【Online】
Knowledge Co-Creation Program
(Group & Region Focus)

GENERAL INFORMATION ON

OPERATION AND MAINTENANCE OF URBAN WATER SUPPLY SYSTEM (WATER DISTRIBUTION AND SERVICE) (A)
課題別研修「都市上水道維持管理（給・配水）（A）」
JFY 2021
Course No.: 201902281J002 & 202003260J001
Online Course Period : From January 17, 2022 to February 18, 2022

This information pertains to one of the JICA Knowledge Co-Creation Programs (Group &Region Focus) of the Japan International Cooperation Agency (JICA) implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

JICA Knowledge Co-Creation Program (KCCP)
The Japanese Cabinet released the Development Cooperation Charter in February 2015, which stated, *"In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with developing countries in which both sides learn from each other and grow and develop together."* JICA believes that this 'Knowledge Co-Creation Program' will serve as a foundation of mutual learning process.

I. Concept

Background

Safe accessible water is indispensable for human lives, improving health, reducing poverty, social well-being and sustainable development. Yet more than 1.8 billion people still do not have access to safe water, which leads to death of millions of people every year. Particularly rapid urbanization in many developing countries is increasing pressure on public institutions to provide adequate supplies of clean water to populations.

In its endeavor to reconstruct and modernize after the World War II, Japan has gone through the process of trial and error in developing urban water supply system. Such experiences have been accumulated as lessons learned.

For What

This program aims to support the organizations in their attempt to develop the urban water supply system. Participating organizations are expected to fully utilize the knowledge, skills and a solution plan explored and acquired by their leading staff to participate in this course.

For Whom

This program is designed for field engineers in urban drinking water supply management currently engaged in water distribution and service.

How

(1) Participating organizations are requested to prepare an Inception Report to identify facing issues in urban water supply system, with special focus on water distribution and service. Participants are expected to recognize clear missions or assignments of what to acquire from the program.

(2) Through the lectures and observation of the urban water supply system of Osaka City , participants are expected to formulate the plan in order to address the issues in their organization.

(3) Participating organizations are required to establish a program by their own initiatives to disseminate techniques and knowledge brought back by participants.

Sustainable Development Goals (SDGs)

The 2030 Agenda for Sustainable Development (the 2030 Agenda) is a set of international development goals from 2016 to 2030, which was adopted by the UN Sustainable Development Summit held in September 2015. As a development cooperation agency, JICA is committed to achieving the SDGs. This program is linked to and will contribute to the realization of following goals under Sustainable Development Goals (SDGs).

Goal 1, by 2020, build the resilience of the poor and these in vulnerable, situations and reduce their exposure and vulnerability to climate related extreme events and other economic social and environmental shocks and disasters.

Goal 5, enhance the use of enabling technology, in particular information and communication technology, to promote the empowerment of women.

Goal 6, ensuring access to water and sanitation for all, with "achieving universal and equitable access to safe and affordable drinking water for all by 2030" as one of the targets.

II. Description

1. Title (Course No.): Operation and Maintenance of Urban Water Supply System (Water Distribution and Service) (A) (201902281J002 & 202003260J001)

2. Course Period
January 17, 2022 to February 18, 2022

3. Target Regions or Countries:
201902281J002 : Benin, Brazil, Cambodia, Pakistan, Panama, Senegal, Sudan and Timor-Leste
202003260J001 : Bangladesh, Benin, Cambodia, Egypt, Pakistan, Philippines, Sudan, Togo and Zimbabwe

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) :
201902281J002 : 8 participants
202003260J001 : 10 participants Total 18 participants

6. Language to be used in this program : English (Including Japanese with English interpretation.)

7. Program Objective:
(1) Experts from the Waterworks Bureau on the Japanese side will discuss with the participants and make technical proposals for solving problems faced by the participants' organization.
(2) To develop engineers' capacity to take a essential role in the field of water distribution and service, by sharing applicable knowledge and skills gained in the program among the engineers and technicians in their countries.

8. Overall Goal:
Capacity of urban water supply maintenance and management in participating countries and regions is improved.

9. Expected Module Output and Contents:

This program consists of the following components. Details on each component are given below:

(1) Preliminary Phase in a participant's home country (Oct.2021-Jan.2022)
Participating organizations make required preparation for the Program in the respective country.

