

INFORMATION ON THE REGION-FOCUSED TRAINING COURSE

***FLOOD HAZARD MAPPING***

***JFY 2005***

**東・東南アジア地域別：洪水ハザードマップ作成**

COURSE NO.: J-05-04064

October 31, 2005 ~ December 3, 2005



# *Preface*

The Government of Japan extends official development assistance (ODA) to developing countries to support self-help efforts that will lead to economic progress and a better life for the citizens of those countries.

Since the founding of the Japan International Cooperation Agency (JICA) in 1974, JICA has implemented Japan's technical cooperation under the ODA program.

Currently, JICA conducts a broad range of activities, including training, dispatch of experts, provision of equipment, project-type technical cooperation, development studies, dispatch of cooperation volunteers (JOCV), and survey and administration of capital grant aid programs.

Training programs for overseas participants are one of JICA's fundamental technical cooperation activities for developing countries. Participants come from overseas in order to obtain knowledge and technology in a wide variety of fields.

The objectives of JICA training programs are:

- (1) to contribute to the development of human resources which will promote the advancement of developing countries, and
- (2) to contribute to the promotion of mutual understanding and friendship.

This “Flood Hazard Mapping” training course first started in fiscal 2004 as a region-focused training course for East and Southeast Asian countries. The goal of this course is to contribute to the mitigation of flood disasters in the Asian monsoon region. The course is specifically designed for technical managers or engineers who are involved in flood or river management in the public sector. Every year until fiscal 2008, sixteen trainees (two from each country) will be accepted into the program, and they are expected to acquire general understanding of the effectiveness of flood hazard maps in mitigating flood damage and to learn practical techniques for producing them.

## I. ESSENTIAL FACTS

COURSE TITLE	Flood Hazard Mapping (J-05-04064)
DURATION	October 31, 2005 – December 3, 2005
DEADLINE FOR APPLICATION	September 2, 2005 * Applications must be sent to the JICA Office or the Embassy of Japan
NUMBER OF PARTICIPANTS	16 (2 from each country) maximum
LANGUAGE	English
TARGET GROUP	Technical managers or engineers who are engaged in flood or river management at the national or local level in the public sector such as governmental / provincial ministries or municipalities.
COURSE OBJECTIVES	Trainees are expected to acquire: (a) Professional knowledge and practice on hydrological, hydraulic and river engineering necessary to produce flood hazard maps, (b) General knowledge of flood hazard maps in the world/ in Asia/ in Japan, (c) Understanding of the effectiveness of flood hazard maps, and ways to disseminate and utilize them for people, (d) Methods to enhance people's capability and promote public awareness to mitigate flood damage, (e) Understanding of ways of producing and applying flood hazard maps for their own countries/regions
TRAINING INSTITUTION	(1) Public Works Research Institute (PWRI) <b>Address:</b> 1-6, Minamihara, Tsukuba, Ibaraki, 305-8516, Japan <b>Tel:</b> +81-29-879-6809, <b>Fax:</b> +81-29-879-6709, <b>URL:</b> <a href="http://www.pwri.go.jp">http://www.pwri.go.jp</a> (2) National Institute for Land and Infrastructure Management (NILIM), MLIT <b>Address:</b> 1 Asahi, Tsukuba, Ibaraki, 305-0804, Japan <b>Tel:</b> +81-29-864-2211, <b>Fax:</b> +81-29-864-4322, <b>URL:</b> <a href="http://www.nilim.go.jp">http://www.nilim.go.jp</a>
ACCOMMODATIONS	Tsukuba International Center (JICA TSUKUBA) <b>Address:</b> 3-6, Koyadai, Tsukuba-shi, Ibaraki-ken, 305-0074, Japan <b>Tel:</b> +81-29-838-1111, <b>Fax:</b> +81-29-838-1119, <b>URL:</b> <a href="http://www.jica.go.jp/">http://www.jica.go.jp/</a> *In case no rooms are available at the JICA TSUKUBA or in case participants must stay in other cities, JICA will arrange other appropriate places to accommodate participants.
ALLOWANCES & EXPENSES	The Government of Japan provides the following allowances and covers the following expenses through JICA in accordance with relevant laws and regulations. <u>Details:</u> Round-trip air ticket between an international airport designated by JICA and Japan; allowances for accommodations, living, outfits, books, and shipping; expenses for JICA study tours, medical care. Note that medical costs will be only covered for participants who become ill after arrival in Japan and that costs related to pre-existing illnesses, pregnancy and dental treatment are not included.

