# Roadmap Toward Effective Flood Hazard Mapping in Malaysia

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## 1. Introduction

This report was prepared to present the finding on the Regional Focus Training Course on Flood Hazard Mapping conducted by JICA for participant from South East Asia and China. The report will include the benefit on issues and action learned from the course and also to give feed back to improve the course for future exercise.

## 2. Content of the course.

The course was designed on action basis. These include lectures, field works and site visit.

The most impressive and relevant lectures are "Effectiveness of Flood Hazard and its challenges" given by Assoc. Prof. Toshitaka KATADA and "Town Watching" by Prof Yuujirou Ogawa. The simulation of evacuation process will definitely make the residents understand the important of the public to respond on some disaster event before waiting for the Evacuation Order. The Town Watching on the other hand shows the important to understand the need of the residents i.e. development of Flood Hazard Map include from resident perspective.

## 3. Action in Malaysia

The main problem in Malaysia compare to Japan is data or map is not easily available. We need to find cheap solution to develop important information such as ground level data, road information, and facilities in GIS format as soon as possible.

My organization is involved in research base project. All finding from the research shall be provided to the implementing agency i.e. Department of Irrigation and Drainage.
Malaysia is facing two type of flood. Firstly is monsoon flood and secondly is flash flood. The monsoon flood normally can be predicted about 1-2 day earlier. There fore flood hazard map will be useful to educate resident on what action can be taken by the resident in order to evacuate smoothly. Information such as evacuation center, important item to bring along, route to take to evacuation center and how to handle children will reduce the number of casualty. The flash flood becoming common phenomena due to uncontrolled development. Flood hazard map produce in Japan due to bank break will be very useful since at present government still not clear how to handle this situation and resident who are affected by flood still in confuse.

Actions that my institute can implement can be categories in there part which is short term, mid term and long term:

a. Short Term action
   - seek for simple hydrological and hydraulic technique required in developing flood inundation area
   - provide training in developing flood inundation map
   - Create awareness to local government on the important of Flood Hazard Map

b. Mid term
   - develop survey strategies to acquire information about resident perception toward flood.
   - Develop flood inundation and hazard map for at least 2 river basins
   - Provide training for local government on the use of flood hazard map
   - Identify method to disseminate information regarding flood hazard map to the public

c. Long term

- Provide training to the resident on the important of Flood Hazard map
- Develop and improve technique in developing flood hazard map.
- Review the approach in developing flood hazard and dissemination

## 4. Flood management in Japan

After 3 weeks in this course, I discover that Japan have implemented many approaches in reducing flood problem. It involved from hard engineering such as river improvement work started about 100 years ago at Arakawa River, construction thousands of dam, pumping station etc.

On the non structural measures , flood forecasting and warning and education program to the public including Flood Hazard Map have shows that Japan is very far a head compare many advance country in the world. This program is going to be successful with the support from most advance technology.

My suggestion to make the flood management in Japan more effective is continuous education program. Years from now, more and more educated public will show the effectiveness of any project proposed by government.

From my early observation, percentage of impervious area is very high. This is due to heavy development in the river basin. PWRI could conduct research to produce material to replace asphalt or concrete in pavement or construction of road. The use of pervious material will contribute to reducing the flood peak.

Promote the use of on site detention cum rainwater harvesting at residential area. It will be effective for normal storm but the effectiveness on typhoon need to be investigated further.

## 5. Suggestion to improve the course

Some of suggestions to improve the course are to include 2 day of training on develop simple model either 1D or 2D for a small area. The participants will involve in

- Processing rainfall data
- Data input in the development of hydraulic model
- simulation technique either 1D or 2D hydraulic modeling
- method of automatic delineation of flood hazard
- To carry out simulation session, extra tutors are required to assist the participants.

The development of computer modeling will provide better understanding and appreciation for participants on producing flood hazard map.

## 6. Conclusion

I would like to conclude that the course has provided me useful information on the development of flood hazard map both from the perspective of government and the resident. Without these consideration of Flood Hazard Map will be meaningless.