



TRAINING AND DIALOGUE PROGRAMS

GENERAL INFORMATION ON

Comprehensive Bridge Engineering

集団研修「橋梁総合」

JFY 2011

<Type: Trainers Training / 類型: 人材育成普及型>

NO. J11-00716/ ID. 1180948

From September 25, 2011 to October 29, 2011

This information pertains to one of the Training and Dialogue Programs of the Japan International Cooperation Agency (JICA), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

I. Concept

Background

Construction of bridges is important for stable social life and economic development in the developing countries however the level of bridge engineering in those countries is not high enough. It deems essential to raise the technical knowledge and skills of personnel who is engaged in every aspects of work related to bridges in order to promote construction and repair of bridges.

The objective of this course is to contribute to promotion of bridge construction, solutions to technical problems regarding bridges and social development of participating countries by providing bridge engineering technologies of Japan to the participants.

For what?

The course aims to enhance technical capacity of mid-level engineers who are in charge of bridge engineering (design, construction/construction supervision, maintenance and repair of bridges) in developing countries. The course topics mainly concern Steel Bridges, PC Bridges, RC Bridges,••but masonry(stone) bridges are not included.

For whom?

Staff of competent government agencies or governmental organizations responsible for bridge engineering (design, construction/construction supervision, maintenance and repair of bridges).

How?

Participants shall have opportunities to know improvement process of bridge engineering in Japan through lectures, observations, and discussions.

Participants will also formulate an action plan describing what the participant will do after they go back to home country putting the knowledge and ideas acquired and discussed in Japan among others.

II. Description

1. Title (J-No.): Comprehensive Bridge Engineering Course (J1100716)

2. Period of program

Duration of whole program: June 2011 to March 2012

Preliminary Phase: June to September, 2011 (in a participant's home country)

Core Phase in Japan: September 25 to October 29, 2011

Finalization Phase: November 2011 to March 2012 (in a participant's home country)

3. Target Regions or Countries

Indonesia, Mongolia, Mozambique, Bhutan, Bangladesh, Botswana, Nepal, Papua New Guinea, El Salvador, Turkey, Egypt, Sudan, Ethiopia, Togo, Uganda, Vietnam, Zambia

4. Eligible / Target Organization

Competent government agencies or governmental organizations responsible for bridge engineering (design, construction/construction supervision, maintenance and repair of bridges).

5. Total Number of Participants

18 participants

6. Language to be used in this program: English

7. Program Objective:

Participants can understand and explain the following:

- (1) design of bridges (*acquisition of design technique using software is NOT included in the course objectives*)
- (2) construction and construction supervision of various types of bridges (RC, PC and steel bridges)
- (3) maintenance and repair of various types of bridges

8. Overall Goal

To improve the capacity of bridge engineering in Recipient Country, contributing to efficient and effective social infrastructure improvement.

9. Curriculum:

Main subject	Program/ Detail	Objective
A. Bridge Planning in Japan	<ol style="list-style-type: none"> 1. Roads and Bridges in Japan 2. 3. Bridge Planning 4. 5. 6. Design and Construction of Long-span Bridges 7. Maintenance of Long-span Bridges 	Understanding the present conditions of roads and bridges in Japan, as well as future road and bridge plans, through lectures
B. Design and Construction of Substructures	<ol style="list-style-type: none"> 1. Soil Surveys for Bridge Foundation 2. Design and Construction of Foundations 3. Design and Construction of Substructures 	Understanding soil surveys and substructure design and construction through lectures
C. Design and Construction of Concrete Bridges (PC and RC Bridges)	<ol style="list-style-type: none"> 1. Design and Construction of Reinforced Concrete Bridges 2. Design and Construction of Prestressed Concrete Bridges 3 Field Trip to a PC Factory 4 Field Trip to RC Bridge Construction Site 	Learning the PC and RC design and construction processes and making field trips to PC manufacturing plants so that participants are able to understand the present conditions of concrete bridges in Japan and so that what they learn in this session of training can be applied to bridges in each country
D. Steel Bridges	<ol style="list-style-type: none"> 1. Design of Steel Bridges 2. Fabrication and Construction of Steel Bridges 3. Field Trip to a Steel Bridge Manufacturing Plant 	Learning the knowledge of steel bridge design and construction and making field trips in order to understand the bridge technology of Japan
E. Bridge Accessories	<ol style="list-style-type: none"> 1. Design and Construction of Bridge Accessories (Bearing and Expansion Joint) 	Learning the knowledge of bridge accessories such as bearings and expansion joints
F. Bridge Maintenance and Repair	<ol style="list-style-type: none"> 1. Overview of Bridge Inspection 2. Bridge Inspection Technique 3. Repair and Strengthening of Bridges 4. Bridge Inspection Practice for Concrete Structures 5. Bridge Inspection Practice for Steel Structures 6. Maintenance for Bridges 7. Maintenance for Long-span Bridges 	Recognizing the importance of bridge inspection, maintenance and repair techniques through lectures and field practice

