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APEC Workshop on Enhancing Participation in Flood Disaster Preparedness through Community-based Hazard Mapping

Manual for Training

15 - 24 June 2021, Virtual, Malaysia

APEC Emergency Preparedness Working Group

October 2021

APEC Project: EPWG 02 2019A

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Asia-Pacific
Economic Cooperation

APEC Workshop on
Enhancing Participation in
Flood Disaster Preparedness through
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October 2021

Host:

Organizer:

Partners:

In association with:

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The views expressed in the report do not necessarily reflect the views of APEC or of any one of the member economies. The use of any software in the manual and workshop, and boundaries and names shown, and the designations used on any maps in the manual also do not imply official endorsement or acceptance by APEC.

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Introduction to the Manual

Objective

The objective of this manual is to assist trainers in organising and conducting a Training for Trainers on the Town Watching approach at the economy level.

The objective of the training in the Town Watching approach is:

- To enhance the capacity of community trainers to enhance community resilience towards flood disasters, to address the issue of increasing flood risk as result of climate change and growing human settlements in flood-prone areas;
- To share and create ownership by providing tools for developing community-based maps and preparedness procedures using the Town Watching approach; and
- To empower participants to implement the methodology during the workshop and propose a plan for similar training and dissemination in their locality.

Expected Outcomes

Participants can:

- Enhance their knowledge and skills on improving community resilience towards flood disasters through preparedness;
- Learn to conduct the Town Watching approach for flood disaster preparedness through community-based hazard mapping; and
- Develop a plan for implementation of a Town Watching approach at their community level.

Target audience

The target audience are potential community trainers in APEC economies who would like to conduct a Training of Trainers (ToT) workshop, although the training materials are suitable for use in any community flood response programme.

Adaptation of materials

The materials can also be repurposed for directly training community groups.

Trainers are encouraged to modify the materials according to their own situation.

Translation may also be needed to facilitate training at the local community level.

Different economies may already have websites for the local community on preparing for flood response, and these can be referred to for resources. For example,

- Chile has relevant information through the website www.onemi.cl;
- Chinese Taipei has a website at easy2do.ncdr.nat.gov.tw/community/;
- Japan has the Town Watching information for the community at the respective local government websites; and
- Malaysia has a website at www.civildefence.gov.my/.

Background of this manual

This manual and the related slides available on www.mywp.org.my/apec-workshop have been developed from materials presented at the virtual APEC Workshop on Enhancing Participation in Flood Disaster Preparedness through Community-based Hazard Mapping, 15 - 24 June 2021 (APEC project EPWG 02 2019a). The workshop was conducted virtually because of the Covid-19 situation. The writers of this manual have been normally engaged in physical face-to-face workshops before the Covid-19 pandemic and so the guidance materials presented here can be used in either a virtual or a physical setting. We recommend face-to-face training if possible, and some participants of the virtual workshop have given feedback that a physical workshop would be preferable for them, especially in relation to the on-site field exercise.

The workshop materials draw upon the experience of the trainers in Town Watching in the Malaysian context (Appendix 1) and so many of the examples and the videos used for on-site exercises are, of course, for the Malaysian situation. It builds on the Flood Ranger module and trainers may also refer to the relevant website at www.riverranger.my/FloodRanger/.

Reference to the Malaysian scenario for flood disaster management and to the community Flood Ranger programme are made in the training materials. For other economies, trainers may prefer to replace this information with that for local flood response programmes in their own economy.

Workshop materials and manual for training

All the materials from the virtual APEC Workshop are made available online at www.mywp.org.my/apec-workshop. The materials fall under two categories:

a) Training and Implementation of Town Watching Approach

   This includes presentations and slide decks which cover the steps for conducting Town Watching; briefing on the field exercise; presentation on the use of online mapping tools; step-by-step use of the Town Watching methodology and field application; guidance on implementing the Town Watching exercise, virtually or physically; group mapping exercise in

participants' locality; facilitation of groups' presentation of the local maps made; and finally explanation on of emergency survival bags including use of of drinking water filtration kits. Videos formed an important part of the resource material for on-site observations, due to the virtual training mode. Videos are available upon request to the Project Overseer, Dr Zelina Ibrahim, zelina@upm.edu.my, or to the Malaysian Water Partnership Secretariat, Ms Athirah Lim, athirahlim@gmail.com.

b) Group Presentation and Reflection

At the end of the training, participants reviewed and presented proposals for planning and adaptation of the training modules for economy level training. This was conducted through break-out group discussion and group presentation. The maps and presentations made provide examples of facilitation for potential trainers and form part of the materials in this manual.

The workshop report provides an overview of all the presentations and exercises conducted in the virtual workshop.

This manual for training is covers the following modules:

1. Town Watching Exercise Briefing and Examples;
2. Use of Electronic Mapping Applications (E-Maps);
3. Town Watching Exercise;
4. Survival Preparation and Emergency Kits;
5. Way Forward: Planning Local Training.

How to use this manual

The manual provides guidance on the order of presentation of information.

The slide decks of training, which was conducted in the workshop, are available on the website. Trainers should download both materials in preparation for their own training workshop. Videos are available upon request to the Project Overseer, Dr Zelina Ibrahim, zelina@upm.edu.my, or to the Malaysian Water Partnership Secretariat, Ms Athirah Lim, athirahlim@gmail.com.

Guidance on organising a workshop is provided in Appendix 2.

View all the different slide decks to understand the progress in description and explanations presented.

Trainers may have to modify the slide deck in order to make them relevant for their own locality.

Abbreviation	Meaning
72H	72-hour
ADB	Asian Development Bank
ADRC	Asian Disaster Reduction Center
AIDEP–ACCEDER	*Análisis Histórico, Investigación en terreno, Discusión de Prioridades, Elaboración de Mapa, Planificación–Alarma, Comunicación, Coordinación, Evaluación Primaria, Decisiones, Evaluación Complementaria, Readecuación del Plan* Analysis of the history, Investigation of the terrain, Discussion of priorities, Elaboration in maps, Planning–Alarm, Communication, Coordination, Preliminary Evaluation, Decision, Complementary Evaluation, Readjustment of the Plan
ASF	APEC Support Fund
CB4DR	Clothing Bank for Disaster Relief Project, Malaysia
CBDRM	Community-based Disaster Risk Management
CBFHM	Community-Based Flood Hazard Map
CBFRP	Community-Based Flood Response Plan
CFGC	Community Flood Gathering Centre
CSO	Civil society organisation
DID	Department of Irrigation and Drainage
DRR	Disaster Risk Reduction
E-Maps	Electronic mapping applications
EPWG	Emergency Preparedness Working Group
ERP	Emergency response plan
F	Female
GEC	Global Environment Centre
GIS	Geographic Information Systems
ICT	Information and Communication Technology
IPCC	Intergovernmental Panel on Climate Change
KML	Keyhole Markup Language
KMZ	Keyhole Markup language Zipped
LCFGC	Local community flood-evacuation gathering centre
M	Male
MPK	*Majlis Perbadanan Kelang* Klang Municipal Council

MS	Microsoft
MyWP	Malaysian Water Partnership
n.d.	Not determined
NADMA	National Disaster Management Agency, Malaysia
NCDR	National Science and Technology Center for Disaster Reduction, Chinese Taipei
NGO	Non-governmental organisation
NOAA	National Weather Service, National Oceanic and Atmospheric Administration, United States of America
NSC	National Security Council, Malaysia
ONEMI	*Oficina Nacional de Emergencia del Ministerio del Interior* Office of National Emergencies, Ministry of the Interior, Chile
PADR	Participatory Assessment of Disaster Risk
PRA	Participatory Rural Appraisal
SBDRM	School-based disaster risk management
SBT	Science Based Targets
SMS	Short Message Service
SOP	Standard Operating Procedure
ToT	Training of Trainers
TWM	Town Watching Mapping
UNDRR	United Nations Office for Disaster Risk Reduction
UNISDR	United Nations International Strategy for Disaster Reduction
UPM	Universiti Putra Malaysia
USA	United States of America
UTC	Universal Time Coordinated
WMO	World Meteorological Organization
WWP	Water Watch Penang

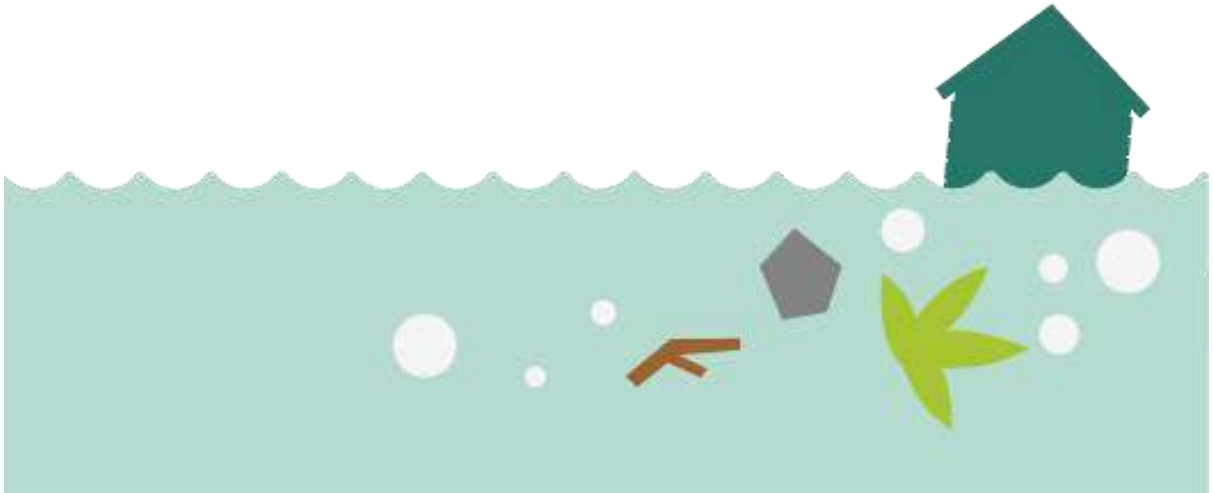
Module 1 Town Watching Exercise Briefing and Examples

Objective

The purpose of this module is to inform participants of the overall Town Watching approach for flood management and the steps required.

Course Materials

The slide deck is Module1.pdf shown in Figure 1.



1. Outline (slide 2)

The outline of the presentation is as follows:

A. Selection of Project Site
B. Early Preparation
C. Implementation of Town Watching
    1. Preliminary Review of the Area
    2. Town Watching Map Development
    3. Presentations and Discussions
    4. Submission and Sharing
D. Follow up

2. What is Town Watching? (slide 3)

Town Watching activity is a simple and practical tool for efficiently implementing community-based hazard mapping in various local communities around the world. It was originally use in town planning; however, it was also used in prevention of disaster impact such as flood. It is used to identify areas prone to have risk of danger and routes safe to travel during flood in the community residential area.

