



Knowledge Co-Creation Program (Group & Region Focus)

GENERAL INFORMATION ON

OPERATION AND MAINTENANCE OF URBAN WATER SUPPLY
SYSTEM (WATER QUALITY AND PURIFICATION)(B)

課題別研修「都市上水道維持管理(浄水・水質)(B)」

JFY 2018

NO. J1804306 / ID. 1884469

Course Period in Japan: From June 26, 2018 to August 2, 2018

This information pertains to one of the JICA Knowledge Co-Creation Programs (Group & Region Focus) 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.

‘JICA Knowledge Co-Creation (KCC) Program’ as a New Start

In the Development Cooperation Charter which was released from the Japanese Cabinet in February 2015, it is clearly pointed out that *“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.”* We believe that this ‘Knowledge Co-Creation Program’ will serve as a center of mutual learning process.

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. The new Sustainable Development Goals (SDGs) target to ensure “By 2030, achieve universal and equitable access to safe and affordable drinking water for all” with sustainable management.

Kobe 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.

To whom

Engineers currently engaged in “Water Quality and Purification” who belong to urban drinking water supply management organizations and who have more than 5 years of working experience in the said field, as well as holding the leadership position to give technical instructions to other personnel.

How

- (1) Participating organizations are required to have discussions about the issues on “Water Quality and Purification” 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 for Japan.
- (2) Participants will learn and observe the urban water supply system, specifically on “Water Quality and Purification” in Kobe City, and analyze what can be applied to their organizations 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 to be brought back by the participants.

II. Description

- 1. Title (J-No.): Operation and Maintenance of Urban Water Supply System (Water Quality and Purification) (B) (J1804306)**
- 2. Course Period in JAPAN**
June 26, 2018 to August 2, 2018
- 3. Target Regions or Countries:**
Albania, Benin, Brazil, Cote d'Ivoire, Eritrea, Ethiopia, Laos, Liberia, Malawi, Mauritius, Myanmar, Pakistan, Peru, Rwanda, Sri Lanka, Sudan and Tunisia, ,
- 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) :**
17 participants
- 6. Language to be used in this program :** English (including Japanese with interpretation into English)
- 7. Course Objective:**
To develop engineers' capabilities to play the core role in the field of "water quality and purification" in the organizations in charge of urban water supply in the target countries and regions so the applicable knowledge and skills of Japan are to be shared among the engineers and technicians in their home countries.
- 8. Overall Goal:**
By sharing the acquired knowledge and skills in the field of "water quality and purification" of Japan's urban water supply system, the capabilities of urban water supply maintenance and management in target countries and regions will be 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 (May-June 2018) <i>Participating organizations make required preparation for the Program in the respective country.</i>		
Output	Contents	Method
1) Issues of participating organizations and what participants should acquire in the program in Japan will be clarified.	(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

All the selected participants are required to present the **Country Report** in the core phase in Japan. Participants are requested to make the said country report with PowerPoint including photos, data, maps, charts and diagrams, etc., for efficient presentation, in order to send the report to JICA Kansai before their arrival in Japan.

(2) Core Phase in Japan (June 26 to August 2, 2018) Participants dispatched by the organizations attend the Program in Japan.		
Output	Contents	Method
2) Participants will be able to explain about Water Quality and Purification issues and related operation and maintenance techniques utilized by Kobe City Waterworks Bureau and other organizations.	(1) Water Treatment (introduction and visit to water treatment plant, methodology of water quality control, theory of chlorination , comprehensive water treatment)	Lecture/ Observation
	(2) Review of the learning	Discussion
3) Participants will be able to explain about adequate administration of water supply business, and apply Water Quality and Purification related practical knowledge and techniques	(1) Operation and maintenance of purification plants	Lecture/Practice/ Observation
	(2) Operation and maintenance of intake and distribution facilities	Lecture/Practice/ Observation
	(3) Maintenance of mechanical, electrical and measuring instruments and water quality control	Lecture/Practice/ Observation
	(4) Review of the learning	Discussion
4) Action Plan will be formulated to disseminate Water Quality and Purification related knowledge and techniques which are applicable to participating organizations	(1) Action Plan formulation	Self-learning/ Discussion
	(2) Action Plan presentation	Presentation/ Demonstration