Main subject	Program/ Detail	Objective
G. Having Discussions and Preparing Training Reports	1. Presentation of Country Reports 2. Action Plan Presentation	Discussing issues to be addressed in participants' countries and questions that they have about bridges. Preparing reports on how issues can be solved based on the knowledge and experience acquired through this training, and presenting action plans.

There will, however, be minor changes in several subjects.

10. Follow-up Cooperation by JICA:

In this program, JICA might extend follow-up support to participating organizations that intend to develop the result of the program further. Please note that the support shall be extended selectively based on proposals from the participating organizations.

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations:

- (1) This program designed primarily for organizations that intend to address specific issues or problems identified in their operations. Applying organizations are expected to use the Program for those specific purposes.
- (2) In this connection, applying organizations are expected to nominate the most qualified candidates to address the said issues or problems, carefully referring to the qualifications described in section III-2 below.
- (3) Applying organizations are also expected to be prepared to make use of knowledge acquired by the nominees for the said purpose.

2. Nominee Qualifications:

Applying Organizations are expected to select nominees who meet the following qualifications.

(1) Essential Qualifications

- 1) Current Duties: be an engineer currently engaged in bridge engineering (design, construction/construction supervision, maintenance and repair of bridges),
- 2) Educational Background: be university graduates specialized in civil engineering or equivalents preferably with five(5) - fifteen (15) years of work experience (3 years or more in bridge designing desirable),
- 3) Not have participated in any JICA training courses in Japan in the past,
- 4) Language: be proficient in spoken and written English. Please attach an official certificate for English ability such as TOEFL, TOEIC etc, if possible.
- 5) Health: must be in good health, both physically and mentally, to participate in the

Program in Japan. Pregnant participants are strictly requested to complete the required procedures before departure in order to minimize the risk for their health. The procedures include ① letter of the participant's consent to bear economic and physical risks, ② letter of permission from the participant's supervisor, letter of consent from your Embassy in Japan, ④ medical certificate. Please ask National Staff in JICA office for the details, and

6) Must not be serving any form of military service.

3. Required Documents for Application

(1) Application Form:

The Application Form is available at the respective country's JICA office or the Embassy of Japan.

(2) Job Report

Each applicant is required to fill in the Job Report on the format attached in Annex I and submit it together with the Nomination Form. As applicants' Job Report will be used for the screening of applicants, applications not accompanied by a completed Job Report will not be considered as duly qualified.

4. Procedure for Application and Selection:

(1) Submitting the Application Documents:

Closing date for application to JICA Hyogo: **August 12, 2011.**

Note: Please confirm the closing date set by the respective country's JICA office or Embassy of Japan of your country to meet the final date in Japan.

(2) Selection:

After receiving the document(s) through due administrative procedures in the respective government, the respective country's JICA office (or Japanese Embassy) shall conduct screenings, and send the documents to JICA Hyogo, which organizes this project. Selection shall be made by JICA Hyogo in consultation with the organizations concerned in Japan based on submitted documents according to qualifications. *The organization with intention to utilize the opportunity of this program will be highly valued in the selection.*

(3) Notice of Acceptance

Notification of results shall be made by the respective country's JICA office (or Embassy of Japan) to the respective Government by **not later than September 2, 2011.**

5. Document(s) to be submitted by accepted participants:

Country Report -- to be submitted by September 16, 2011

Each applicant is required to make a Country Report on the format attached in Annex II and submit it by e-mail <Tatsumi.Kazuko@jica.go.jp>. If it is difficult to send it by e-mail because of large volume of data and so on, please submit it to JICA office.

Participants will be required to make a presentation of his/her country report during the seminar in the following manner.

- (1) Each participant has 20 minutes (including Q&A session) for the presentation of the Country Report.
- (2) Please bring along with you such audiovisual aids which may facilitate your presentation as videos, 35 mm slide pictures, and CD-ROMs. It is suggested that you should include the pictures of bridges and design plan.