Output	Contents	Method
1) Clarify issues particularly in terms of **Goal 6 of SDGs** faced by the participating organizations and identify the learning needs / specific assignment for participants	(1) Preliminary discussion in the organizations	Discussion in the organization
	(2) Participants to recognize clear assignment and tasks for the program.	Discussion in the organization
	(3) Submission of Inception Report	Report preparation
	(4) Submission of Pre-Study Report	Report preparation

(2) Core Phase in Online Program (January 17, 2022 to February 18, 2022)

Output	Contents	Method
2) Participants are able to explain methods of water distribution and service as well as operation and maintenance techniques utilized in Osaka City and other organizations.	(1) Water Treatment (introduction of water treatment plant), Operation and Maintenance (leakage detection and repair)	E-learning
	(2) Needs assessment discussion (participants have interview with Osaka City experts to clarify the exact needs for the program)	Discussion by Cornerstone
3) Participants are able to explain tips on administration of water supply business, and apply practical knowledge and techniques related to water distribution and service	(1) Operation and maintenance of Pipeline (leakage detection plan, piping and branching, etc.)	E-learning
	(2)Consultation for finding out the solution and/or measures to improve the current issues faced by participant's organization	Discussion by Cornerstone
4) Participants are able to find out measures to improve and/or solve current issues and problems .	(1) Consultation	Discussion by Cornerstone

＜Tentative Program Schedule＞

Date (2022)	program	Method
1st week Jan.17(Mon) ～ Jan.23(Sun)	lecture: ① Outline of Water Supply in Japan ② Outline of Japanese Waterworks Association ③ Outline of Osaka City Waterworks Bureau	On Demand
	Needs Discussion for finding out Issues	Pre-Study Report Q&A by Cornerstone
2nd week Jan.24(Mon) ～ Jan.30(Sun)	lecture: ④ Non-Revenue Water Measures ⑤ Slow Sand Filtration Facility	On Demand
	Needs Discussion for finding out Issues	Pre-Study Report Q&A by Cornerstone
3rd week Jan.31(Mon) ～ Feb.6(Sun)	Lectures: ⑥ Merit & Demerit of Resin Tube etc. ⑦ Water Leakage Detection	On Demand
	Consultation for finding out solution	Q&A by Cornerstone
4th week Feb.7(Mon) ～ Feb.13(Sun)	**Consultation** for finding out solution	Q&A by Cornerstone
5th week Feb.14(Mon) ～ Feb18（Fri）	**Consultation** for finding out solution	Q&A in Cornerstone

※subject to change without prior notice

III. Eligibility and Procedures

1. Expectations to the Applying Organizations

(1) This course is designed primarily for organizations that intend to address specific issues or problems identified in their operation. Applying organizations are expected to utilize the program for those specific purposes.

(2) This course is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the course 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 KCCP 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) Technical Requirements for the Online Course (Computer)

Technology Proficiency:

-Basic computer skills such as, sending/receiving email with attachments, and using a web browser.

-Online course may be delivered using the following services, Web Conferences (Cornerstone), Cloud Storage (GIGAPOD), and YouTube. (Online tutorial and support by JICA will be limited. The ability to be self-directed in learning new technology skills are required.)

Internet Connection:

-High Speed Broadband Connection (at least 2Mbps) from your office or your home.

*Internet access charge incurred for this course shall be borne by you.

Hardware (Minimum Requirement):

- Regular access to a computer, either from your home or from your office.
- Operating System: Windows or Mac OS (Updated version is preferred).
- Processor: Intel Core 2 Duo or higher; 2GHz or higher
- Memory: 4GB of RAM or higher
- Hard Drive Space: 5GB free disk space
- Browser: Google Chrome is preferred browser. (Edge, Firefox, Safari can be used)
- Others: Webcam Microphone, and Audio output Device (Speaker or Headset)

*In some cases, Smartphone (Android OS or Apple iOS) can be used as substitute of PC.

6) Health: must be in good health to participate in the program.

7) Attendance Requirement: Participation in online program and submission of various assignments is an essential requirement for the completion of the course.

(2) Recommendable Qualifications:

1) Age: **between the ages of twenty-five (25) and fifty(50) years**.
2) Gender Consideration: JICA promotes gender equality. **Women** are encouraged to apply for the program

3. Required Documents for Application

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

(2) Photocopy of Passport or ID: Photocopy should include Name, Date of Birth, Nationality, Sex, Passport number and Expire date.

(3) Inception Report of "Water Supply Service Information Sheet": to be submitted with the application form. The contents of the sheet is referred to **ANNEX Ⅰ**

(4) English Score Sheet (Photocopy): to be submitted with the application form, if the nominees have any official English examination scores. (e.g., TOEFL, TOEIC, IELTS)

4. Procedures for Application and Selection

(1) Submission of the Application Documents

Closing date for applications: **Please confirm the local deadline with JICA overseas office (or the Embassy of Japan).**

（All required material must arrive at **JICA Center in Japan by December 10, 2021**）

(2) Selection

Primary screening is conducted at the JICA overseas office (or the embassy of

Japan) after receiving official documents from your government. JICA Center will consult with concerned organizations in Japan in the process of final selection. Applying organizations with the best intentions to utilize the opportunity will be highly valued.

