

No.12040/16/2014-TRG(FTC/IR)  
Government of India  
Ministry of Personnel, Public Grievances and Pensions  
Department of Personnel and Training  
[Training Division]

Block-4, Old JNU Campus  
New Mehrauli Road, New Delhi-67  
Dated – May 08, 2014

**TRAINING CIRCULAR**

16

**Subject: Group Training Course in “Operation and Maintenance of Urban Water Supply System (Water distribution and Service) (B)” to be held in Japan from July 09 to August 13, 2014 under the Technical Cooperation Programme of the Government of Japan.**

The undersigned is directed to state that the Japan International Cooperation Agency (JICA) has invited applications for the above mentioned training programme to be held in Japan from July 09 to August 13, 2014 under the Technical Cooperation Programme of the Government of Japan.

2. The programme aims to contribute to the improvement of the techniques and knowledge of counterpart organizations and their related organizations of Japan’s bilateral cooperation programme.

3. This program is offered to engineers in charge of “Water Distribution and Service” of operation and maintenance of urban water supply system in counterpart organizations and their related organizations of Japan’s bilateral cooperation programme.

4. The applying organizations are expected to select those nominees who are engineers and responsible for “Water Distribution and Service” of operation and maintenance of urban water supply and currently engaged in urban water supply field offices, such as water distribution or service division, and have at least five years’ practical experience in that area. The nominees for this course should have sufficient command over spoken and written English; must be in good health (both physically and mentally); must not be a part of military service and be between ages of thirty and forty four years.

5. In addition to above, the following information in respect of the nominated officers may please be mentioned while furnishing the nomination:-

- a) Whether attended any foreign training programme in the past? If so, the duration/detail thereof;
- b) Whether cleared from vigilance angle;
- c) Age;
- d) Whether working in North East State/J&K;
- e) A brief in 50-100 words justifying the nomination.

6. The course covers the cost of a round-trip air ticket between international airport designated by JICA and Japan; travel insurance from the time of arrival in Japan to departure from Japan; allowances for (accommodation, living expenses, outfit and shipping); expenses for JICA study tours and free medical care for participants who may fall ill after reaching Japan (costs relating to pre-existing illness, pregnancy, or dental treatment are not included).

...2/-

7. It is therefore requested that the nomination of suitable candidates may please be forwarded (**in duplicate**) in JICA's prescribed form (available in **persmin.nic.in→DOPT→Training Wing→Circular→JICA**) to this Department duly authenticated by the HOD of the concerned department in accordance with the eligibility criteria.

8. The applications should reach this Department through the Administrative Ministry/State Government not later than **May 26, 2014**. Nominations received after the prescribed date will not be considered. The details of the programme may be drawn from Ministry of Personnel, Public Grievances and Pensions' website (**persmin.nic.in**).



**(N.K. Wadhwa)**

Under Secretary to the Government of India

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**Copy to:**

- a) The Secretary, Ministry of Water Resources, Shram Shakti Bhavan, New Delhi,
- b) The Secretary, Ministry of Urban Development, Nirman Bhavan, New Delhi,
- c) The Chief Secretaries to all the State Governments/Union Territories(with request to circulate the same amongst their related Departments/Organizations),
- d) NIC with request to post the circular along with the JICA's circular on this Department's website.



# GROUP AND REGION-FOCUSED TRAINING

**GENERAL INFORMATION ON  
OPERATION AND MAINTENANCE OF URBAN WATER SUPPLY SYSTEM  
(WATER DISTRIBUTION AND SERVICE) (B)**

**課題別研修「都市上水道維持管理」(給・配水) (B)**

***JFY 2014***

**NO. J1404127 / ID.1480127**

**Course Period in Japan: From July 9<sup>th</sup>, 2014 to August 13<sup>th</sup>, 2014**

This information pertains to one of the Group and Region-Focused Training 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**

It has been recognized that more than 1.1 billion people around the world have no access to safe drinking water.

Millennium Development Goals (MDGs) target to halve, by 2015, the proportion of the people who are unable to reach or to afford safe drinking water. In March 2003, Japan hosted the Third World Water Forum. Participants identified water governance, capacity building, financing and participation as some of the major issues for the water crisis. In other words, they recognized the need for an integrated approach.

Hiroshima City has accumulated various experiences in operation and maintenance of urban water supply system, through the trial and error in the modernization and recovery process after WWII. The accumulated technique and knowledge shall contribute to secure the safe and sustainable water supply in developing countries.

