experiences, lessons learned and perspectives, Sten Lindberg, DHI Denmark

11:45 Discussions

11:55 Closing remarks from BMA, Dr. Suthimol Ketsomboon, BMA

All presentations from the workshop are included in Appendix A.

Figure 1. Opening speech, Mr. Sompong Wiangkaew

1.2 Workshop participants

Fifty-two persons participated in the workshop. Organisation presented at workshop was BMA, Royal Irrigation Department, Thai Meteorological Department, Hydro and Agro Informatics Institute, Kasetsart University, Department of Water Resources, CTCN, Jakarta Research Council, DHI Indonesia, DHI Denmark and DHI Thailand. All full list of participates is given in table 1.

Name	Title	Organisation
Mr. Sompong Wiangkaew	Deputy Permanent Secretary	BMA
Mr. Narong Ruangsri	Acting Director, Deputy Director Department of Drainage and Sewerage	BMA
Dr. Suthimol Ketsomboon	Deputy Director Department of Drainage and Sewerage	BMA
Mr. Ariya Mekakul	Director of Drainage Information System Division	BMA
Mr. Sunsern Rueangrit	Chief of Flood Control Center, Drainage Information System Division	BMA
Mr. Praichart Plieanpleam	Chief of Information Division	BMA
Mr. Pavaris Meebangsai	Statistic Offcicer	BMA
Mr. Sathaporn Muangliang	Communication Officer, Professional level	BMA
Mr. Wirat Thamthong	Communication Officer, Professional level	BMA
Mr. Nattapol Siwthaisong	Civil Engineer, Practitional level	BMA
Ms. Urai Leesamran	Administration officer, Professional level	BMA
Ms. Chutima Masngammuang	Computer Technical Officer, Professional level	BMA
Mr. Vishu Suktheva	Public Works Technician, Professional level	BMA
Mr. Pravit Worawong	Communication Officer, Professional level	BMA
Mrs. Sudarat Phesat	Administration officer, Professional level	BMA
Mrs. Patcharee Thamornpol	Administration officer, Professional level	BMA
Mrs. Chayanuk Thieanboon	Administration officer, Professional level	BMA
Ms. Areeya Nampao	Administration officer, Practitinal level	BMA
Mr. Thanadit Thanarinna	Electric Engineer, Practitional level	BMA
Mr. Sato Prathinpong	Electric Technician, Professional level	BMA
Mr. Thongchai Minsri	Communication Officer, Professional level	BMA
Mr. Padung Jittasampanporn	Action Chief of Repair and Maintenance Group 1	BMA
Mr. Niyom Vipattanaporn	Electric Engineer, Practitional level	BMA
Mr. Wirote Kunnui	Civil Engineer, Professional level	BMA
Mr. Chokchai Tankanusan	Civil Engineer, Practitional level	BMA
Mr. Anirut Kaewkanha	Electric Technician, Practitional level	BMA
Mr. Nipat Onnlamun	Civil Engineer, Practitional level	BMA
Mr. Chakrit Tangkupanan	Engineer	BMA
Mr. Kitchapat Yinhiran	Sanitary engineer Specialist	BMA
Mr. Tin Hongthong	Director of Survey and Map Division	BMA
Mrs. Napa Vilaikruat	Chief of Civil Strategy and Drainage Division	BMA
Ms. Chutimol Umphan	Policy and Plan Analysis Officer, Professional level	BMA
Ms. Suthida Pornpermpool	Director of Waste and Hazard waste and Sewage Management	BMA
Ms. Suchada Borsub	Sanitary Officer Practitioner	BMA
Mr. Chamapan Masjorn	Computer Technical Officer, Professional level	BMA
Mr. Nat Srisukon-anan	Department Director	BMA
Mr. Vichian Ketpakdeekul	Senior Civil Engineer	BMA
Mr. Prayoon Yenjai	Director of Water resources Management Section	Royal Irrigation Department
Mr. Assada Kitpayung	Irrigation Engineer, Practitional level	Royal Irrigation Department
Mr. Saravuth Sakol	Irrigation Engineer, Professional level	Royal Irrigation Department
Dr. Sukunyanee Yawinchan	Director of Weather Forecast Division	Thai Meteorological Department
Mr. Fatah Mathawee	Meterologist Professional level	Thai Meteorological Department
Dr. Sutat Weesakul	Director	Hydro and Agro Informatics Institute
Mr. Narongrit Ruengdirok	Research Assistant	Hydro and Agro Informatics Institute
Napaporn Pieamsa-nga	Assist Prof Dr.	Kasetsart University, Department of Water Resoucese Engineering
Anna-Katharina Deinhard	Consultant	CTCN
Budy Wiryawan	CTCN Project Coordinator	DHI Indonesia
Yus Budiono	Researcher	Jakarta Research Council
Sten Lindberg	Senior Engineer, Urban Water	DHI Denmark
Lars Yde	Senior Engineer, Urban Water	DHI Denmark
Dr. Somchai Chonwattana	Engineer, Modeling expert	DHI Thailand
Varaporn Buranautama	Thailand Office Manager	DHI Thailand

Table 1. List of participants in the workshop.

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1.3 Workshop summary

Initially Mr. Lindberg presented key project objectives and project time schedule. Key project objectives was:

- Build, calibrate and optimize an advanced hydraulic model
- Link the model with SCADA and rainfall forecast radars
- Produce and publish web-based flood maps
- Provide training in flood modelling

He concluded that all of these objectives have been completed. Mr Lindberg explained about main features of the drainage system in the Sukhumvit area in Bangkok: the system is very flat; all water has to be pumped out the system to canals that drain the water to Chao Phraya River; and the system is exposed to a large infiltration.

He also illustrated the importance of having a fast and reliable rainfall forecast as input to a flood forecasting system and that the system often should generate new forecasts. This is especially important in a flat drainage system as Bangkok, when exposed to high intensive rainfall.

Mr. Sunsern presented the BMA SCADA system and flood centre. BMA has an extensive network of rain fall gauges, water level measurement station in canals of rivers and flood levels measurements station

Yus Budiono presented a flood risk study that have been conducted in Jakarta, Indonesia. The study included socio-economic analysis and policy recommendation for rearrangement of polders and operation of those have been developed. The project have been supported by CTCN.

Dr. Somchai Chonwattana presented the hydrodynamic model that is implemented in the flood warning system. This model is a combined 1D-pipe system model and a 2D-surface model.

Dr. Sutat Weesakul, presented different type of radar data and forecasts models. Important features of a warning system.

Mr. Lars Yde presented the flood warning system architecture and the web interface frontend. Presentation included a live demonstration of the system.

Mr. Lindberg closed the technical part of the workshop with the following comments and recommendations:

System understanding and system management

- Improved /automate pump control – prepare for the high flows
- Remove all the inlets from the canals that backfills the system with water during dry weather
- Establish a more comprehensive understanding of the drainage capacities, not only in the Sukhumvit demonstration area, but for all flood risk areas

BMA policies and management priorities:

- Update and maintain asset databases, with info on pipes and pumps
- Appoint a team being responsible for the BMA radar and the use of the data
- Appoint a team to develop and enhance their hydraulic competences and start to work with the available modelling tools
- Acknowledge these teams, give them management attention – their job is also important

Figure 2. Workshop participants (only partial group)

Appendix A – presentations from the workshop