The Town Watching activity focuses on two main outputs which are (i) Community Based Flood Hazard Map and (ii) Community Based Flood Response Plan.

i. Community Based Flood Hazard Map emphasizes on how local community can develop their own map using local knowledge, experience and current condition.

ii. Community Based Flood Response Plan is action needed to be taken to prepare the site to be a safe route during flood and emphasizes on what needs to be done beforehand by individual, community, agencies and others.

Town Watching activity focuses on two main outputs, which are:

a) Community Based Flood Hazard Map (CBFHM)

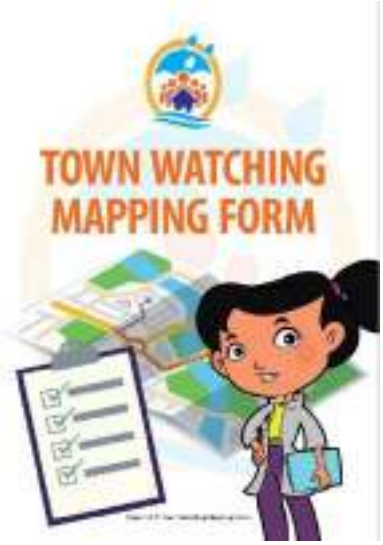
b) Community Based Flood Response Plan (CBFRP)

A. How Do You Select a Project Site? (slide 4)

To select a project site, the trainer may focus based on the needs such as flood prone areas and frequently affected community. Besides that, selection can be through smart partnerships, that is, with local authorities or other agencies' suggestions and recommendations or following project needs, funders and supporters.

B. What Do You Need to Prepare? (slides 5 to 13)

In terms of early preparation, the trainer should identify the area targeted for the location for the Town Watching activity, as well as the community members and stakeholders involved. The next step is to prepare a large map of the area; preferably including the information on topography or/and street map that is clear and to be used for future reference.



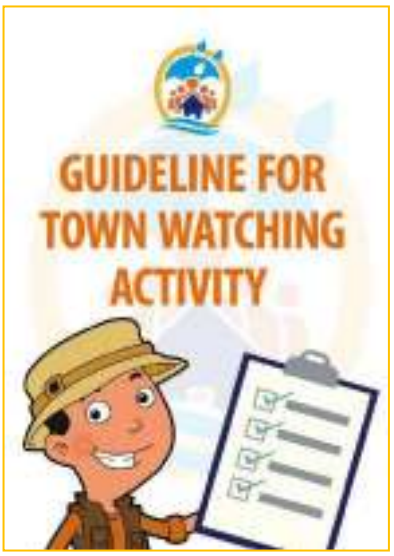
The trainer should also prepare all the necessary tools needed and print out the Town Watching Mapping form. The form can be downloaded at from the Flood Ranger website www.riverranger.my/FloodRanger, under the Module menu and selecting the file 'Town Watching Mapping Form (English)' (www.riverranger.my/FloodRanger/index.cfm?&menuid=5&lang=EN). The focus when filling the form is identifying potential Local Community Flood Gathering Centre (LCFGC), propose safe routes to the LCFGC site from respective houses, identify all hazards and risks along proposed safe routes, collect information on related community profile and also identify any resources in that area.

In addition to that, the trainer should also identify the resource person/s, be it internally from the community or external. Some examples of the resource person are the trainer, community group leader(s), and facilitator(s). After identifying these persons, each community member should be appointed specific tasks or roles, especially during the on-site activity. The roles of the group leader(s) and facilitator(s) are given in Slide 12. The last two preparations that should be taken care of by the trainers are the insurance cover for all participating members during the activity, and a suitable place with adequate facilities should also be arranged for meetings, group discussions and presentations.

C. How Do You Implement Town Watching Activity? (slides 14 to 24)

Trainers can refer to the document 'Guideline for Town Watching Activity' available at the Flood Ranger website www.riverranger.my/FloodRanger, under the Module menu and selecting the file 'Guideline for Town Watching Activity (English)' as a reference as it covers all the four main steps in the activity, which are:

i. preliminary review of the area,
ii. Town Watching map development,
iii. presentation and discussion,
then lastly is,
iv. submission and sharing.



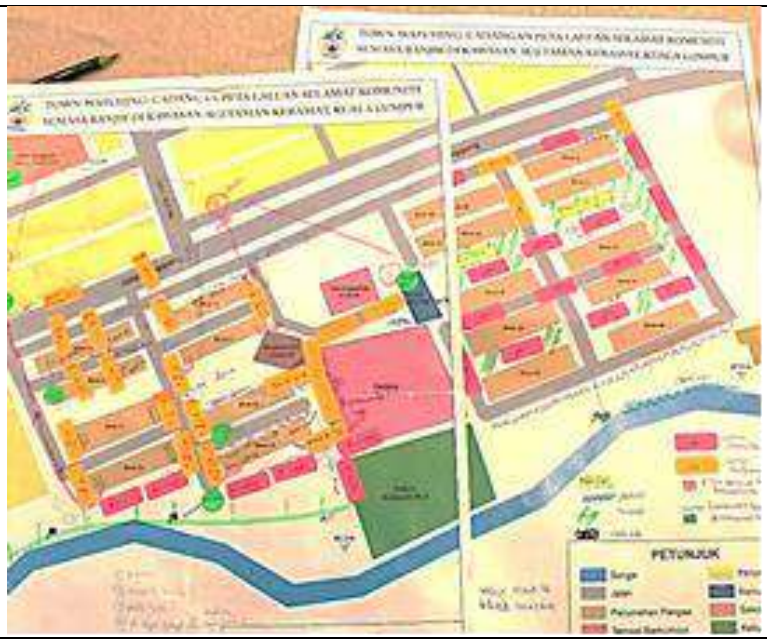
Step 1: Preliminary review of the area (slides 16 to 17)

Trainers should introduce and brief the community on the map of the area using slide presentations and videos of the area, or by using large, printed maps. Later, trainers can ask participants to divide themselves into at least two groups and appoint a few people to play roles needed during the activity. If doing the activity physically, tools needed for the activity are maps, clip files, colour pens, camera (or mobile phone with camera) to be distributed accordingly to each group. The timekeeper appointed should focus and manage time well to ensure that all aspects as per the Town Watching form and checklist are covered. The trainers should remind the participants that they are required to make notes and take photographs of any disadvantageous (hazard) and advantageous (beneficial) areas along the path that they walk along while conducting the 'watching' activity. Trainers should also guide participants to interview other local residents so as to obtain specific local information and past experiences of floods. They should identify the existence of persons who would need special assistance for evacuation. The recommended data to be collected are such as hazard areas, elements at risk, potential flood evacuation centres or shelters, evacuation routes, as well as availability of critical facilities, in addition to the community profile.

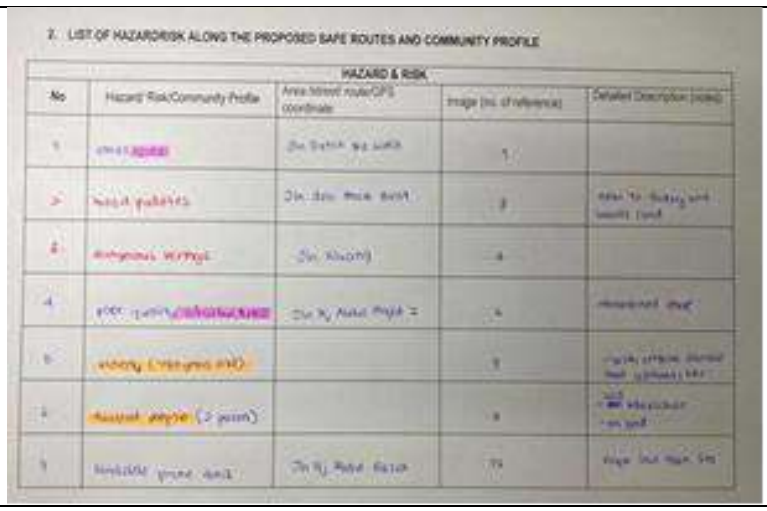
Step 2: Town Watching map development (slides 18 to 20)

Once the on-site Town Watching activity is completed, the team trainer, leader, facilitator, resource person and members are to clean-up and compile all data to be translated into a map and plan. Each group is required to track information and observations that includes potential risk areas, hazardous obstacles, previous inundation areas, evacuation shelters and routes, location of vulnerable people, etc., as they walk around the area and conduct the field survey. Trainers should ensure that all local area observations and surveys that have been made should be recorded and sketched properly by participants.

From all this information collected during field observation, the participants have to then develop their own community-based Town Watching map that will be the Community-Based Flood Hazard Map (CBFHM) and Community-Based Flood Response Plan (CBFRP).



Community-Based Flood Hazard Map (CBFHM)



2. LIST OF HAZARDRISK ALONG THE PROPOSED SAFE ROUTES AND COMMUNITY PROFILE

HAZARD & RISK				
No	Hazard Risk/Community Profile	Area/street route/GPS coordinate	Image (no. of reference)	Detailed Description (notes)
1	[illegible]	[illegible]	1	
2	[illegible]	[illegible]	2	[illegible]
3	[illegible]	[illegible]	3	
4	[illegible]	[illegible]	4	[illegible]
5	[illegible]		5	[illegible]
6	[illegible]		6	[illegible]
7	[illegible]	[illegible]	7	[illegible]

Community-Based Flood Response Plan (CBFRP)

Step 3: Presentation and discussion

After the maps are developed and ready, trainers may ask and guide all participants to discuss the overall vulnerabilities, possible counter-measures, priorities, degrees of difficulty and responsibility for implementing each proposed mitigation action, etc. The representatives from each group may present their respective group's community-based hazard map and response plan to members of the other groups.

Finally, the trainer/coordinator/leader would need to combine and merge all the sub-maps and plans into one main response plan as well as summarise the issues, problems, proposed mitigation, and future action plans that had been developed by this Town-Watching exercise.

Step 4: Submission and sharing

As the final step, the team trainer, leader, facilitator, resource person or members may submit and share the finished Town Watching map. The submission can be done by a hand-over to the related/relevant agencies/entities for their record and action.

Further sharing may be by placing the map in public spaces (for example at a community hall or religious centre) and by promoting its use to the community as well as constantly reminding of the response plan and map during meetings or gatherings. To make it easier and convenient for sharing, the map and details on town watching activity can also be developed into a pocket-sized brochure and shared with all the community residents.

D. Don't Forget to Follow Up!

Along with all the main steps that has been done, a follow-up discussion with agencies should be carried out. This is to get feedback and responses from agencies, get information on any support that can be provided, or to mitigate any hazard and risks identified, supplemented with an endorsement of the proposed Community Flood Gathering Centre (CFGC) and safe evacuation routes.

Road repair after identification of possible hazard and feedback to authorities through community Town Watching exercise.

Use of training videos

If physical on-site observation can not be carried out during the training, an alternative is to prepare a training video.