## **For what?**

**This program aims to contribute to the improvement of the techniques and knowledge of counterpart organizations and their related organizations of Japan's bilateral cooperation program.**

## **For whom?**

Engineers in charge of "Water Distribution and Service" of operation and maintenance of urban water supply system **in counterpart organizations and their related organizations of Japan's bilateral cooperation program**

## **How?**

- (1) Participating organizations are required to have discussions about the issues on "Water Distribution and Service" of operation and maintenance of urban water supply system in the organizations, and give the participants clear mission or assignment what to acquire in the program, before their departure.
- (2) Participants will learn and observe the urban water supply system, specifically on "Water Distribution and Service" in Hiroshima City, and analyze what can be applied to their organization in order to improve the issues of the organization.
- (3) Participating organizations are required to establish a program by their own initiative to disseminate the technique and knowledge brought back by the participants.

## II. Description

1. **Title (J-No.): Operation and Maintenance of Urban Water Supply System (Water Distribution and Service) (B)(J1404127)**

2. **Course Period in JAPAN:** July 9<sup>th</sup> to August 13<sup>th</sup>, 2014

3. **Target Regions or Countries**

Democratic Republic of the Congo, Sudan, Malawi, Albania, Nicaragua, Honduras, Marshall Islands, Timor-Leste, Afghanistan, India

4. **Eligible / Target Organization**

This program is designated for counterpart organizations or their related organizations of Japan's bilateral cooperation program.

5. **Course Capacity (Upper limit of Participants)**

10 participants

6. **Language to be used in this program:** English

7. **Course Objective:**

Applicable knowledge and technique of Japan in the field of Water Distribution and Service of the participating organization will be shared among engineers.

8. **Overall Goal:**

Capacity for "Water Distribution and Service" of operation and maintenance of urban water supply system in counterpart organizations or their related organizations of Japan's bilateral cooperation program will be improved.

9. **Expected Module Output and Contents:**

This program consists of the following components. Details on each component are given below (The contents may be changed):

| <b>(1) Preliminary Phase in a participant's home country</b><br>(June 9, 2014 to July 8, 2014)<br><i>Participating organizations make required preparation for the program in their country.</i> |  |
|--|--|
| Expected Module Output   | Activities   |
| Module 1<br>Participants will be able to summarize the present status, issues and problems concerning their  | 1.1 Submission of the Presentation Materials of Job / Country Report (Microsoft Power Point) on or before your arrival at Japan<br><br>Note: The original Job / Country Report (Inception Report and Questionnaire as attached in this General Information) should be submitted when you apply the course. |

|  |  |
|--|--|
| respective countries in Country Reports. |  |
|--|--|

|  |
|--|
| <p><b>(2) Core Phase in Japan</b><br/> (July 9, 2014 to August 13, 2014)<br/> <i>Participants dispatched by the organizations attend the program implemented in Japan.</i></p> |
|--|

| Expected Module Output  | Subjects/Topics  | Contents of the Lectures / Site-visits /Activities<br>※Please refer to <Training schedule> (tentative) |
|---|--|--|
| 【 Follow Up of Module 1】  | <ul style="list-style-type: none"> <li>▪ Preparation of Job and Country Report Presentation</li> <li>▪ Sharing situation or problem in the water treatment, operation and maintenance among relevant parties and setting of participant's objectives of the training course</li> </ul> <p>Note: After participants' arrival in Japan, Job and Country Report Presentation will be held in order to examine their achievements of Module 1.</p> | Job / Country Report Presentation  |
| Module2<br>Participants will be able to understand General Theory of Water Supply Utilities of Japan.   | 2.1 Water Treatment (introduction and visit to water treatment plant), Operation and Maintenance ([pipeline] outline, leakage detection and repair [distribution equipment]: outline, water meter)   | 2.1.1 Lecture/Observation  |
|   | 2.2 Review of the Learning   | 2.1.2 Discussion   |
| Module3<br>Participants will be able to acquire the knowledge and skills of maintenance and water quality management of Water Purification Plant. | 3.1 Operation and maintenance of Pipeline (leakage detection plan, piping and branching etc.)  | 3.1.1Lecture/Practice/Observation  |

|  |  |   |
|--|--|---|
| <p>Module 4</p> <p>Participants will be able to acquire the knowledge and skills of development of distribution network and maintenance.</p>   | <p>4.1 Water distribution and service equipment hands-on training (repair, tapping, water suspension, disassembly of small pipe, etc.)</p> | <p>4.1.1 Lecture/Practice/Observation</p>                   |
| <p>Module 5</p> <p>Participants will be able to draw up an Action Plan aimed at dissemination of the knowledge and technique by utilizing the outcomes acquired through the Core Phase Program in Japan.</p> | <p>5.1 Development of Action Plan / Presentation of Action Plan</p>  | <p>5.1.1 Discussion of the Action Plan and Presentation</p> |