The Government of Japan will examine applicants who belong to the military or other military-related organizations and/or who are enlisted in the military, taking into consideration of their duties, positions in the organization and other relevant information in a comprehensive manner to be consistent with the Development Cooperation Charter of Japan.

(3) Notice of Acceptance

The JICA overseas office (or the Embassy of Japan) will notify the results **not later than December 20, 2021.**

5. Document to be submitted by accepted participants:

Pre-Study Report of "Issues and Problems" to be submitted by **January 6, 2022.**

Only accepted participants are required to prepare Issues and Problems summary (*See **ANNEX II** for further details*).

This Report should be sent by participants directly to JICA at Shigematsu.Sumihiro2@jica.go.jp and Kawasaki.Megumi@jica.go.jp by email.

6. Conditions for Participation

The Participant of KCCP is required

(1) to strictly observe the course schedule

(2) not to change the program topics

(3) not to record or share the online contents without JICA's permission

IV. Administrative Arrangements

1. Organizer (JICA Center in Japan)

(1) Center: JICA Kansai Center (JICA Kansai)

(2) Programme Officer:

Mr. SHIGEMATSU Sumihiro (E-mail: Shigematsu.Sumihiro2@jica.go.jp)

Ms. KAWASAKI Megumi (E-mail: Kawasaki.Megumi@jica.go.jp)

2. Implementing Partners:

(1) Name: Osaka Municipal Waterworks Bureau

URL: http://www.city.osaka.lg.jp/contents/wdu030/english/

(2) Name: Osaka Water General Service Co., Ltd. (affiliated with Osaka Municipal Waterworks Bureau)

URL: https://www.owgs.co.jp/english/

(3) Remark:

The city of Osaka is situated at the heart of the Japanese archipelago. It has been developed over the centuries as a center of Japanese political and economic life. The city's water supply system became only the fourth modern supply system in the country when it was inaugurated in November 1895. Numerous expansion programs in line with the growth of the city's area and population have since brought the system's supply capacity up to its current daily level of 2.43 million m^3. The system's organizational structure includes a head office, branch offices (customer service centers, water rate collection centers, pipe laying, maintenance units, etc.), water treatment works, and engineering offices (for maintenance and new construction projects), giving a total employee figure of approximately 1,600.

YouTube of "Knowledge Co-Creation Program" and "Introduction of JICA Center" are viewable from the link below

Part I: Knowledge Co-Creation Program and Life in Japan	
English ver.	https://www.youtube.com/watch?v=SLurfKugrEw
Spanish ver.	https://www.youtube.com/watch?v=m7l-WlQSDjI
Part II: Introduction of JICA Centers in Japan	
JICA Kansai	https://www.jica.go.jp/kansai/english/office/index.html

V. Other Information

1. Participants who have successfully completed the program will be awarded a certificate by JICA.

ANNEX I : *Inception Report*

※ Please submit this report along with the application form.
※ Please submit in the specified Excel file sent separately.
※ Please provide information about where your organization has jurisdiction like district/city/country.

Water Supply Service Information Sheet

1.Personal Information

(1) Your Name	
(2) Email Address	
(3) Country	
(4) Date of Birth	
(5) Sex	
(6) Religion	
(7) Working experience in JICA projects (Have you ever related with any JICA project/expert? If yes, please describe the name of project(s) and/or expert. If not, please put "None".)	

(8) Area of Interest

☐ NRW management	☐ Asset management	☐ Water distribution management
☐ Tariff system	☐ Maping system	☐ Human resources development
☐ Customer service	☐ Plumbing work	☐ Planning&design of water supply systems
☐ Water treatment	☐ Inspection&certificaton	☐ Business administration of water utilities
☐ Water resource development		
☐ Others: Please specify	(_____)	

2. Organization Profile and Job Description

Organization Profile

(1) Name of the organization	
(2) Mission of the organization	
(3) Type of the organization	
(4) Number of Staff	

Job Description

(1) Department/Division	
(2) Present Position	
(3) Date of employment by the present organization	
(4) Date of assignment to the present position	
(5) Outline of duties: Describe your current duties	
(6) Challenge of your duties: what is current issue/challenge on your own duty?	

3. Water Supply

Target Area

Please choose one area/country, and answear following questions based on the area/country.

- If you're working in Ministry/organizations which are resposible for whole county, please use the data of whole country.
- If you're a municipal/local government officer, please choose specific city/area/region you're responsible for.