<Training Institution: Public Works Research Institute (PWRI) >

The Public Works Research Institute (PWRI) has been carrying out multidisciplinary research and development for enhancing civil engineering technologies and providing quality infrastructure for more than 80 years, covering a wide range of fields such as hydrologic and hydraulic engineering, erosion and sediment control engineering, water environment, earthquake disaster prevention and others. Many large-scale testing facilities, a wealth of research literatures and abundant experiences effectively support JICA's activities. PWRI has a close connection with other national organizations in charge of the construction and management of infrastructures, often cooperating with academic organizations and private companies. The fruit of these efforts has been utilized significantly through improving the practical standard specifications and manuals, and providing technical guidance and training for infrastructure managers in Japan as well as in developing countries.

The importance of taking appropriate actions to mitigate water-related disasters such as floods and droughts has been emphasized at numerous international events and conferences. Aware of that, PWRI is currently preparing to establish an international centre on water-related hazard and risk management under the auspices of UNESCO in coordination with the agencies and research institutes concerned. The Centre is designed to conduct research, training and information networking activities, focusing on water-related hazard and risk management.

## ***II. CURRICULUM***

- 1. Presentation of the flood situations and current countermeasures in the participants' countries or regions**
- 2. Flood situations and countermeasures to reduce flood damages in Japan**
- 3. Outline of flood hazard maps in the world/ in Asia/ in Japan**
- 4. Effectiveness of flood hazard maps - a case of Japan-**
- 5. Procedure for producing a flood hazard map**
  - (1) Collect and classify information
  - (2) Set-up basic conditions
  - (3) Draw up a historical flood map
  - (4) Draw up a flood-prone area map
  - (5) Draw up evacuation scenarios
  - (6) Produce a flood hazard map
  - (7) Distribute and educate the use of flood hazard maps

## **6. Methods for fundamental analysis necessary to produce a flood hazard map**

- (1) Drawing up a historical flood map
- (2) Runoff simulation
- (3) Using a global information system
- (4) Inundation simulation

## **7. “Town Watching”: a group field study in flood-prone area**

- (1) Investigation on site
- (2) Discussion in group and making a map
- (3) Presentation and discussion on the map

## **8. Flood hazard mapping in group**

## **9. Producing, presenting and discussing concluding reports**

At the end of the course, all participants are required to produce and present a three-page concluding report for discussion on how to produce and utilize flood hazard maps in their countries. A report should include problems involved in their implementation and possible solutions for them.

## ***III. REQUIREMENT FOR APPLICATION***

Applicants should be:

- (1) nominated by their government in accordance with the procedures mentioned in IV
- (2) technical managers or engineers with at least five years experience (two years for Doctor holders) and currently engaged in river or flood management issues in the public sector
- (3) university graduates or equivalent
- (4) be proficient in spoken and written English (Inadequate command English will hinder training as well as their dairy life)
- (5) under 40 years of age
- (6) in good health (both physically and mentally fit for the training)
- (7) non-military personnel

### **ATTENTION**

Participants are required:

- (1) not to change course subjects or extend the course period
- (2) not to bring any members of their family
- (3) to return to their home country at the end of the course according to the international travel schedule designated by JICA
- (4) to refrain from engaging in political activities or any form of employment for profit or gain
- (5) to observe the rules and regulations of their place of accommodation and not to change

accommodations designated by JICA

## ***IV. PROCEDURE FOR APPLICATION***

1. Governments desiring to nominate applicants for the course should fill in and forward one (1) original and three (3) copies of the Nomination Form (Form A2A3), and the “Report on Flood Situations and Countermeasures to Reduce Flood Damages” for each applicant, as described in ANNEX I, to the JICA Office (or the Embassy of Japan) **by September 2, 2005**.
2. The JICA Office (or the Embassy of Japan) will inform the applying government whether or not the nominee's application has been accepted **no later than September 30, 2005**.
3. **“Report on Flood Situations and Countermeasures to Reduce Flood Damages” to be submitted together with the Nomination Form and sent by E-mail**