**(3) Finalization Phase in a participant's home country**

(August 14, 2014 to November 28, 2014)

*Participating organizations produce final outputs by making use of results brought back by participants. This phase marks the end of the Program.*

*Participating organizations are required to submit progress report by November 2014.*

| Expected Module Output   | Activities  |
|--|---|
| <p>Module 6</p> <p>The Action Plan (draft) drawn up through the Program in Japan will be shared in the Participant's organization.</p> | <p>Sharing and implementing of the Action Plan in the participant's organization.</p>   |
|  | <p>Submission of the Progress Report to JICA Local Office using the format to be provided during the Core Phase in Japan.</p> |

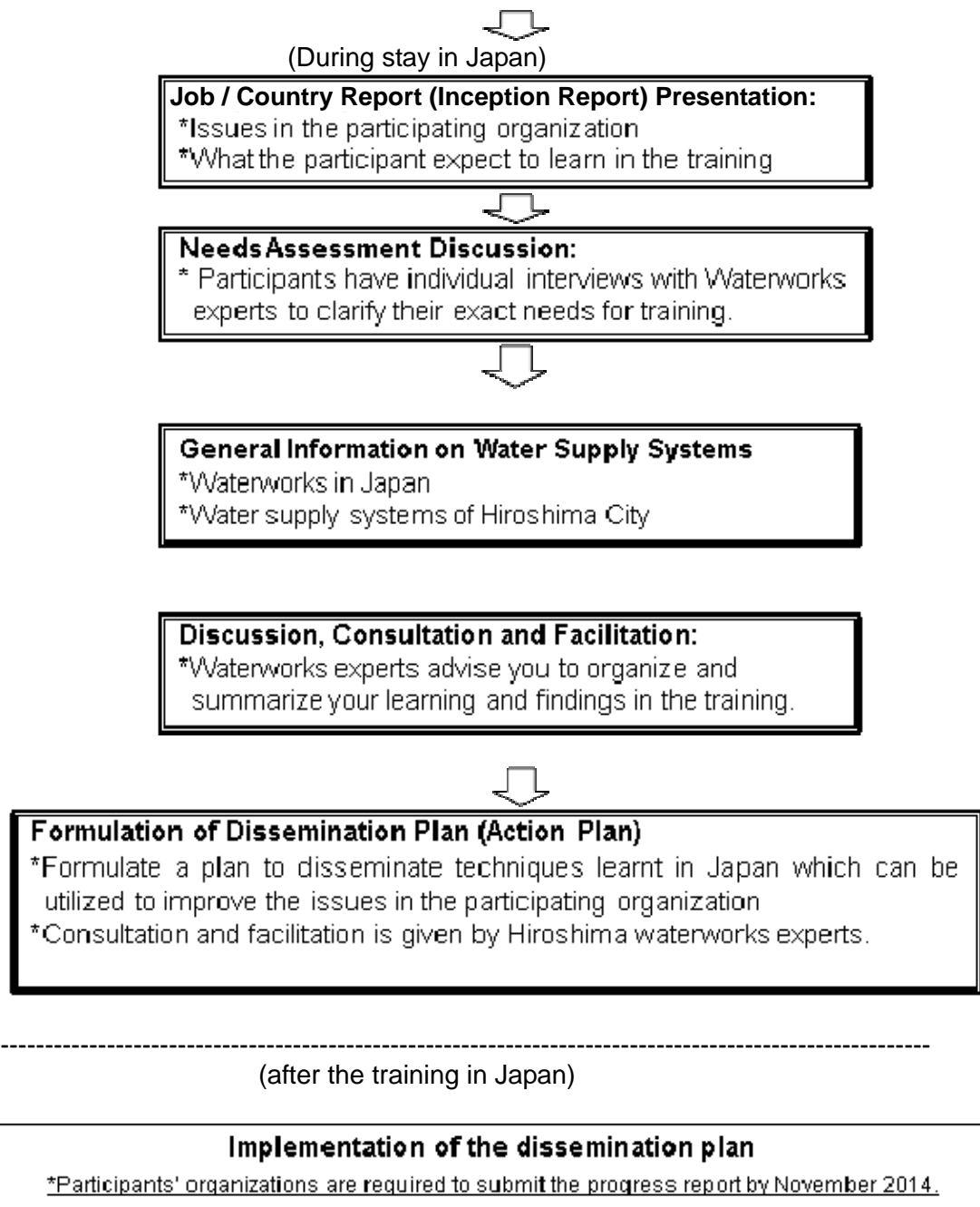
**10. Course Structure:**

(Before coming to Japan)

**Issue analysis in applying organizations**

Applying organizations are required to analyze issues in their organizations and make clear objectives to participate in the training.