The first video for the training could explain the first three steps, which are, i) preliminary review of the area, ii) town watching map development and iii) presentations and discussion.

This could be followed by two or three exercises where participants are asked to identify the potential local community flood-evacuation gathering centre (LCFGC) through a drone video of an area in Malaysia. Trainers may prepare their own videos of local sites.

Participants should list the advantages, disadvantages, weakness, and enhancements needed of each of the proposed LCFGCs. This can be followed by the third and fourth exercise which focuses on identifying a safe route, as well as mapping of hazards within the area. Answers can then be discussed and finalised during the session.

Figure 1 Slide deck for Module 1

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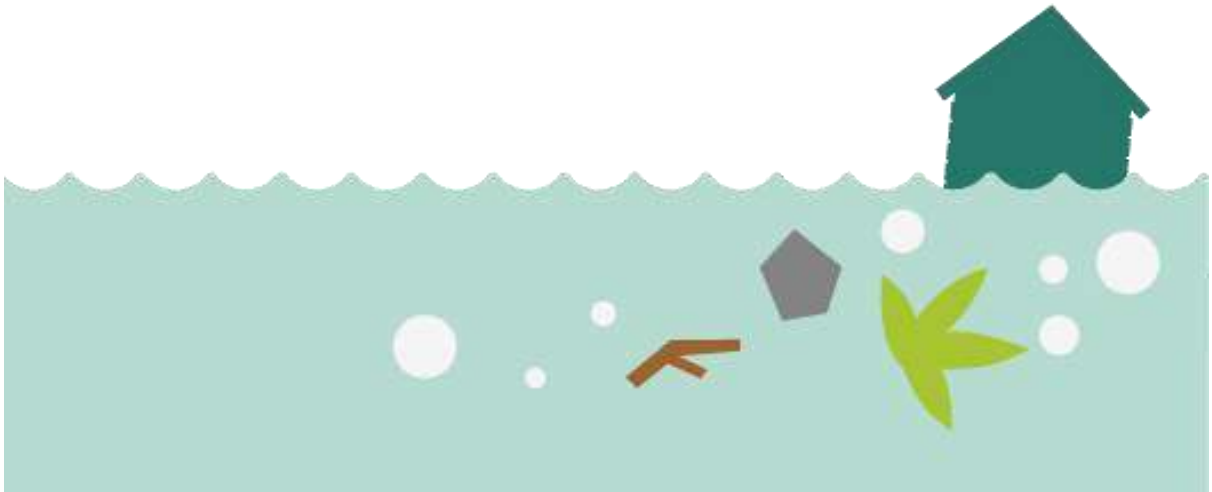
Module 2 Use of Electronic Mapping Applications (E-Maps)

Objective

The purpose of this module is to provide participants with tools for electronic and digital mapping for Town Watching mapping.

Course Materials

The slide deck is Module2.pdf shown in Figure 2.



1. Outline (slide 2)

E-maps are electronic or digital maps which can be a easy way to share and carry out collaborative work virtually. The outline of the presentation is as follows:

1. Hand drawn map
2. Digital map using MS PowerPoint
3. Digital map in Google My Maps
4. Digital map in Google Earth Pro Desktop

2. How to Develop a Town Watching E-Map?

Some basic terms and approach for digital maps (slides 3 to 6)

All mapping applications typically will have a minimum of three types of objects arranged in layers, that is:

- Points,
- Lines or polylines, and
- Polygons.

In addition, many mapping applications allow images to be added in a layer.

More sophisticated systems are known as Geographic Information Systems (GIS) and comprise mapping applications which are linked to a database. The data structure in mapping applications are of two types, raster or vector. Raster are similar to images and are normally from satellite images or aerial photographs. The other type of mapping data is vector and is similar to drawn lines. The biggest difference is in the space needed to keep these different data structures and in how calculations can be done on the map data. Many mapping applications use a combination of raster and vector data structures.

The topic of electronic or digital applications for developing maps can be done in steps.

There are four steps to progress to digital applications.

Step 1 is a hand-drawn map; step 2 is map using Microsoft PowerPoint; step 3 is using Google My Maps and step 4 is using Google Earth Pro Desktop. The trainer can emphasise that all mapping applications or “Geographic Information Systems (GIS)” will have a minimum of 3 types of objects arranged in layers. The objects are point, line/polyline and polygon. Once the basics of these objects and layers are understood then participants would be able to use any other mapping software. There are many mapping applications or GIS which will allow images and descriptive text to be added.

Present exercises which the participants could follow to create simple map drawings using the four steps; participants can be asked to draw a simple map of a room using the shapes in MS PowerPoint. After that explain how to open and use Google My

Maps. The trainer should ask participants to draw some simple objects on the My Maps application. Some examples of flood response maps made in Malaysia can be viewed through the URL links provided.

Based on feedback from participants in the virtual workshop, if there are newcomers to digital mapping applications then the trainer should allocate more time for this module to ensure that participants feel comfortable using the drawing controls.

Step 1 – A Hand Drawn Map (slides 7 to 9)

Trainers may create a flood hazard map through digital mapping platforms that are accessible online. A useful mapping format is that which can be converted to a Google Earth file (kmz/kml file), for example, if using Google My Maps platform. Examples of other platforms that can be used by trainers are Google Earth Pro and ArcGIS. The ArcGIS platform may require a license and so free software applications are preferred. The choice of mapping software is up to the trainer and may be based on ICT availability.

To develop a Town Watching e-Map, the first steps on doing so are the same as preparing a physical map. The only difference is whether the map is plotting by hand drawing or by digital drawing.

The first exercise for participants is to create a hand-drawn map and an example is provided in the slide. Trainers may wish to create their own hand-drawn map example.

Step 2 Drawing in MS PowerPoint (slides 10 to 24)

The next step is translating the hand-drawn map into a digital format. The easiest way to do this is by using a drawing application and a useful one to use is a slide presentation software like MS PowerPoint. The drawing tools can be used to trace the hand-drawn map which we just made.

The instructor can go through the different shapes available for drawing in MS PowerPoint.

Introduce that MS PowerPoint does have a layered structure for the different shapes which are drawn. The layers can be accessed by selecting the Selection Pane function in the 'Drawing' menu, under the 'Arrange' command. The visibility of shapes can be turned on or off by selecting the 'eye' icon in the Selection Pane. Shapes can be moved up or down layers and participants can also add an image and see it in the layer. Encourage participants to try out the different controls in the Selection Pane.

Step 3 Google My Maps (slides 25 to 36)

The trainer can then move to the next step which is to use Google My Maps.

Explain that My Maps uses similar functions as MS PowerPoint where My Maps also has drawing tools. Participants can draw Point, Polyline, and Polygon.

Ask them to add in an image, and they can try to add in a video, or a web link.

Then ask participants to practice grouping and layering their drawing shapes. This grouping is just like what a GIS would do. Participants have to think about what they would want to be able to turn off and turn on information on the different shapes they have drawn.

Once participants have created a map they can view it in Google Maps and even share it with others to collaborate on a single map. They have to make sure that are signed into a Gmail account on the browser.

Step 4 Google Earth Pro Desktop (slides 37 to 66)

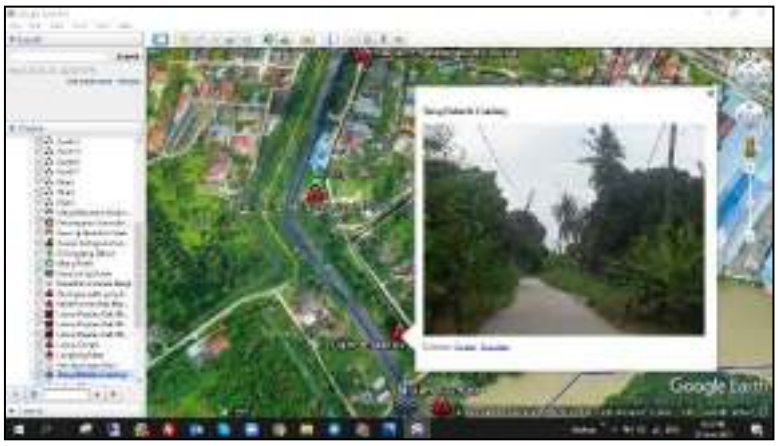
Finally, the trainer can demonstrate the use of Google Earth. The advantages of Google Earth can be compared to My Maps. The trainer can then go through the different controls and toolbars in Google Earth and the map projects which can be developed:

1. Contents Panel,
2. Navigation Controls,
3. Tools > Options Pop-up Menu,
4. Add Place Mark Points,
5. Drawing Lines / Paths,
6. Making Polygons,
7. Folders for Saving Work,
8. Add Photos,
9. Add Image in Properties,
10. Adding Image Overlays.

The trainer can reference to several online videos available on YouTube as listed in the slide deck. These videos provide step by step examples for a newcomer to digital applications and include drawing points, lines, polygons, organising files and folders, adding photographs and images and finally overlaying an image.

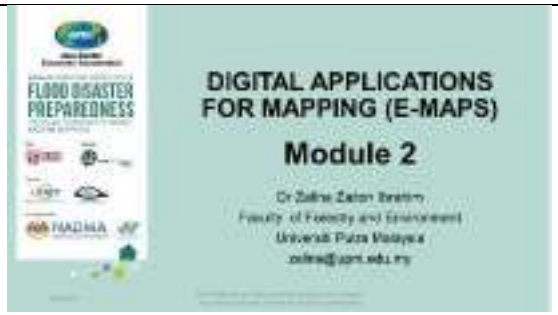
Some examples of Town Watching E-Maps are shown in the following images. The hazards symbols within images are shown in the map together with the safe routes.

Example of a map created using Google My Maps



Example of a map created using Google Earth Pro.