(1) Target area (ex. Whole country of Thailand, Bangkok metropolis, City of Chiang Mai, etc.)	

Water Resource and Treatment

(1) Composition of water resource	Surface water		%
	Groundwater		%
	Spring water		%
	Others		%
(2) Maximum daily water supply demand			m^3/day
(3) Average daily water supply demand			m^3/day
(4) Total daily capacity of treatment plants			m^3/day
(5) Main treatment process			
Please specify the treatment process, if you choose "Others"	(	)	

Water Distribution

(1) Total length of distribution pipe		km
(2) Material of distribution pipe		

Water Supply Service

(1) Service Area		km^2
(2) Population in service area		people
(3) Number of connections		connections
(4) Service population		people
(5) Coverage ratio	#DIV/0!	
(6) Supply duration per day		hours/day
(7) Material of service pipe		
(8) Water pressure at tap		MPa (※1 MPa=10 bar)
(9) Customer meter installation ratio		%
(10) Frequency of meter reading		

Non-Revenue Water

(1) Non-Revenue Water Ratio [ ] %

(2) Water Balance Sheet: Please fill the following water balance sheet, if available.

System Input Volume	Authorized Consumption	Revenue Water	Billied Authorized Consumption		%
		Non-Revenue Water	Unbillied Authorized Consumption		%
	Water Losses		Apparent Losses (Commercial Losses)		%
			Real Losses (Physical Losses)		%

Tariff System & Business Administration

(1) Average tariff per unit volume in USD [ ] USD/m^3

※Please calculate average tariff per unit volume assuming monthly household consumption as 20m^3(Calculation method by IWA)

(2) Tariff collection ratio [ ] %

(3) Operating revenue per year [ ] USD/year

(4) Net profit/loss per year [ ] USD/year

(5) Number of staffs per 1,000 connections [#DIV/0!] staffs/1,000 connections

ANNEX II : ***Pre-Study Report of*** **"Issues and** ***Problems"***

Instruction of Pre-study Report (Accepted participants only)

※ Participants are required to formulate a plan in the Online Program and to implement in participating organization after the Online Program.
※ Object of the plan is to improve the technical issues of participating organization by disseminating knowledge and information learnt in the program.
※ Therefore first of all participants are required to clarify issues particularly in terms of **Goal 6 of SDGs**, faced by the participating organizations and identify the learning needs.
※ Sample form of pre-study report will be provided after participant is finalized.
※ The report must be sent directly to JICA at Shigematsu.Sumihiro2@jica.go.jp and Kawasaki.Megumi@jica.go.jp **by January 6, 2022** by email.

For Your Reference

JICA and Capacity Development

Technical cooperation is people-to-people cooperation that supports partner countries in enhancing their comprehensive capacities to address development challenges by their own efforts. Instead of applying Japanese technology per se to partner countries, JICA's technical cooperation provides solutions that best fit their needs by working with people living there. In the process, consideration is given to factors such as their regional characteristics, historical background, and languages. JICA does not limit its technical cooperation to human resources development; it offers multi-tiered assistance that also involves organizational strengthening, policy formulation, and institution building.

Implementation methods of JICA's technical cooperation can be divided into two approaches. One is overseas cooperation by dispatching experts and volunteers in various development sectors to partner countries; the other is domestic cooperation by inviting participants from developing countries to Japan. The latter method is the Knowledge Co-Creation Program, formerly called Training Program, and it is one of the core programs carried out in Japan. By inviting officials from partner countries and with cooperation from domestic partners, the Knowledge Co-Creation Program provides technical knowledge and practical solutions for development issues in participating countries.

The Knowledge Co-Creation Program (Group & Region Focus) has long occupied an important place in JICA operations. About 400 pre-organized course 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 is being customized by the different target organizations to address the specific needs, 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, as the first non-Western nation to become a developed country, built itself into a country that is free, peaceful, prosperous and democratic while preserving its tradition. Japan will serve as one of the best examples for our partner countries to follow in their own development.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated, of course, has been accompanied by countless failures and errors behind the success stories.

Through Japan's progressive adaptation and application of systems, methods and technologies from the West in a way that is suited to its own circumstances, Japan has developed a storehouse of knowledge not found elsewhere from unique systems of organization, administration and personnel management to such social systems as the livelihood improvement approach and governmental organization. It is not easy to apply such experiences to other countries where the circumstances

differ, but the experiences can provide ideas and clues useful when devising measures to solve problems.

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..

Contact Information for Inquires

For enquiries and further information, please contact the JICA overseas office or the Embassy of Japan. Further, address correspondence to:

JICA Kansai Center (JICA Kansai)

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

TEL: +81-78-261-0341/0388 FAX: +81-78-261-0465