\*The organizations are also required to make a commitment to formulate and implement the dissemination program after completion of the training program in Japan.



## 11. Structure of the program

Topic outline (subject to minor changes)

### ➤ 1<sup>st</sup> week

- (1) Opening ceremony, General Orientation

### ➤ 2<sup>nd</sup> week to 3<sup>rd</sup> week

- (1) Job / Country Report (Inception Report) Presentation
- (2) General Information on Water Supply Systems in Japan and in Hiroshima City.
- (3) Procedures of Waterworks Plan Formulation
- (4) Distribution Facilities Planning



- (5) Hydraulic Calculation
- (6) Maintenance of Water Treatment Plant
- (7) Water Quality Control Management
- (8) Outline and Current Condition of Water Supply Equipment
- (9) Management of Information on Facilities
- (10) Leakage Prevention Training

➤ **4<sup>th</sup> week**

- (1) Study Trip to Tokyo: Tokyo Water Purification Plant & Leakage Prevention Training at Fuji Tecom Co., Ltd
- (2) Outline and Current Condition of Water Supply Equipment
- (3) Repairing Burst Distribution and Service Pipes

➤ **5<sup>th</sup> week and 6<sup>th</sup> week**

- (1) Making Action Plan presentation
- (2) Action Plan presentation
- (3) Evaluation session with JICA staff and Waterworks Bureau The City of Hiroshima's staff
- (4) Closing Ceremony

**12 . Dissemination Plan:** Training participants are required to formulate "Dissemination Plan" (Action Plan) in the training in Japan and to implement the plan after their return by following manners as one of the outputs of the training program.

**(1) Objective of the plan:** To improve the technical issues of participating organizations by disseminated knowledge or information learnt in the training program.

**(2) Target of the plan:** Engineers or technicians in the participating organization or its related organizations.

**(3) Contents to be covered in the plan:**

- a) Related technical issues in the participating organization
- b) Knowledge or information applicable to improve the issues
- c) Relationship between the knowledge or information and the issues of the participating organization. (How it can be applied.)
- d) Goal to be achieved by the dissemination program
- e) Target of the dissemination program
- f) Dissemination method
- g) Evaluation method of achievement of the goal

**(4) Main practitioner of the plan:** Participants

**(5) Role of participating organization:**

- a) To select candidates who can plan and implement the plan by their own initiative.
- b) To support dissemination program

**\* In case the final report is not submitted from any organization by 28<sup>th</sup> November, 2014, JICA may suspend acceptance of participants from that organization in the future.**

### ***III. Conditions and Procedures for Application***

#### **1. Expectations from the Participating Organizations:**

- (1) This program is designed primarily for organizations that intend to address

specific issues or problems identified in their operation. Participating organizations are expected to use the project for those specific purposes.

- (2) This program is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the project to meet specific requirements of applying organizations and effectively facilitate them toward solutions for the issues and problems.

## **2. Nominee Qualifications:**

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

### **(1) Essential Qualifications**

- 1) To be engineers responsible for “Water Distribution and Service” of operation and maintenance of urban water supply.
- 2) To be currently engaged in urban water supply field offices, such as water distribution or service division, and have at least five (5) years’ practical experience in that area.
- 3) To have a strong commitment and capacity to disseminate acquired techniques and knowledge after return.
- 4) Language: have a competent command of spoken and written English which is equal to TOEFL CBT 250 or more. (This training program includes active participation in discussions, action plan (interim report) development, thus requires high competence of English ability. (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.
- 6) Must not be serving any form of military service.

### **(2) Recommendable Qualifications**

Age: between the ages of thirty (30) and fifty-four (44) years

## **3. Required Documents for Application**

- (1) **Application Form:** The Application Form is available at **the JICA office (or the Embassy of Japan).**

\*Pregnancy

Pregnant participants are strictly requested to attach the following documents in

order to minimize the risk for their health.

1. letter of the participant's consent to bear economic and physical risks
2. letter of consent from the participant's supervisor
3. doctor's letter with permission of her training participation.

Please ask JICA Staff for the details.

**(2) Photocopy of passport:** to be submitted with the application form, if you possess your passport which you will carry when entering Japan for this program. If not, you are requested to submit its photocopy as soon as you obtain it.