Figure 2 Slide deck for Module 2



1

2

All mapping applications or "Geographic Information Systems (GIS)" will have a minimum of 3 types of objects arranged in layers

- Point
- Line or Polyline
- Polygon

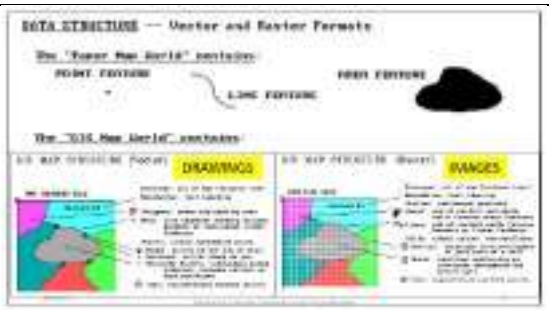
3

Many mapping applications or "Geographic Information Systems (GIS)" will allow images and descriptive text to be added

4

A "Geographic Information System (GIS)" will have a database attached to each of its objects

5



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Step 1 - A Hand Drawn Map

- Let's make a map of our room
- Locate where we are at our desk or table or sofa
- Include the exit door
- Include 2 other items in the room

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You may download my drawing from the chat link if you want to use it

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Step 2
Drawing in MS PowerPoint

- We use the Drawing tools

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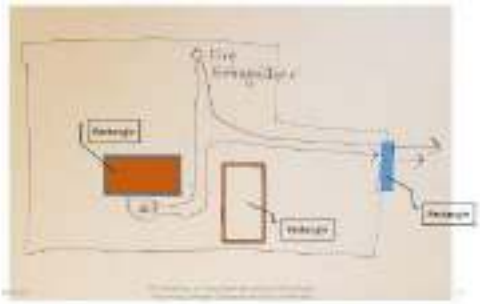

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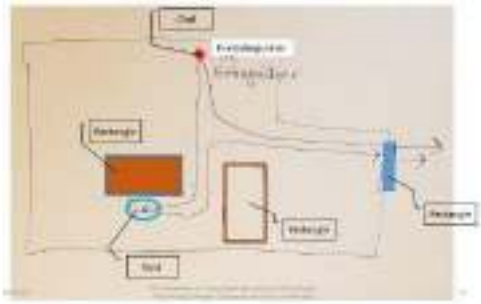

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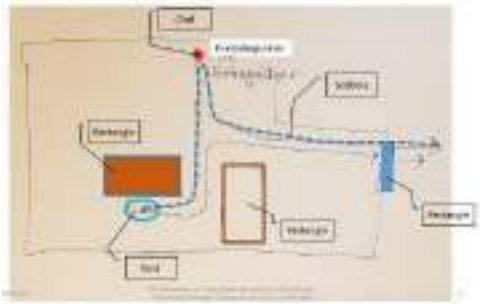

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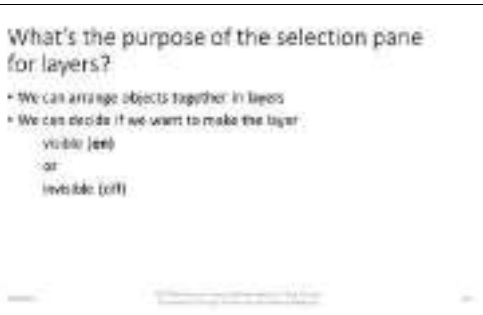

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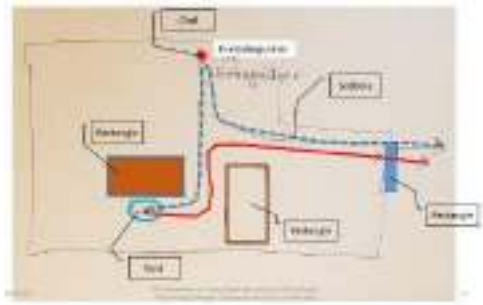

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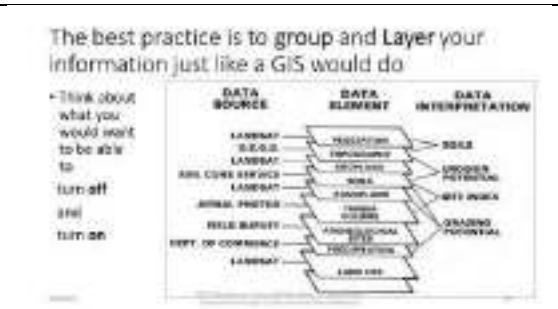

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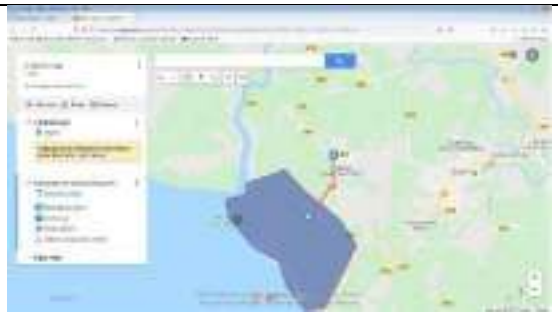

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Once you have created a map you can view it in Google Maps

- Make sure you are signed into your gmail account on the browser
- Open Google Maps
- Select the Menu (3 horizontal bars on the top left)
- Select Your Places
- Select MAPS
- Select the map you want to view

35

Example of a Townwatching training map in My Maps

36

Step 4
Google Earth Pro Desktop

Google Earth	Google Maps (showing is in My Maps)
• Full satellite imagery	• Navigation
• 3D terrain model	• Location tracking
• Measurements	• Local use
• Downloadable (Pro Desktop)	• Lightweight
• GIS-like, without the database	• Web browser
• Video tour feature	

37

Topics

- **Controls and Toolbars**
  - 1. Controls Panel
  - 2. Navigation Controls
  - 3. Tools + Context Pop-up Menu
- **Map Projects in Google Earth**
  - 4. Add Place Mark Points
  - 5. Drawing Lines / Paths
  - 6. Making Polygons
  - 7. Folders for Saving Work
  - 8. Add Photos
  - 9. Add Image Properties
  - 10. Adding Image Overlays

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1. Contents Panel

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Search Panel

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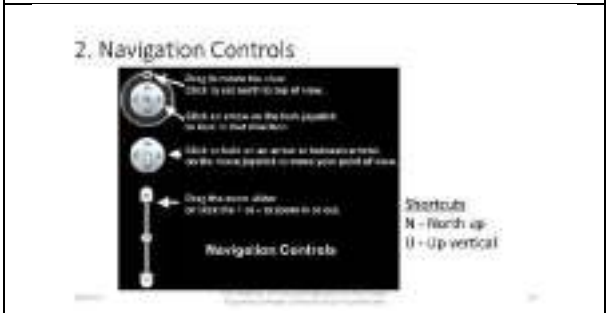

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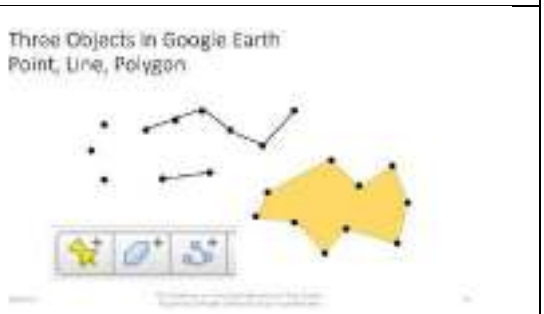

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YouTube Video
4. Add Place Mark Points

51

Placemark

New Placemark Dialog Box

You can only do editing in the object Properties box. Right-click the object and select Properties.

52

YouTube Video
5. Drawing Lines / Paths

53

The Elevation Profile along a Path

- Right click a path line
- Select Show Elevation Profile

54

YouTube Video
6. Making Polygons

55

Polygon
(a closed space)

New Polygon Dialog Box

56

YouTube Video
7. Folders for Saving Work

57

Organise your files in My Places

58

YouTube Video
https://www.youtube.com/watch?v=EQ2Fy3e5trg

Saving Work

Save Place As
→.kmz file
(zip file)

59

YouTube Video
8a. Add Photos

60

Use the Menu at the Top to add Photos

61

YouTube Video

8b. Add Image in Properties

62

YouTube Video

9. Adding Image Overlays

63

Image Overlay

- Make the image transparent so you can see what is behind it
- Move,
- Stretch
  and
- Rotate
  the image to fit the image background.
- Do not expect a perfect fit.
- Align to known ground points, like crossroads and buildings

64

Add Points, Paths, Polygons on the map

- Points
- Paths
- Polygons
- Images
- Overlays

Have fun with Google Earth

65

Community Flood Response Map,
Kampung Sungai Pinang

66

Thank you

67

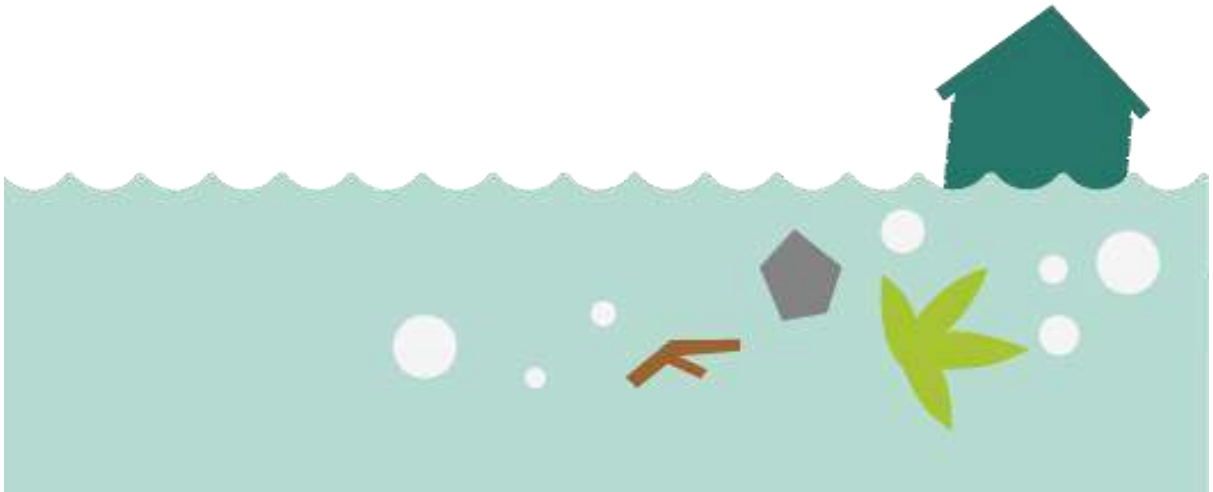
Module 3 Town Watching Exercise

Objective

The purpose of this module is to inform participants of the Flood PREPARE Approach and to describe, step-by-step, each of the activities for Town Watching in preparation for the field exercise.

Course Materials

The slide deck is Module3.pdf shown in Figure 3.



1. Outline (slide 2)

The outline of the presentation is as follows:

1. FLOOD Ranger
2. Town Watching Activity
    - Step-by-step diagram
3. Introduction to 3 main steps of Town Watching Activity
    - Town Watching Exercise at Outdoor (Field Site) or other options
    - In-class Hazard Mapping and Flood Response Plan
    - Discussion and presentation on final town watching map

2 FLOOD Ranger (slide 3 to 9)

Under the National Security Council (NSC) Directive 20, Malaysia's National Disaster Management Agency (NADMA) is responsible for coordination of all activities and cooperation before, during and after disasters, including disaster risk prevention and mitigation activities, disaster preparedness and response activities, as well as recovery and redevelopment activities. One of the roles and responsibilities of NADMA is to coordinate the implementation of public awareness programs. The role of non-governmental organisations was viewed to be more on humanitarian services for rescue and support during flood disasters.

In an effort to support the government's (NADMA) public disaster preparedness, in 2014, Malaysian Water Partnership (MyWP) and the Global Environment Centre (GEC), with some financial support from the Global Water Partnership Malaysia and Global Water Partnership Southeast Asia, developed a community-based programme focusing on empowering stakeholders in preparing for flood disasters, that is the FLOOD Ranger programme.