All applicants for this training course are required to prepare and submit a report under the title of “Report on Flood Situations and Countermeasures to Reduce Flood Damages ” to introduce flood occurrences and flood management policies in their own regions or countries as described in ANNEX I. The report must be 11-13 pages and typed, and sent by E-mail ([whrm@pwri.go.jp](mailto:whrm@pwri.go.jp)).

4. **Preparation of presentation of “Report on Flood Situations and Countermeasures to Reduce Flood Damages”**

At the beginning of the course, all participants are required to make a ten-minute presentation of the above report by using Power-Point slides, which should include some photos and figures. Therefore, the participants are requested **to prepare and bring those presentation materials with them in digital/electronic devices such as a floppy disk or CD-ROM.**

## ***V. OTHER MATTERS***

1. A pre-departure orientation will be held at JICA overseas offices to inform the selected candidates of details on travel to Japan, conditions of training, and other matters. Participants will watch a video, “TRAINING IN JAPAN”, and will receive a textbook and cassette tape, “SIMPLE CONVERSATION IN JAPANESE”.

A brochure, “GUIDE TO TRAINING IN JAPAN” will be handed to each selected candidate

before (or during) the orientation.

2. Participants who have successfully completed the training course will be awarded a certificate by JICA.

## ANNEX I

### Format of “Report on Flood Situations and Countermeasures to Reduce Flood Damages”

#### < Cover Page >

Report on Flood Situations and Countermeasures  
to Reduce Flood Damages  
in < YOUR COUNTRY >

JICA region-focused training course on flood hazard mapping

JFY 2005

Prepared by < YOUR NAME >  
< YOUR POSITION >, < YOUR ORGANIZATION >  
< YOUR COUNTRY >

#### <Main Pages>

##### *. Organization (Maximum two pages)*

###### 1) Name of your organization

Please describe the name of your organization, contact address, telephone & fax number, and website address.

###### 2) Outline of your organization

Please describe the role, objective, mission and main activities of your organization.

###### 3) Organization chart

Please include your organization’s chart and describe the mission of each section as well as the number of staff.

###### 4) Your recent work

Please describe your position and role in your organization, and your main work that you have done for the last five years.

##### *. Overview of national policies on flood management (Maximum four pages)*

###### 1) Information on flood management policies in your country

Please introduce the outline of flood management policies and flood control works

(structural and non-structural) in your country as well as institutional and legislative frameworks including flood hazard maps.

2) Information on countermeasures to reduce flood damages including laws and regulations

Please fill in the following two tables using SAMPLE Table 1 and 2.

Table 1: Disaster mitigation program/practice entry form:

		Individual initiatives	Community Initiatives	Government initiatives
Pro-active response	Risk Reduction			
	Damage Mitigation			
Re-active response (during and after flooding)	Emergency Management			
	Rehabilitation and Restoration			

Table 2: Law and legislation entry form:

		Individual initiatives	Community initiatives	Government initiatives
Pro-active response	Risk Reduction			
	Damage Mitigation			
Re-active response (during and after flooding)	Emergency Management			
	Rehabilitation and Restoration			

[SAMPLE] See the following sample tables for reference:

Table 1: Disaster mitigation program/practice in Japan

		Individual initiatives	Community Initiatives	Government initiatives
Pro-active response	Risk Reduction	- resettlement to safer area - elevate housing land	- ring levee - drainage pump	flood control project (levee rising, levee set-back, dredging and widening river channels, divergence and by-pass channels, and flood control dams, etc.)