\*Photocopy should include the followings:

Name, Date of birth, Nationality, Sex, Passport number and Expire date.

**(3) Nominee's English Score Sheet:** to be submitted with the application form. If you have any official documentation of English ability. (e.g., TOEFL, TOEIC, IELTS)

**(4) Job/Country Report:** When applying, each applicant is requested to submit his/her Job/Country Report. The Job/Country Report is closely linked with the selection process. Please fill out the format of Inception Report and Questionnaire shown at the ANNEX I and II and submit them with Official Application Form.

#### **4. Procedures for Application and Selection :**

##### **(1) Submission of the Application Documents:**

Closing date for applications: **Please inquire to the JICA office (or the Embassy of Japan).**

(After receiving applications, the JICA office (or the Embassy of Japan) will send them to **the JICA Center in JAPAN** by **May 30, 2014**)

##### **(2) Selection:**

After receiving the documents through proper channels from your government, the JICA office (or the embassy of Japan) will conduct screenings, and then forward the documents to the JICA Center in Japan. Selection will be made by the JICA Center in consultation with concerned organizations in Japan. *The applying organization with the best intention to utilize the opportunity of this program will be highly valued in the selection.*

### **(3) Notice of Acceptance**

Notification of results will be made by the JICA office (or the Embassy of Japan) **not later than June 9, 2014**.

### **5. Document(s) to be submitted by accepted candidates:**

(1) Presentation materials for Job/Country Report (Please make and submit the presentation materials with Microsoft PowerPoint based on your Job Report and Country Report which you are subjected to submit when you apply the course.)

※ You will have to make a presentation on your Job/Country Report at the beginning of the training. The presentation time is 20 minutes, including interpretation, for each participant. Therefore, the net time for your presentation is shorter than 20 minutes.

### **6. Conditions for Attendance:**

(1) to strictly adhere to the program schedule.

(2) not to change the program topics.

(3) not to extend the period of stay in Japan.

(4) not to be accompanied by family members during the program.

(5) to return to home countries at the end of the program in accordance with the travel schedule designated by JICA.

(6) to refrain from engaging in any political activities, or any form of employment for profit or gain.

(7) 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.

(8) to observe the rules and regulations of the accommodation and not to change the accommodation designated by JICA.

## IV. Administrative Arrangements

### 1. Organizer:

**(1) Name:** JICA Chugoku International Center (CIC)

※"Chugoku" is the name of the region consisting of five (5) prefectures in western part of Japan's main island. JICA Chugoku is in charge of implementing JICA's projects/programs in the region.

**(2) Contact:** Ms. NAGAO Reiko ([cicttp@jica.go.jp](mailto:cicttp@jica.go.jp))

### 2. Implementing Partner:

**(1) Name:** Waterworks Bureau The City of Hiroshima

**(2) URL:** <http://www.water.city.hiroshima.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:** Coverage is from time of arrival up to departure in Japan. Thus traveling time outside Japan will not be covered.

### 4. Accommodation in Japan:

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

JICA Chugoku International Center (JICA Chugoku)

Address: 3-3-1 Kagamiyama, Higashihiroshima, Hiroshima Prefecture  
739-0046 Japan

TEL: 81-82-421-6310 FAX: 81-82-420-8082

(where "81" is the country code for Japan, and "3" is the local area code)

If there is no vacancy at JICA Chugoku, JICA will arrange alternative accommodations for the participants. Please refer to facility guide of CIC at its URL,

### 5. Expenses:

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

**(1)** Allowances for accommodation, meals, 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 “III. ALLOWANCES” of the brochure for participants titled “KENSU-IN GUIDE BOOK,” which will be given before departure for Japan.

**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.

## **ANNEX I**

Operation and Maintenance of Urban Water Supply System  
(Water Distribution and Service)

### **Inception Report**

Name : \_\_\_\_\_

Country : \_\_\_\_\_

\* In the core phase in Japan, participants shall make a presentation on the Inception Report. (Country Report). Participants are requested to bring PowerPoint(TM) slides data, including pictures, photos, maps etc. for efficient presentation.

1. General information on the city/town under your jurisdiction.  
(geographical features, total population, social and economic status, climate, etc.)
  
2. Name of organization : (organization chart, number of employees, etc)
  
3. Please describe the relationship of your organization with Japan's bilateral cooperation program. (ex: Counterpart organization of Technical Cooperation Program titled "xxxxxx".)  
\*This training program targets on counterpart organizations or their related organizations of Japan's bilateral cooperation program only.
  