The FLOOD Ranger components comprise:

i. Smart partnership

The programme was developed to complement the Malaysian government's (NADMA) framework. Community-based programme must be conducted in partnership with government agencies. It balances the role and responsibility of all stakeholders involving government agencies, statutory body, private sector, NGOs and volunteers.

ii. FLOOD Ranger Module

The FLOOD Ranger module is an approach that can be adopted by all levels of the community and community-based initiative. It can help to reduce the risk of floods as well as reduce the socio-economic losses that have to be borne by all parties. It was developed in 2015 by MyWP and GEC in partnership with the Department of Irrigation and Drainage Malaysia (DID) and supported by local government as a pilot study. In 2018, the module

was enhanced with support from Universiti Putra Malaysia (UPM) and NADMA.

iii. Trainings or workshops

The main aim is to empower the key stakeholders especially local communities. Each workshop or training will have customized agenda to suit the local condition and setup. The module can be adapted to the local needs.

Targeted stakeholders are local communities, government agencies and voluntary organization/s. Moreover, it is organised in partnership with government agencies; ie: disaster management, local government and community. The training duration usually takes 1 up to 2 days.

The FLOOD ranger training used the FLOOD PREPARE APPROACH. The Flood Prepare Approach is developed specifically for community-based flood resilience. The programme was customized to suit bottom-up and civic science as an overall approach.

There are three measures in catalysing the flood PREPARE approach, that are (i) preparedness, (ii) action and (iii) recovery. The Town Watching activity also follows closely to the Flood PREPARE approach design.

The Civic Science contribution to developing the Town Watching map is emphasised.

The trainer and participants may wish to download the materials of the Flood Ranger programme from the Flood Ranger website www.riverranger.my/FloodRanger, under the Module menu and selecting the file 'FLOOD Ranger Module (English)' (www.riverranger.my/FloodRanger/view_file.cfm?fileid=15). This document contains

five chapters on floods, their impacts, flood mitigation, community involvement and levels of flood management.

2. Town Watching Activity (slide 8)

In preparation for the on-site field observation, the trainer can share the diagram indicating the steps for the Town Watching exercise and remind participants of the materials that they should have ready.

A. Selection of Project Site (slide 9 to 10

Participants are reminded to select a site that they are familiar with for the exercise.

B. Early Preparation (slides 11 to 13)

The trainer should remind the participants of early preparation before going to the field and to download the forms for the Town Watching activity.

3. Introduction to 3 main steps of Town Watching Activity

C. Implementation of Town Watching (slides 14 to 15)

The 3 main steps emphasised for the training are the:

1. Preliminary review of the area

2. Town Watching map development

3. Presentation and discussion

The fourth step is the result of an actual Town Watching exercise where the resulting map is then shared with the relevant authorities.

1. Preliminary review of the area (slides 16 to 38)

The different steps which the participants must undertake during the site visit are described and examples of issues are presented. This is best conducted physically in the field together wit the trainer(s) and resource persons/facilitator.

For a virtual training, training videos recorded by drones can be used for the exercise. If drone videos are not available, participants can use online map applications such as Google Earth Pro to view their study area although the information are likely outdated.

The trainer can use any videos of their locality during the workshop to conduct exercises with the participants in class. The slide deck has placeholder slides for participant feedback on the video exercises. The trainer then provides feedback on the exercises. Trainers should adapt the slides for their situation.

Exercise 1 is to identify a potential local community flood gathering centre (LCFGC). A video can be used to present the participants with a field site. Give the participants time to answer the question. A discussion of the different options, their advantageous and disadvantageous, as identified by participants, is facilitated by the trainer.

Exercise 2 is to identify a potential local community flood gathering centre (LCFGC). A second video clip of a field site can be used if field excursion is not possible.

Exercise 3 and 4 are on hazards mapping or safe routes for two different field sites.

2. Town Watching map development (slides 39 to 43)

The development of the Town Watching map is briefly described. And the training focuses on the development of the Town Watching map by transferring the data compiled during the activity into a map. This is followed by a hands-on exercise to fill in a response plan form in Exercise 5.

3. Presentations and discussion (slides 44 to 53)

Finally, participants are informed of examples of the presentation of maps and plans which had been developed as well as discussion of the outcome of the activity.

Participants are requested to share their thoughts and comments on the presentations and discussions presented.

If using an online platform, then during this session the participants can be shown how to use some of the online meeting platform, for example, Zoom meeting service features, so that they can share the outcome of their town watching activity that would be conducted on the next day (Exercise 6). Examples of town watching maps from Malaysia were shared with the participants.

Towards the end of the session, the trainer should remind and brief participants on the preparation for the practical session which they were encouraged to do on Day 6 of the workshop. Participants were also briefed on the presentation that they would be preparing and making on Day 7 of the workshop.

Examples of the final map products are shared with participants.

Figure 3a Slide deck for Module 3

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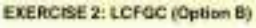

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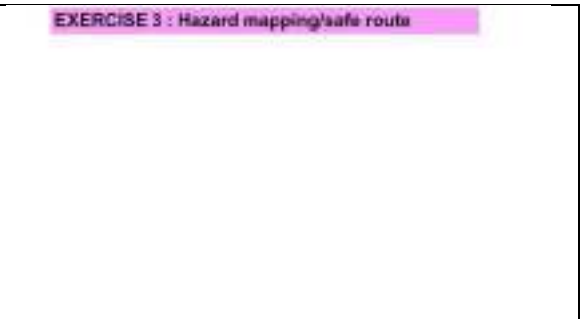

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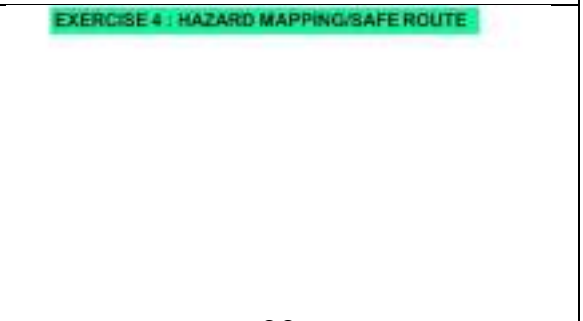

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Town Watching E-Map
FLOOD DISASTER PREPAREDNESS

51

FLOOD DISASTER PREPAREDNESS

52

Example of Hazard E-Map
FLOOD DISASTER PREPAREDNESS

53

healthier environment; better economy; more cohesive society
together we achieve more
Thank You!
Dr Kalithasan K
+6010 366 9772; kalithasan@gpc.org.my
FLOOD DISASTER PREPAREDNESS

54

Figure 3b Slide deck for Module 3

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Presentations were made by

- Brunei Darussalam team who developed a map in the Belais and Buda-buda Bokok area;
- Chile team who presented a map for Municipalidad de Iquique;
- The Philippines team who conducted town watching activity in the Poblacion, Ferrol, Rombon area; and
- Malaysia team who presented their map for Dengkil, Selangor area.

Dr Kalithasan provided comments and an overall summary of the presentations made by the five economy team which had submitted their exercises and reminded of the following steps and activities when conducting the Town Watching Mapping exercise for training:

- Do the three steps of preliminary review, hazard map and response plan;
- Prepare Town watching mapping forms, hazard maps and response plan;
    - If doing the assessment as a virtual or hybrid approach, digital mapping is a very useful tool. For example, virtual tour with Google Earth Pro is a common method to view the area of interest. Prepare to do live sharing or submit video presentation.
- Include supporting/reference images of hazards in the map;
- Provide directions (arrows) in evacuation routes, where path direction is vital component; and
- Provide information on the community profile.

When conducting the actual Town Watching Map activity at the local or with the community, understand that:

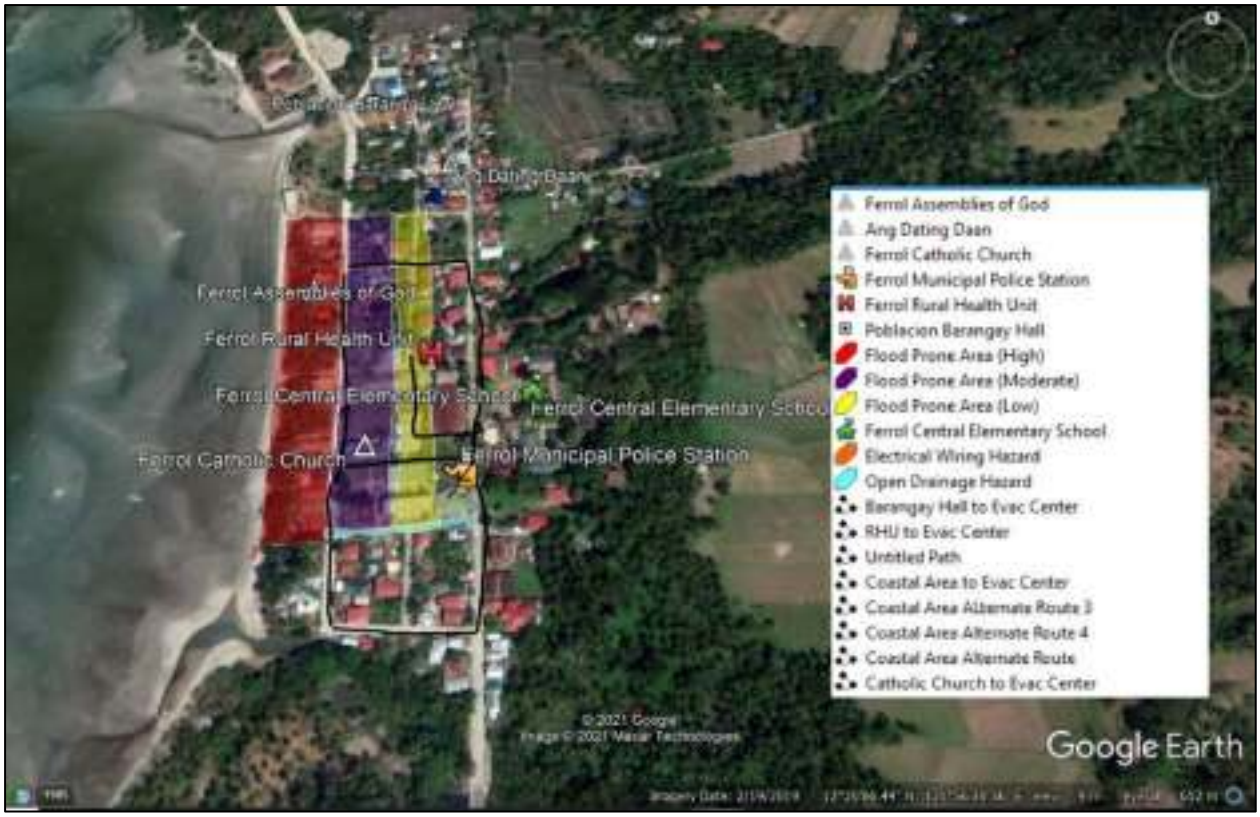
- Ideally, it should be initiated by the community in order to have ownership and sustainability (updating of information);
- The authority or agency plays a coordination and catalyst role;
- The Town Watching Map must be supported by images;
- Flood response plan must be included; and
- The response plan must be localised according to the community profile as needed (elderly, children, handicapped, medical needs/issues, etc).