Equipment, such as video cassette player, slide projector, overhead projector, computer and projector is available to use at JICA center Tokyo.

The presentation session of Country Reports will be held in early stages of the Program.

6. Conditions for Attendance:

- (1) to follow the schedule of the program,
- (2) not to change the program subjects or extend the period of stay in Japan,
- (3) not to bring any members of their family,
- (4) to return to their home countries at the end of the program in Japan according to the travel schedule designated by JICA,
- (5) to refrain from engaging in political activities, or any form of employment for profit or gain,
- (6) to observe Japanese laws and ordinances. If there is any violation of said laws and ordinances participants may be required to return part or all of the training expenditure depending on the severity of said violation.
- (7) to observe the rules and regulations of their place of accommodation and not to change the accommodation designated by JICA.

IV. Administrative Arrangements

1. Organizer: Hyogo International Center, JICA (JICA Hyogo)

2. Implementing Partner:

Name: Honshu—Shikoku Bridge Expressway Company Limited (HSBE)

Address: 4-1-22 Onoe-dori, Chuo-ku, Kobe, Hyogo Prefecture, 651-0088,
Japan

TEL: 81-78-291-1000 **FAX:** 81-78-291-1363

URL: <http://www.jb-honshi.co.jp/english/index.html>

3. Travel to Japan:

(1) Air Ticket:

The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.

(2) Travel Insurance:

Term of Insurance: From arrival to departure in Japan.

4. Accommodation in Japan:

JICA will arrange the following accommodations for the participants in Japan:

JICA Hyogo International Center (JICA HYOGO)

Address: 1-5-2, Wakinohama-kaigandori, Chuo-ku, Kobe, Hyogo 651-0073,
Japan

TEL: 81-78-261-0341 FAX: 81-78-261-0342

(where "81" is the country code for Japan, and "78" is the local area code)

If there is no vacancy at JICA HYOGO, JICA will arrange alternative accommodations for the participants.

5. Expenses:

The following expenses will be provided for the participants by JICA:

(1) Allowances for accommodation, living expenses, outfit, and shipping

(2) Expenses for study tours (basically in the form of train tickets.

(3) Free medical care for participants who become ill after arriving in Japan (costs related to pre-existing illness, pregnancy, or dental treatment are not included)

(4) Expenses for program implementation, including materials

For more details, please see p. 9-16 of the brochure for participants titled "KENSU-IN GUIDE BOOK," which will be given to the selected participants before (or at the time of) the pre-departure orientation.

6. Pre-departure Orientation:

A pre-departure orientation will be held at the respective country's JICA office (or Japanese Embassy), to provide participants with details on travel to Japan, conditions of the workshop, and other matters.

V. ANNEX

ANNEX 1 Job Report

ANNEX 2 Country Report

ANNEX I

Comprehensive Bridge Engineering (JFY 2011)

Job Report

All the applicants are required to fill in this form and submit together with the Nomination Form.

* The report should be typewritten.

Name of Applicant: _____

Country: _____

1. Please describe your career in bridge engineering.

Period	Organization	Position/Title, Division/Department	Brief description of your work
<i>e.g.) 1990-1995</i>	<i>Ministry of Roads and Public Works</i>	<i>Engineer, Bridge Construction Section</i>	<i>Structural design of building Inspection of constructions and erection of bridges Supervising and checking of drawings for bridge constructions</i>

2. Please describe your current duties and responsibilities.

ANNEX II

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Country Report

Accepted participants are required to prepare the Country Report providing information on the following subjects and to make its presentation with power point using photos, pictures or illustrations in order to minimize explanation with written papers. The report should be within 20 slides.

*Please send the Country Report by September 16, 2011 to the following e-mail address before participating in the program. If you fail to send it by e-mail because of large volume of data, please send it in PDF file or send submit to JICA office in your country.

<Tatsumi.Kazuko@jica.go.jp>

1. Name of applicant
2. Country
3. Name of organization
4. Organization chart
Please attach an organizational chart and circle the section the applicant belongs.
5. Explain which organizations and/or positions are responsible for bridge engineering in each activity in the following.
 - 1) Planning
 - 2) Investigation
 - 3) Design
 - 4) Construction
 - 5) Maintenance and Repair
6. What kind of bottlenecks do you encounter in each of the above-mentioned activity, particularly those relating to equipment, management and organization?
7. Please fill out the following chart on Road Conditions in your country.