4. Your present position
  
5. Technical issues your organization is confronted and training subjects your organization and/or your duty requires you to learn in the training course in particular.(Please discuss with your organization and fill the chart on the next page based on the consensus reached through the discussion.)  
\*You are advised not to focus on financial issues, but to technical issues, since this training program shall not contribute to improve financial issues.

|   | Technical Issues | Objective Data of the issues | Expectation for the training |
|---|------------------|------------------------------|------------------------------|
| *organization   |                  |                              |                              |
| *water resource<br>*water pollution<br>*water quality control |                  |                              |                              |
| *water treatment facilities                                   |                  |                              |                              |
| *mechanical and electrical facilities<br>*measuring equipment |                  |                              |                              |
| *pipelines  |                  |                              |                              |



**ANNEX II**  
**Operation and Maintenance of Urban Water Supply System**  
**Questionnaire**

On current situation of water supply system in the town or city under your jurisdiction.

(1) Information on the organization

|   |   |   |
|---|---|---|
| A | Year of water supply inauguration   |   |
| B | Served population   |   |
| C | Water supply capacity   | m <sup>3</sup> /day   |
| D | Supply type   | <input type="checkbox"/> 1.gravity system<br><input type="checkbox"/> 2.pump system   |
| E | Management Authority  | <input type="checkbox"/> 1.national government<br><input type="checkbox"/> 2.local government<br><input type="checkbox"/> 3.public corporation<br><input type="checkbox"/> 4.private enterprise<br><input type="checkbox"/> 5.other(                      )       |
| F | Accounting system   | <input type="checkbox"/> 1.government accounting<br><input type="checkbox"/> 2.enterprise accounting<br>(independent)   |
| G | Main items of annual income and expenditure and their percentage                    | income<br>1.    (        %)<br>2.    (        %)<br>expenditure<br>1.    (        %)<br>2.    (        %) |
| H | Main source of finance for water resource development and facility maintenance cost | 1.<br>2.  |
| I | Water tariff  | (Please attach the table of water tariffs.)   |
| J | Outline of metering and water bill collection                                       |   |

(2) Water Resource Development

|   |                                 |   |
|---|---------------------------------|---|
| A | Water resource                  | <input type="checkbox"/> 1.surface water (river/lake/spring)<br><input type="checkbox"/> 2.ground water (shallow well/deep well)<br><input type="checkbox"/> 3.dam<br><input type="checkbox"/> 4.seawater desalination<br><input type="checkbox"/> 5.other (                      ) |
| B | Water resource development body | <input type="checkbox"/> 1.national government<br><input type="checkbox"/> 2.local government<br><input type="checkbox"/> 3.public corporation  |

|   |  |  |
|---|--|--|
|   |  | <input type="checkbox"/> 4.private enterprise<br><input type="checkbox"/> 5.other( ) |
| C | State subsidies for water resource development | <input type="checkbox"/> 1.yes <input type="checkbox"/> 2.no                         |

(3) Pollution of water resource and water quality control measures

|   |                                 |  |
|---|---------------------------------|--|
| A | Water quality-related problems  | 1.<br>2.<br>3.   |
| B | Main sources of water pollution | <input type="checkbox"/> 1.household wastewater<br><input type="checkbox"/> 2.industrial wastewater<br><input type="checkbox"/> 3.livestock wastewater<br><input type="checkbox"/> 4.other ( )   |
| C | Water quality control measure   | <input type="checkbox"/> 1.introduction of sewage system<br><input type="checkbox"/> 2.separate wastewater treatment<br><input type="checkbox"/> 3.wastewater quality regulations<br><input type="checkbox"/> 4.protection of water resource<br>(such as prohibiting entry or waste discharge to water resource areas)<br><input type="checkbox"/> 5.other ( ) |

(4) Intake Facilities

|   |                   |   |
|---|-------------------|---|
| A | Intake volume     | <input type="checkbox"/> 1.surface water      m <sup>3</sup> /day<br><input type="checkbox"/> 2.ground water      m <sup>3</sup> /day<br><input type="checkbox"/> 3.dam      m <sup>3</sup> /day<br><input type="checkbox"/> 4.other      m <sup>3</sup> /day |
| B | Intake facilities |   |
|   | 1) Intake type    | <input type="checkbox"/> 1.intake tower <input type="checkbox"/> 2.intake weir<br><input type="checkbox"/> 3.intake gate <input type="checkbox"/> 4.pump<br><input type="checkbox"/> 5.other ( )  |
|   | 2) Raw water main | <input type="checkbox"/> 1.intake pipe <input type="checkbox"/> 2.intake conduit<br><input type="checkbox"/> 3.other ( )  |
|   | 3) Grit chamber   | <input type="checkbox"/> 1.exist <input type="checkbox"/> 2.not exist   |