Examples of E-Maps developed during the workshop and comments on possible improvements

The first sharing was by Brunei Darussalam. team have developed a map in the Belais and Buda-buda Bokok area.

Strengths and potential improvements:

A. Preliminary review of the area
    - Real time visit and Google Earth Pro used
    - Details observation included
    - Community and area profiled done
    - LCFGC with its strength and enhancement highlighted
B. Town Watching Map
    - Good hazard map with hazards and evacuation route highlighted
    - Hazards supported with reference images
    - Flood response plan can be included



The second sharing is from the Philippines team conducted town watching activity in the Poblacion, Ferrol, Rombon area.

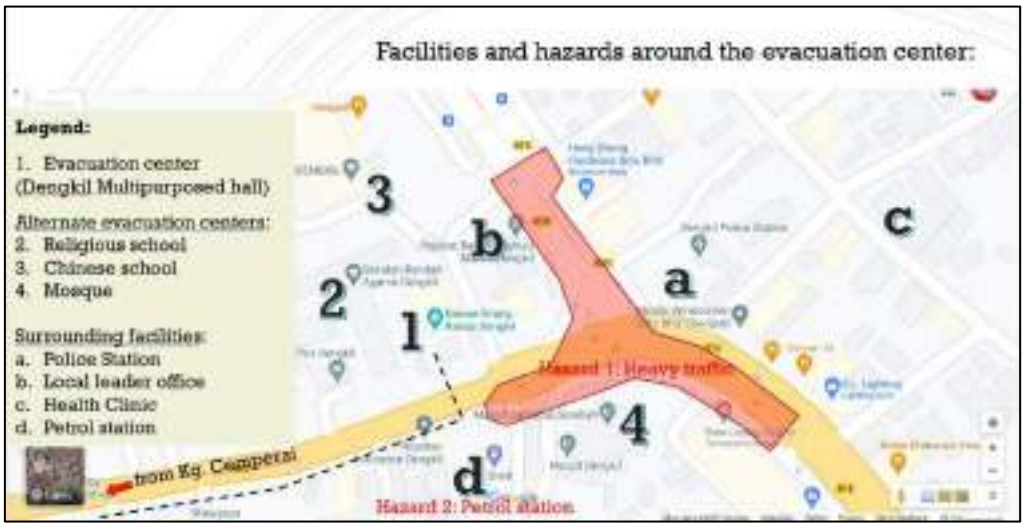
Strengths and potential improvements:

A. Preliminary review of the area
    - Real time visit and Google Pro Earth used
    - Photos/images can be attached
    - Only hall highlighted in Google Earth kmz file. Other items can be labelled.
B. Town Watching Map
    - Good map
    - Need to label school as evacuation centre in legend.
    - Evacuation routes can be made clearer with direction (arrows)
    - TWM form can be completed
    - Flood response plan can be added

The third sharing is from Chile team

Strengths and potential improvements:

A. Preliminary review of the area
    - Real time visit and Google Earth Pro used
    - Good baseline information (community profile is not included)
    - TWM form can be attached
B. Town Watching Map
    - Hazard map submitted and appears to have captured most of the information
    - Supporting images will be useful
    - Flood response plan can be included



The last sharing is by Malaysia team in Dengkil, Selangor area.

Strengths and potential improvements:

A. Preliminary review of the area
   - Real time visit and Google Earth Pro used
   - TWM form can be attached
   - Evacuation centres' advantages and hazards around highlighted
   - All aspects covered but it is based on an older situation.
   - No images on hazards

B. Town Watching Map
   - Good hazard map, evacuation route and response plan
   - Can have TWM form attached
   - Can add supporting/reference to images of hazards

Example of overall comments and summary of presentation by the trainer:

A. In total, five groups submitted their assignments:
B. Submitted hazard maps
    - Only one group submitted both hazard map and response plan
    - Some groups submitted the map but the response plan was not included
C. Overall only one group covered all the three steps
    - Preliminary review, hazard map and response plan
D. Overall all groups:
    - Used third method which is using virtual tour Google Earth Pro as a common method.
    - Presented live sharing of their findings
    - Only one group submitted the town watch mapping form.
E. Generally
    - Supporting /reference images of hazards were generally not included in the map except for one group.
    - Directions (arrows) were missing in a couple of evacuation routes, where the direction is a vital component
    - Community profile was missing in two groups
F. Workshop's Town Watching Map Activity
    - All focused on Town Watching Map development
    - Using Google Earth Pro due to current limitation (COVID-19 control movement)
G. Actual Town Watching Map Activity
    - Need initiated by community (ownership)
    - Agency play coordination and catalyst role
    - The Town Watching Map must be supported by images
    - Flood response plan must be included
    - Localise community profile needed

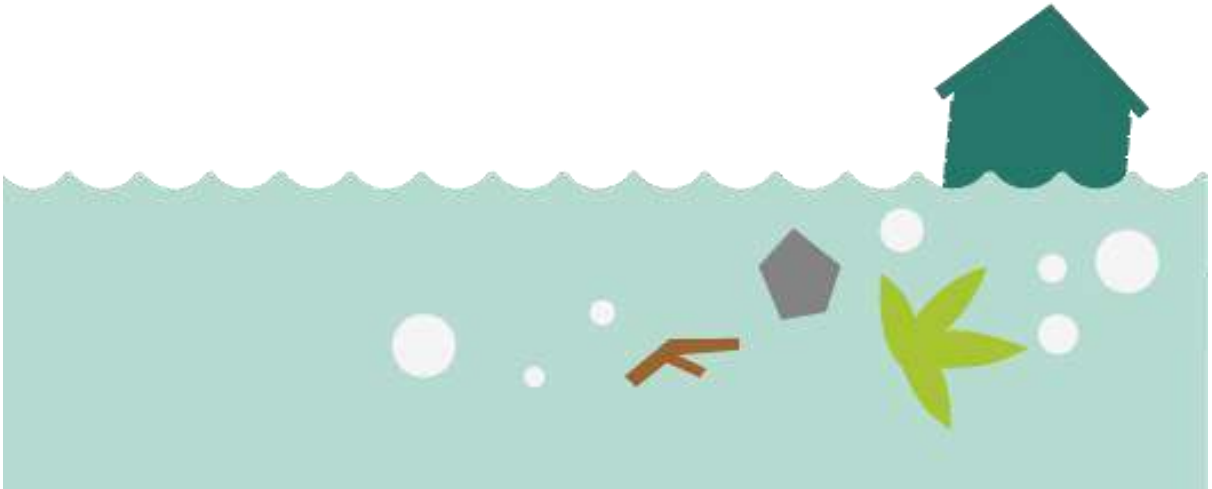
Module 4 Survival Preparation and Emergency Kits

Objective

The purpose of this module is to inform participants that flood management at the scene is very important, and it needs to be carefully understood to improve survival rates. Actions can be taken before, during and after a flood.

Course Materials

The slide deck is Module4.pdf shown in Figure 4.



1. Outline (slide 2)

The outline of the presentation is as follows:

1. FLOOD Ranger Programme
2. Flood PREPARE Approach
3. FLOOD Ranger Module
4. Flood Training Module
5. Level of Flood Management
    - Before, During and After

2. FLOOD Ranger Programme (Slide 3)

In this session, the trainer should emphasize that flood management at the scene is very important, and it needs to be carefully understood. This module reminds participants of the approach taken in the FLOOD Ranger community-based flood preparedness programme which focuses on empowering stakeholders in preparing for flood disasters, including the survival aspect. The programme takes a bottom-up and civic science approach.

3. Flood PREPARE Approach (Slide 4)

The three measures in catalysing the flood PREPARE approach are (i) preparedness, (ii) action and (iii) recovery. The planning, evacuation and sharing actions under this approach assist community-based flood emergency survival preparation

4. FLOOD Ranger Module (slide 5)

Chapter 5 of the FLOOD Ranger Module provides guidance to the community on the flood management actions to be taken before, during and after flooding. The focus of this presentation is on preparation before a flood.

5. Flood Training Module (slide 6)

In preparation for a flood a workshop or training session can consider different modules to customize according to the local situation. The issue of community-based flood emergency survival preparation is cross-cutting across all the training module.

6. Levels of Flood Management

Flood management at the scene is very important and it needs to be carefully understood. Everyone, especially the local community, plays a vital role in flood management. Trainers may introduce to participants that an early preparation is essential to reduce losses and damages due to flooding. Explain to participants that there the flood management can be divided into BEFORE, DURING and AFTER flooding. The trainer and participants may wish to download and refer to the materials of the Flood Ranger programme from the Flood Ranger website www.riverranger.my/FloodRanger, under the Module menu and selecting the file 'FLOOD Ranger Module (English)' (www.riverranger.my/FloodRanger/view_file.cfm?fileid=15).

Before Flood

Before flooding, it is important for the community to collect relevant information, survey their surrounding area and start preparing emergency and survival kits such as Grab bag and 72H bag. The community needs to be aware of action of evacuation as well as awareness of emergency action. Examples of actions are making sure the community knows their evacuation routes and have a list of emergency contacts and telephone number list. The Grab bag must store the most important survival kit such as important documents, emergency kit, medicine supply, personal hygiene kit as well as food. 72H kit should be able to provide needs for a person for minimum 3 days (72 hours). The main purpose of this kit is to ensure temporarily survival while in transit to a safer area and not as a life aid.

i. Information finding

In preparing for the worst during flooding season, community should always pay attention to flooding information in the area such as weather reports and flood warnings. Aside from that, trainer can also advise participants to visit the existing website to get information on flood updates. For example, for Malaysia the relevant websites are:

- NADMA website at portalbencana.nadma.gov.my/en/disaster-information
- Malaysian Meteorological Department at www.met.gov.my
- Department of Irrigation and Drainage at publicinfobanjir.water.gov.my/?lang=en
- Public Works Department at bencanaalam.jkr.gov.my

ii. Surrounding areas

In taking safety measurement of the surrounding area, guide participants on how to inspect water channels such as drains or sewers as well as checking that there are no barriers, and it is tightly closed to prevent water inflow. In addition, advice to ensure vehicle(s) is in good condition (tools) to prepare for evacuations along with place your pet(s) at a safe place as animals are usually not allowed at the relief centre for hygiene and health reasons.