	<b>Damage Mitigation</b>	- flood insurance - flood proofing: e.g. mizuya (water proof house) - emergency provision	- flood fighting corps - flood fighting materials - designation of shelters and evacuation routes - safety check of levees before rainy season and reporting to government authorities.	- water level and rainfall observation; - precipitation forecast, flood forecasting system, weather information system; - evacuation drill - risk communication workshops - flood forecasting dissemination - hazard maps - dissemination systems and support for evacuation - official communication system for transmission of disaster information - emergency drainage pump - organization of rescue teams
Re-active response (during and after flooding)	<b>Emergency Management</b>	- collection of information (weather broadcasting and internet) - raising household goods - self-initiated evacuation	- flood fighting (patrolling of river and levees, flood control construction work), - dissemination of information - group efforts for voluntary evacuation, enquiring into safety conditions, - designation of shelters and distribution of emergency food	- informing real-time rainfall and water level - announcement of flood forecasting and of warning - announcement of evacuation order and evacuation directives - multi-channel alert dissemination - sending rescue teams - procurement and offer of emergency provisions and shelter goods
	<b>Rehabilitation and Restoration</b>	- disposal of rubbish - removing mud - restoration of household goods	- collecting and distributing relief funds - learning and reporting lessons from the disaster.	- restoration of affected facilities (business restoration) - inspection of the cause of disaster - reevaluation of disaster prevention works and their implementation

Table 2: Related law and legislation:

		<b>Individual initiatives</b>	<b>Community initiatives</b>	<b>Government initiatives</b>
Pro-active response	<b>Risk Reduction</b>		- Flood Prevention Association Law	- Disaster Countermeasures Basic Law - River Law - Specific-Multipurpose Dam Law
	<b>Damage Mitigation</b>		- Flood Fighting Law - Fire Organization Law	Flood Fighting Law Meteorological Services Law
Re-active response (during and after flooding)	<b>Emergency Management</b>		- Flood Fighting Law - Flood Prevention Association Law	- Disaster Countermeasures Basic Law - Flood Fighting Law - Meteorological Services Law - Disaster Relief Law
	<b>Rehabilitation and Restoration</b>	- Law for Socio-economic Rehabilitation Aid for Victims		- Disaster Countermeasures Basic Law - Law on Disaster Recovery for State Funding of Public Infrastructures Projects

3) General discussion and analysis (personal opinions are welcome)

analysis of the people's response to flood alerts (e.g. reasons for ignoring or slighting alerts);

applicability of advanced technologies such as radars or satellites in flood forecasting (e.g. prospects and limitations of these technologies to effectively improve flood risk reduction);

*. Introduction of the target area to which you want to apply a flood hazard map (Maximum five pages)*

- 1) Selection of one target area (municipality, province/prefecture, country, etc.) to which you want to apply a flood hazard map
- 2) Introduction of the policies and countermeasures for flood management, damage mitigation, and emergency response measures in the area.
- 3) Introduction of its geographic, demographic and hydro-meteorological characteristics by using base maps.
- 4) Introduction of the past flood disasters, and their social/economical damages in this area, based on the record of the last 10 years or more.
- 5) Introduction of the number and the types of candidate evacuation center such as primarily schools, nursing homes.
- 6) Introduction of the number and the types of disaster prevention centers, including police offices and fire stations.
- 7) Your ideas on how to prepare and distribute flood hazard maps in the area

***. Report on the Activities by the Last Participant of This Training Course (Maximum two pages)***

Please report the activities by the last year's participants from your country (after the training ~ present). If there are two of them, please report the activities respectively. The names of the last year's participants, the organizations they belong to, and their concluding reports of the training course are available on the website (<http://www.unesco.pwri.go.jp/>).

**<Notes>**

- i) A report must be written on A4 size papers (210mm X 297mm) in single spacing.
- ii) A report must be sent as a PDF file by e-mail ([whrm@pwri.go.jp](mailto:whrm@pwri.go.jp)).
- iii) Each page should contain about 500 words.
- iv) Photos, figures and graphs should be effectively used.



***CORRESPONDENCE***

For enquiry and further information, please contact a JICA office or Embassy of Japan, or address correspondence to:

**Program Team ,  
Tsukuba International Center (JICA TSUKUBA),  
Japan International Cooperation Agency (JICA)**

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