(5) Treatment Facilities

|   |                            |  |
|---|----------------------------|--|
| A | Number of treatment plants |  |
| B | Capacity                   | m <sup>3</sup> /day  |
| C | Sedimentation type         | <input type="checkbox"/> 1.high rate coagulo-sedimentation<br><input type="checkbox"/> 2.horizontal flow type sedimentation<br><input type="checkbox"/> 3.slant-board type sedimentation |
| D | Filtration type            | <input type="checkbox"/> 1.rapid sand filtration<br>(gravity system/pressure system)<br><input type="checkbox"/> 2.slow sand filtration  |
| E | Filter media               | <input type="checkbox"/> 1.sand (      cm thick)   |

|   |                      |   |
|---|----------------------|---|
|   |                      | <input type="checkbox"/> 2. gravel (          cm thick)<br><input type="checkbox"/> 3. anthracite (          cm thick)<br><input type="checkbox"/> 4. other (          cm thick)  |
| G | Coagulant            | <input type="checkbox"/> 1. aluminum sulfate (solid/liquid)<br><input type="checkbox"/> 2. poly aluminum chloride<br><input type="checkbox"/> 3. other (                                  )   |
| H | Alkali               | <input type="checkbox"/> 1. caustic soda<br><input type="checkbox"/> 2. soda ash<br><input type="checkbox"/> 3. slaked lime   |
| I | Disinfectant         | <input type="checkbox"/> 1. liquid chlorine<br><input type="checkbox"/> 2. sodium hypochlorite<br><input type="checkbox"/> 3. chlorinated lime  |
| J | Wastewater treatment | <input type="checkbox"/> 1. sun drying bed<br><input type="checkbox"/> 2. dehydrator<br><input type="checkbox"/> 3. heat desiccation<br><input type="checkbox"/> 4. untreated<br><input type="checkbox"/> 5. other (                                  ) |

(6) Water Quality

A. Water Quality Data

raw water

finished water

1) Turbidity

(NTU or Kaolin turbidity unit)

\_\_\_\_\_

\_\_\_\_\_

2) Color (Pt-Co unit or others)

\_\_\_\_\_

\_\_\_\_\_

3) pH

\_\_\_\_\_

\_\_\_\_\_

4) Iron (mg/l)

\_\_\_\_\_

\_\_\_\_\_

5) Manganese (mg/l)

\_\_\_\_\_

\_\_\_\_\_

6) Hardness (mg/l)

\_\_\_\_\_

\_\_\_\_\_

7) Ammonia (mg/l)

\_\_\_\_\_

\_\_\_\_\_

8) Nitrite (mg/l)

\_\_\_\_\_

\_\_\_\_\_

9) KMnO<sub>4</sub> consumption (mg/l)

\_\_\_\_\_

\_\_\_\_\_

10) BOD (mg/l)

\_\_\_\_\_

\_\_\_\_\_

B. Water Quality Monitoring System

|    |  |  |
|----|--|--|
| 1) | Water quality standards  | <input type="checkbox"/> 1. yes (set by                                  ) <input type="checkbox"/> 2. no  |
| 2) | Laboratory staff and facilities for monitoring                 | <input type="checkbox"/> 1. own facilities (number of staff                                  )<br><input type="checkbox"/> 2. subcontracted to other organizations |
| 3) | Monitoring points and measuring frequency in treatment process | <input type="checkbox"/> 1. raw water (          times/day, week, month)<br><input type="checkbox"/> 2. settled water (          times/day, week,                  |

|    |  |  |
|----|--|--|
|    |  | month)<br><input type="checkbox"/> 3.filtered water<br>(times/day, week, month)<br><input type="checkbox"/> 4.finished water<br>(times/day, week, month) |
| 4) | Monitoring stations and frequency on tap water | <input type="checkbox"/> 1.number of stations ( )<br><input type="checkbox"/> 2.measuring frequency<br>(times/day, week, month)                          |
| 5) | Major laboratory equipment                     | 1.<br>2.   |