Pets should be placed in a safe place with enough food and water.

iii. Emergency and survival kits

In the event of disaster, make sure each family or household have enough food, water and basic need/supplies to last at least 72 hours. Trainers may introduce the four emergency and survival kits that can be prepared beforehand that are the (a) Grab Bag, (b) 72H Kit, (c) Sandbags and (d) Potable water. For more information and details on what and what is inside the bag and kits, please refer to the materials of the Flood Ranger programme from the Flood Ranger website www.riverranger.my/FloodRanger, under the Module menu and selecting the file 'FLOOD Ranger Module (English)' (www.riverranger.my/FloodRanger/view_file.cfm?fileid=15).

During flood, the main problem of the victims is to get clean or potable water. Flood water may be contaminated by various impurities and can cause diseases. Therefore, there is a need to qualify the source as well as treat the water. Trainers may do a demonstration or show videos on how to properly boil water, use water filtration or treatment along with other safe and known methods.

iv. Action of evacuation

In finding ways to evacuate, highlight to participants to first identify the nearest evacuation centres and disaster relief centres in their area. Look for several sites. Also identify the evacuation routes, any hazards or risks along the way, to later develop a Town Watching map.

v. Awareness of emergency action

Advise participants to prepare a list of emergency contact numbers such as of family members, friends, ambulance, policemen, hospitals, Disaster Relief Centres or Evacuation Centres. Trainers may also show examples of these list of emergency contact numbers to all participants. At the same time, trainers should emphasise that safety is for every age group and to make sure to teach children or elderly parents on how to call flood-related agencies. Participants can benefit from Basic First Aid training too and some rescue know-how. Try to ensure that at least one of the family members has such basic skills.

During Flood

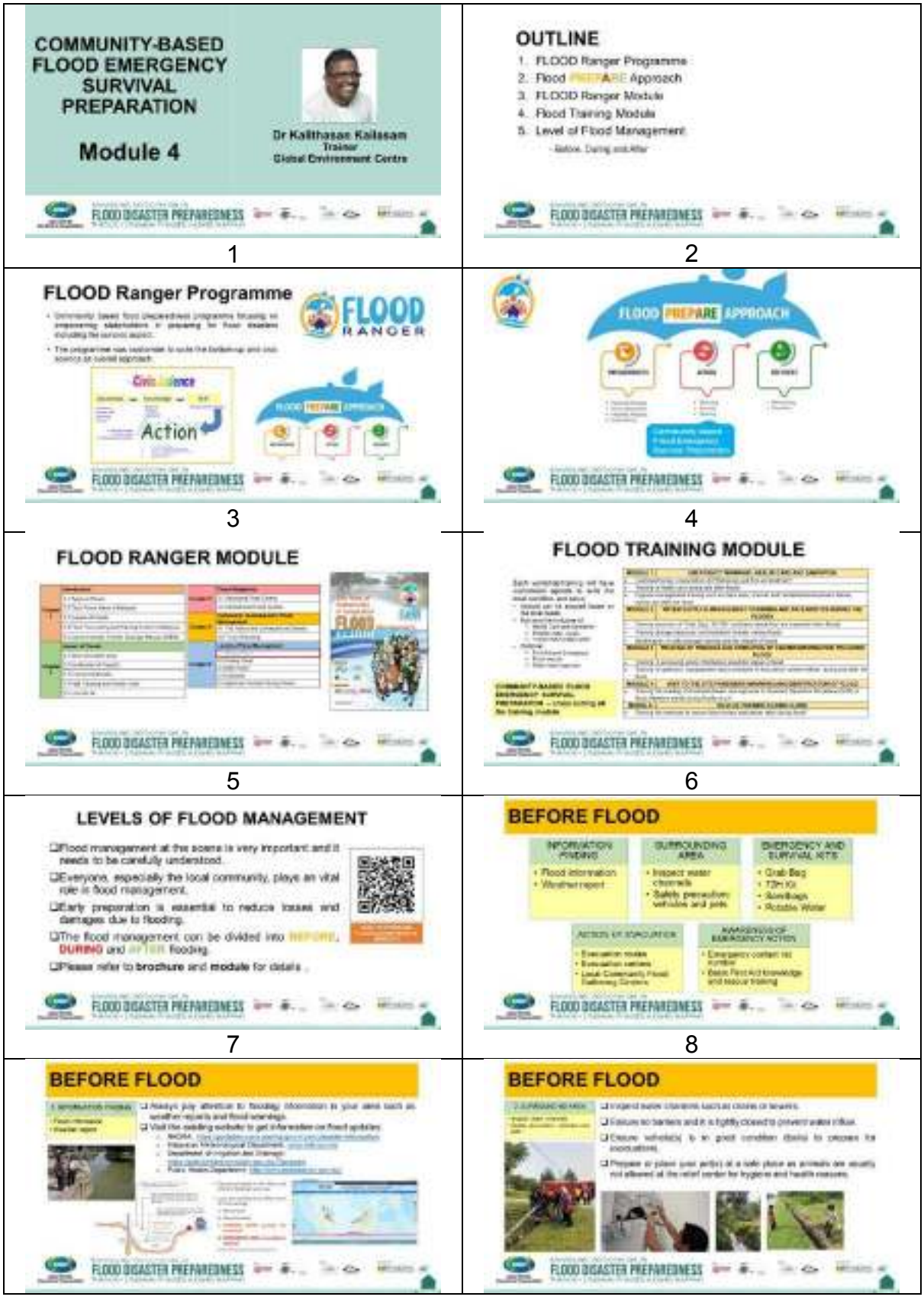
During a flood, the key community actions are to ensure that they are aware of what they should do when they are trapped inside or outside the house or inside a vehicle, during relocation An important part is awareness of electrical management safety guides. Information on these aspects can be found by referring to the FLOOD Ranger Module.

After Flood

During the early stage after a flood event, explain to participants that they should listen to media announcements or wait for instructions, and to not return home against instructions given, or before it is completely safe to do so. Help neighbours or people with disabilities among others who may need extra assistance. Introduce participants to taking safety precautions when entering any building, and how to inspect the surrounding area as well.

The trainer can conclude the session with a step-by-step presentation on Community-Based Flood Emergency Survival Preparation.

Figure 4 Slide deck for Module 4



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BEFORE FLOOD
First aid : provide basic medical care to someone in the absence of proper medical care. For example the following treatment :
FLOOD DISASTER PREPAREDNESS

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DURING FLOOD
INSIDE THE HOUSE
OUTSIDE THE HOUSE
INSIDE THE VEHICLE
DURING RELOCATION
ELECTRICAL MANAGEMENT SAFETY GUIDE
FLOOD DISASTER PREPAREDNESS

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AFTER FLOOD
FLOOD DISASTER PREPAREDNESS

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+ Video
FLOOD DISASTER PREPAREDNESS

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healthier environment; better economy; more cohesive society
together we achieve more
Thank You!
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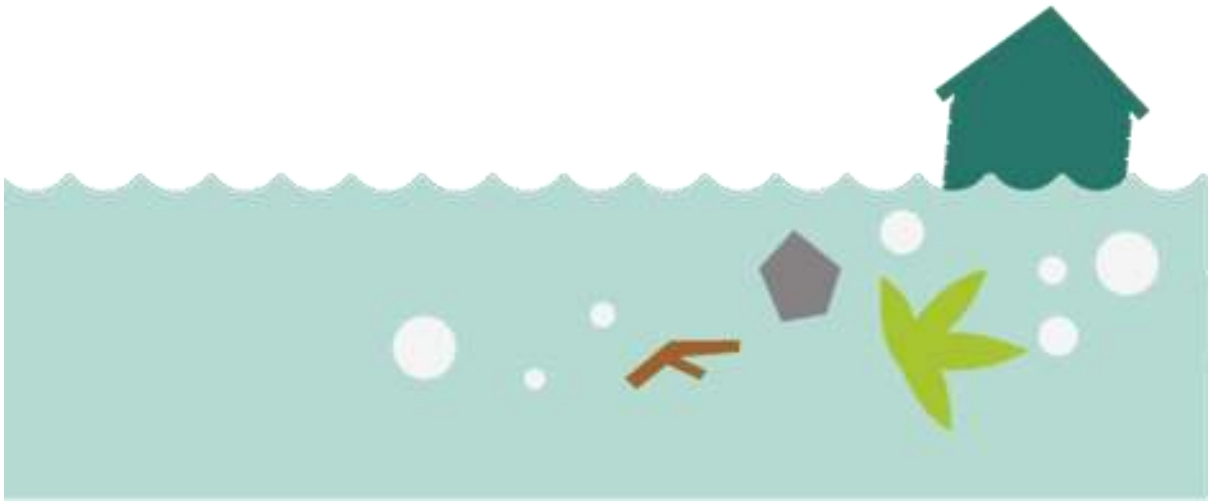
Module 5 Way Forward: Planning Local Training

Objective

The purpose of this module is to provide participants with the opportunity to plan and review the Town Watching training modules for local training or implementation.

Course Materials

The slide deck is Module5.pdf shown in Figure 5.



1. Outline (slide 2)

The outline of the presentation is as follows:

1. Way forward
2. Group discussion
3. Breakout room
4. Sharing session
5. Concluding remarks

2. Way Forward (slide 3 to 4)

The objectives of the Way Forward session is for participants to develop post-workshop action plan to:

- Adopt and apply Town Watching Mapping (TWM) at their local economy level;
- Share materials and skills acquired from training to be used at economy level;
- Engage stakeholders to develop a community-based Flood Disaster Preparedness plan at their economy level; and
- Explore integration of the Community-based FLOOD Ranger programme (or similar) and Town Watching Map into of their economy's existing policy framework.

Participants may consider the various aspects listed in slide 4.

3. Group discussion (slide 5 to 9)

Participants should fill in the forms given in slides 5 to 9 which cover:

1. Use or adapt materials relevant to your respective economies (especially module (slides), videos and Town Watching Map guideline and form)
2. Organise localised Training of Trainers (ToT) workshop within your economy
3. Town Watching Map
4. Integration of Community-based Town Watching Map into your economy's existing policy frame
5. Other plans or recommendations

Form for Way Forward discussion

Aspect	Proposed action	Quantity/ frequency	Timeline*	Any support needed**
1. **Use or adapt materials relevant to your respective economies (especially module (slides), videos and Town Watching Map guideline and form)**				
i. How are you going to share the training materials (modules and exercise) in your economy, with relevant agencies as well as local communities? ➢ through website, social media, print				
ii. Will you adopt these measures in flood prone areas within your economy? ➢ translate, enhance, localized, etc.				
ii. Do you plan to develop new and relevant material(s)				

Aspect	Proposed action	Quantity/ frequency	Timeline*	Any support needed**
2. **Organise localised workshop (TOT) within your economy**				
i. Conduct FLOOD Ranger training (community based preparedness programme)				
ii. Conduct Town Watching Map training (ToT) ➢ *Details include* ➢ *Numbers,* ➢ *Which level, federal (central), state/local level/ community level,* ➢ *your target group,* ➢ *smart partnership : Agencies, NGOS, private sectors and community*				

Aspect	Proposed action	Quantity/ frequency	Timeline*	Any support needed**
3. **Town Watching Map**				
i. Develop or support the Town Watching Map development ➢ Details include ➢ *Numbers,* ➢ *Which level, federal (central), state/local level/ community level,* ➢ *your target group,* ➢ *smart partnership : Agencies, NGOS, private sectors and community*				

Aspect	Proposed action	Quantity/ frequency	Timeline*	Any support needed**
4. **Integration of Community-based Town Watching Map into your economy's existing policy frame**				
i. How do you propose to integrate this approach into your economy's existing policy framework?				
ii. Do you think your economy has the right existing mechanisms and platforms for this? ➢ Detail : at federal/central, state and local level				

Aspect	Proposed action	Quantity/ frequency	Timeline*	Any support needed**
5. **Other plans or recommendations**				
i. Other plans besides abovementioned aspects				

4. Breakout room (slide 10 to 19)

Participants are divided into groups and assisted by a facilitator in their discussions. Discussions wuld normally follow a three step approach to allow for free discussion:

Step 1: Brainstorming

Step 2: Discussion

Step 3: Presentation

The group should selct a representative to present their results.