Type of Road	Total Length	Concrete Bridges		Steel Bridges		Total	
		Number	Total Length	Number	Total Length	Number	Total Length
Expressways	Km						
National Highways	Km						

Local Roads	Km						
Sub-total	Km						
Municipal	Km						
Total	Km						

8. Please indicate the vehicle load (including war tanks) used as a standard in designing normal types of bridges. _____ ton/vehicle

9. Material costs

1) Exchange Rate: \$1 (1 US dollar) = _____
 (Currency of your country)
 e.g., \$1 = 81 Japanese yen (June 2011)

2) Concrete Bridges

In the case of constructing the superstructure of a concrete bridge, note the most economical type of bridge and average cost of construction.

	Construction Cost	Type of Bridge
Simple girder bridge with a span length of 20 m	\$/m ²	
Simple girder bridge with a span length of 50 m	\$/m ²	
e.g.: Simple girder bridge with a span length of 20 m	800\$/m ²	Pretension P.C. T-girder

3) Steel Bridges

1. The average price of steel plate for bridges _____ \$/m²

2. In the case of constructing the superstructure of a steel bridge, note the most economical type of bridge and the construction cost.

	Construction Cost	Type of Bridge
Simple girder bridge with a span length of 20 m	\$/m ²	
Simple girder bridge with a span length of 50 m	\$/m ²	

10. Please bring the following photos.

- Photos and plans of bridge construction projects you are working on or worked in the past and the problems you faced
- Photos of bridges under construction
- Photos of modern and old bridges in your country
- Photos in which bridge maintenance problems can be seen

11. Information about ex-participants

Please give information listed below to the extent possible on ex-participants who participated in previous courses "Comprehensive Bridge Engineering" (held after the year of 2000) or "Bridge Engineering" (held between 2005 and 2009). The list of ex-participants in each country will be given with Acceptance Notice.

- 1) Name of the ex-participant
- 2) Participating Year
- 3) Present Work and Post
- 4) Is he (or she) engaged in bridge-related work or not?

For Your Reference

JICA and Capacity Development

The key concept underpinning JICA operations since its establishment in 1974 has been the conviction that "capacity development" is central to the socioeconomic development of any country, regardless of the specific operational scheme one may be undertaking, i.e. expert assignments, development projects, development study projects, training programs, JOCV programs, etc.

Within this wide range of programs, Training Programs have long occupied an important place in JICA operations. Conducted in Japan, they provide partner countries with opportunities to acquire practical knowledge accumulated in Japanese society. Participants dispatched by partner countries might find useful knowledge and re-create their own knowledge for enhancement of their own capacity or that of the organization and society to which they belong.

About 460 pre-organized programs cover a wide range of professional fields, ranging from education, health, infrastructure, energy, trade and finance, to agriculture, rural development, gender mainstreaming, and environmental protection. A variety of programs are being customized to address the specific needs of different target organizations, such as policy-making organizations, service provision organizations, as well as research and academic institutions. Some programs are organized to target a certain group of countries with similar developmental challenges.

Japanese Development Experience

Japan was the first non-Western country to successfully modernize its society and industrialize its economy. At the core of this process, which started more than 140 years ago, was the "*adopt and adapt*" concept by which a wide range of appropriate skills and knowledge have been imported from developed countries; these skills and knowledge have been adapted and/or improved using local skills, knowledge and initiatives. They finally became internalized in Japanese society to suit its local needs and conditions.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated from this "*adoption and adaptation*" process, which, of course, has been accompanied by countless failures and errors behind the success stories. We presume that such experiences, both successful and unsuccessful, will be useful to our partners who are trying to address the challenges currently faced by developing countries.

However, it is rather challenging to share with our partners this whole body of Japan's developmental experience. This difficulty has to do, in part, with the challenge of explaining a body of "tacit knowledge," a type of knowledge that cannot fully be expressed in words or numbers. Adding to this difficulty are the social and cultural systems of Japan that vastly differ from those of other Western industrialized countries, and hence still remain unfamiliar to many partner countries. Simply stated, coming to Japan might be one way of overcoming such a cultural gap.

JICA, therefore, would like to invite as many leaders of partner countries as possible to come and visit us, to mingle with the Japanese people, and witness the advantages as well as the disadvantages of Japanese systems, so that integration of their findings might help them reach their developmental objectives.



CORRESPONDENCE

Japan International Cooperation Agency (JICA)
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Kobe, Hyogo 651-0073, JAPAN
Tel.: 81(Country Code)-78(Area Code)-261-0341
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