(7) Maintenance of Pipelines

A. Length of pipelines by diameter

1) raw water pipelines

Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km

2) transmission pipelines

Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km

3) distribution pipelines

Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km  
Ø mm \_\_\_\_\_ km

B. Length of pipelines by material

1) grey cast iron pipe \_\_\_\_\_ km  
2) ductile iron pipe \_\_\_\_\_ km  
3) galvanized iron pipe \_\_\_\_\_ km  
4) steel pipe \_\_\_\_\_ km  
5) asbestos cement pipe \_\_\_\_\_ km  
6) concrete pipe \_\_\_\_\_ km  
7) PVC pipe \_\_\_\_\_ km  
8) other \_\_\_\_\_ km

|    |                         |   |
|----|-------------------------|---|
| C. | Type of internal lining |   |
|    | 1) grey cast iron pipe  | <input type="checkbox"/> 1.Cement <input type="checkbox"/> 2.Epoxy resin<br><input type="checkbox"/> 3.Others <input type="checkbox"/> 4.None |

|    |   |  |   |
|----|---|--|---|
|    | 2) ductile iron pipe                    | <input type="checkbox"/> 1.Cement<br><input type="checkbox"/> 3.Others | <input type="checkbox"/> 2.Epoxy resin<br><input type="checkbox"/> 4.None |
|    | 3) galvanized iron pipe                 | <input type="checkbox"/> 1.Cement<br><input type="checkbox"/> 3.Others | <input type="checkbox"/> 2.Epoxy resin<br><input type="checkbox"/> 4.None |
|    | 4) steel pipe                           | <input type="checkbox"/> 1.Cement<br><input type="checkbox"/> 3.Others | <input type="checkbox"/> 2.Epoxy resin<br><input type="checkbox"/> 4.None |
| D. | Leak rate                               | %  |   |
| E. | Leakage control measures                | <input type="checkbox"/> 1.implemented                                 | <input type="checkbox"/> 2.no   |
| F. | Use of split repair sleeves for leakage | <input type="checkbox"/> 1.yes   | <input type="checkbox"/> 2.no   |

(9) Maintenance of Service Installations

|    |   |   |  |
|----|---|---|--|
| A. | Service method  | <input type="checkbox"/> 1.direct connection<br><input type="checkbox"/> 2.tank system<br><input type="checkbox"/> 3.combination of direct connection and tank system   |  |
| B. | Service type  | <input type="checkbox"/> 1.individual connection<br><input type="checkbox"/> 2.common tap system  |  |
| C. | Service pipe material                                     | <input type="checkbox"/> 1.lead<br><input type="checkbox"/> 2.copper<br><input type="checkbox"/> 3.steel pipe<br><input type="checkbox"/> galvanized steel pipe<br><input type="checkbox"/> lined steel pipe<br><input type="checkbox"/> stainless steel pipe<br><input type="checkbox"/> 4.iron pipe<br><input type="checkbox"/> gray cast iron pipe<br><input type="checkbox"/> ductile iron pipe<br><input type="checkbox"/> 5.PVC pipe<br><input type="checkbox"/> 6.polyethylene pipe<br><input type="checkbox"/> 7.asbestos cement pipe<br><input type="checkbox"/> 8.other ( ) |  |
| D. | Service pipe diameter                                     | <input type="checkbox"/> 13mm <input type="checkbox"/> 20mm <input type="checkbox"/> 25mm<br><input type="checkbox"/> 30mm <input type="checkbox"/> 40mm <input type="checkbox"/> 50mm<br><input type="checkbox"/> 75mm <input type="checkbox"/> 100mm <input type="checkbox"/> 125mm<br><input type="checkbox"/> 150mm <input type="checkbox"/> 200mm <input type="checkbox"/> 250mm<br><input type="checkbox"/> 300mm   |  |
| E. | Connection methods of service lines to distribution mains | <input type="checkbox"/> 1.direct tapping<br><input type="checkbox"/> 2.corporation stop with saddle<br><input type="checkbox"/> 3.plit tapping sleeve<br><input type="checkbox"/> 4.other ( )  |  |
| F. | Storage of drawings                                       | <input type="checkbox"/> 1.yes ( <input type="checkbox"/> paper <input type="checkbox"/> microfilm<br><input type="checkbox"/> electronic data)<br><input type="checkbox"/> 2.no  |  |
| G. | Water meters  | <input type="checkbox"/> 1.yes (            %) <input type="checkbox"/> 2.no  |  |

|    |                                      |  |
|----|--------------------------------------|--|
| H. | Meter type                           | <input type="checkbox"/> 1.inferential<br><input type="checkbox"/> 2.analog <input type="checkbox"/> 3.digital |
| I. | Repair of service pipe leaks         |  |
|    | 1) Please list main causes of leaks. | 1.<br>2.   |
|    | 2) Method of repair                  | <input type="checkbox"/> 1.by direct staff <input type="checkbox"/> 2.by subcontractors                        |

**Note: Applications without a duly completed Inception Report and Questionnaire shall not be accepted.**

## **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 and 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***

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