5. Sharing session (slide 20)

Groups can present their proposals and the trainer may provide comments to improve their proposals.

6. Concluding remarks

The trainer can summarise the workshop and proposals.

An example of the coverage and content is provided in Appendix 1.

Figure 5 Slide deck for Module 5

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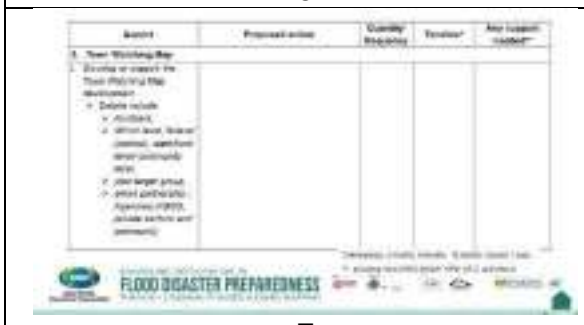

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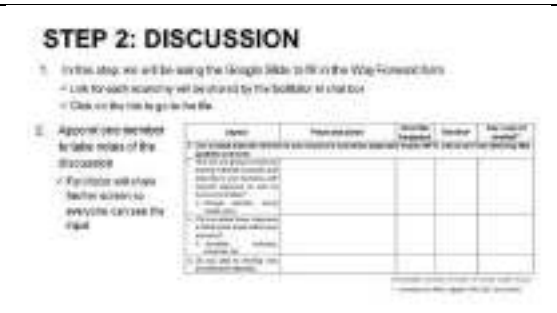

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BREAKOUT ROOM SESSION
• If you are ready, we will start now
• The 'join' instruction will pop-out
• Just click the 'join' button
• See you in 45 minutes
FLOOD DISASTER PREPAREDNESS

19

SHARING SESSION
Economic
Person
Malaysia
Philippine (group 1)
Chile
Philippine (group 2)
Brunei
FLOOD DISASTER PREPAREDNESS

20

healthier environment; better economy; more cohesive society
together we achieve more
Thank You!
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Appendix 1 Preparing for a Town Watching Workshop

1. Purpose of the Workshop

A workshop can demonstrate and encourage the practice of the Town Watching methods. The purpose is to present the steps of the method and to provide some tools for conducting the Town Watching observations and to translate the information into a map. It also provides the participants with hands-on skills since participants will be given the chance to try out the method and discuss with others about preparing a safe evacuation and response under a flood hazard situation.

2. Target Group

The participants targeted in this workshop are those who could be expected to lead, or contribute to, economy-level training in flood disaster response management to local communities. The participants will benefit by obtaining knowledge on best practices and foresight planning, learning the Town Watching approach, and consideration of its use for flood disaster response planning at their own economy-level. They are expected to use this knowledge to develop training workshops or sessions or events where the Town Watching approach is applied at their community level and/or for training other trainers on the approach. In this manner, the impact of this project may then be cascaded and multiplied at the local level.

3. Recommended background of participants

The participants should be from institutions which are actively engaged in community training or who can facilitate future community training. It is expected that participants are responsible for, and would have been involved in, community-level education and training activities for at least the past one year, either in formal or non-formal settings. The history of collaboration between the prospective participants with local-level government agencies is to enhance likelihood of support of any subsequent training to be delivered by the participants to the local-level later. Project participants may be from various agencies, such as from:

- community-level training and education units of central domestic-level disaster management agencies, community health agencies, educational or academic institutions.
- local government office units which are responsible for community training; and
- community-based (CBOs), and non-governmental organisations (NGOs), including school and higher education institution clubs/associations, which have been actively working with local government agencies in training and

education. NGO/CBO representatives are viewed as a sustainable solution for extension of training to the community at large.

No specific level of technical expertise in flood disaster response is required, although it is expected that participants have previously facilitated or conducted non-formal or adult community-level training in environmental or hazard-related topics. That is, participants should have some skills in adult education approaches.

4. Gender Perspective

Flood disasters affect both men and women, young and old, however, the impact is felt differently by the different groups. In consideration of this, the APEC economies are strongly encouraged to encourage a gender balanced team of trainers/facilitators and participants to the workshop as well as consider the potential leadership roles which their nominees may play in post workshop training at the local level. A target achieve at least 40% women participants in the workshop could be set. In this respect, trainers from gender-focal point agencies of the APEC economies are also suitable candidates as participants, as flood response thinking require gender perspectives and considerations for planning and management. The project outcomes and project objective are expected to benefit women by highlighting these different impacts and types of considerations that should be included in planning flood response activities in support of the APEC Gender Criteria Pillars of Skills, Capacity Building, and Voice.

5. ICT Facilities for Physical/Hybrid/Virtual Workshop

Participants in a physical workshop should be requested to bring laptops and the workshop organisers should also be prepared to make arrangements to have laptops available for participants to use if the E-maps module will be taught. Participants joining virtually will require access to a computer (desktop or laptop), preferably with an attached camera, and stable internet services capable of supporting interactive video streaming. Smartphones are not suitable for virtual participation.

We recommend the following hardware minimum requirements:

- CPU: 2 GHz Dual-Core I3 Processor
- RAM: 4GB
- Storage: 40GB
- Network Adapter: (Recommended) 256Kbps/2Mbps (Minimum)100Kbps/300Kbps
- Others: Digital camera(s), Headset

Participants joining virtually may choose to use headphones with a microphone, although this is usually not necessary.

A digital camera or phone camera with video recording capabilities is recommended for the Town Watching field exercise.

A video conferencing application will be used for hybrid/virtual events, and it is recommended that the software selected is one that participants may register and download the software for free. Guidance should be provided on the installation and use of the software. Participants should be able to contact the organisers to resolve any technical problems. Test runs could be conducted in the period of two weeks prior to the workshop to ensure all participants can be well connected and familiar with the application controls. It is recommended that a briefing session be conducted in the week before the workshop.

After confirmation of acceptance, all participants and speakers should conduct test runs on the Zoom platform with the organizer.

It is recommended that virtual participants connect to the workshop meetings in a quiet, undisturbed environment, to ensure the quality of the event for themselves and other participants. Participants may connect personally or in a group in a classroom or meeting room setting. In such cases, they should ensure that the audio-video facilities available are adequate to allow for all participants to be able to interact.

6. Facilities for the Town Watching Exercise

For the Town Watching exercise component of the training, the outdoor field exercise is considered as the best option although the exercise may be conducted as an indoor exercise as well, using materials available to the participants, either using online applications or offline using stationary materials, according to their local circumstances. The exercise may be conducted individually, although we recommend that the exercise is best conducted in small groups, within the local setting, to allow for discussion and consultation among group members.

Online mapping applications (such as Google MyMaps, Google Earth and Openstreet Maps) could be demonstrated as one of the methods for flood disaster response plan mapping using the E-map module. Participants may also choose to use any mapping application with which they are familiar. This is not a requirement when conducting the workshop and participants may optionally develop the map manually and use physical materials (white paper, colour marker pens, sticky labels and other stationary) to create the maps. A list of stationary materials for the field exercise will be provided to participants. If the Workshop is conducted online, the participants should then be requested to photograph their map and upload into the Workshop folder online. Maps made do not have to be to scale. Please consider any confidentially requirements of the participants' economy when groups are developing the maps.

7.`Ice-Breaking Session Introduction to the Workshop

It is useful to conduct an introductory session before the workshop proper begins and to allow participants to understand the structure of the workshop and the different modules which will be presented.

An example is given in the slide deck on introducing the overall workshop programme as well as on use of online meeting platform, such as Zoom. We also include a slide deck of sample summary and concluding remarks.

Slideck for Introduction to workshop format

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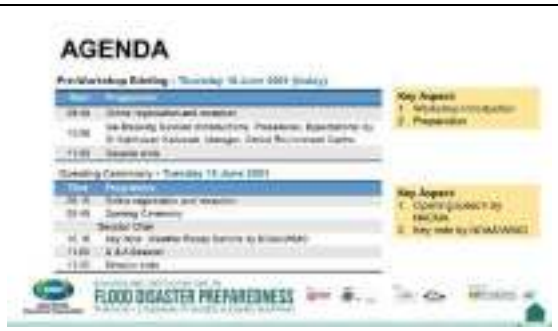

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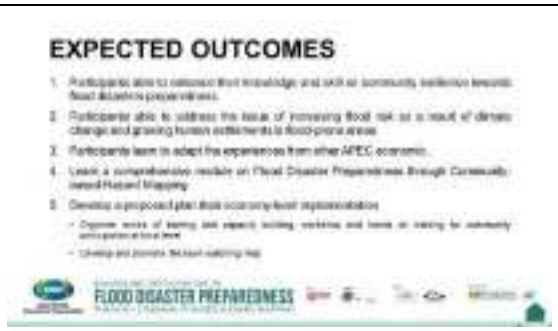

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Slide deck for introduction to online meeting platform

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Slide deck of summary and concluding remarks

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healthier environment; better economy; more cohesive society
together we achieve more
THANK YOU
TERIMA KASIH
GRACIAS
ERESS EL MAJOR!
IKAW ANG PINAKAMAHUSAY!
YOU ARE THE BEST!
FLOOD DISASTER PREPAREDNESS

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Appendix 2 Malaysian Experience in Town Watching

Presentation by Dr Kalithasan Kailasam

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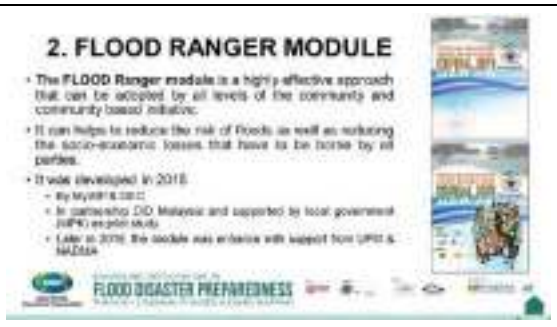

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