(3) Finalization Phase in participant's home countries (August 3 to December 31, 2018) <i>Participating organizations produce final outputs by making use of results brought back by participants. This phase marks the end of the Program.</i> <i>Participating organizations are required to submit the progress report by Dec.31, 2018.</i>		
Output	Contents	Method
5) Knowledge and skills newly acquired in Japan will be shared and disseminated in participating organizations within four months after participants' return.	(1) Action Plan implementation in participating organizations	In-house Activities in Action Plans
	(2) Formulation of Progress Report on Action Plans	Submission of the Report to JICA local offices

10. Flow of the Program:

(Before the Program in Japan)

Issue Analysis in Applying Organizations

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

*The organizations are also required to make a commitment to implement the Action Plan to be formulated by participants after their completion of the Program in Japan.



(During the Program in Japan)

Inception Report Presentation:

*Issues in the participating organization

*What the participant expect to learn in the Program



Action Plan Workshop:

*Participants will learn how to set up a theme and to draft the Action Plan



General Information on Water Supply Systems

*Waterworks in Japan

*Water supply systems of Kobe City



Water Quality and Purification:

*Lectures, observations and practices

*Water quality control and purification methodology

*Visits to related plants and laboratory facilities



Formulation of Action Plan

*Formulate the Action Plan to disseminate techniques learnt in Japan which can be utilized to improve the issues in the participating organization.

*Consultation and facilitation are given by Kobe waterworks experts.

(After the Program in Japan)



Action Plan Implementation

*Participants' organizations are required to submit the **Progress Report** by December 31, 2018

11. Structure & Contents of the Program:

1st & 2nd weeks (July 2 to 13)

- (1) Country Report Presentation,
- (2) General information on water supply systems in Japan and in Kobe City, and operation and maintenance of electric and mechanical equipment,
- (3) Outline of purification plants, industrial water works, water storage facility and wastewater treatment plants, and
- (4) Observation of reservoirs, water purification plants, museums, clean water management centers, water distribution Facilities, water treatment plants.

3rd to 5th week (July 16 to July 31)

- (1) Practice of water quality continuous monitoring instrument,
- (2) Fundamentals of water quality analysis (theory of chlorination, other treatments),
- (3) Visit to slow sand filter of Hiroshima Waterworks Bureau in Mihara City, Hiroshima Prefecture,
- (4) Observation of small scale purification plants, automated siphon filters, chlorine injection equipment, sludge sun dry bed and ground water Purification Plants,
- (5) Outline of water intake, and
- (6) Action Plan formulation and presentation

12. Action Plan: Participants are required to formulate “Action Plan” in the Program in Japan and to implement the plan after their return by following manners as one of the outputs of the Program.

(1) Objective of the Action Plan: To improve the technical issues of participating organizations by disseminating knowledge and information learnt in the the Program in Japan.

(2) Target of the Action plan: Engineers/technicians and/or management in the participating organizations or its related organizations.

(3) Contents to be covered in the plan:

- a) Related technical issues in the participating organization,
- b) Knowledge and information applicable to improve the issues,
- c) Relationship between the knowledge/information and the issues of the participating organization (How it can be applied),
- d) Goals to be achieved by dissemination of such knowledge/information,
- e) Specific target of the plan
- f) Methods and measures for dissemination of such knowledge/information, and
- g) Evaluation methods of achievement of the goals

(4) Main practitioner of the Action Plan: Participants

(5) Role of participating organization:

- a) To select responsible persons who should strategize and implement the Action Plan by their own initiatives in addition to participants,
- b) To support achievement of the Action Plan, and
- c) To evaluate status and degrees of achievement of the Action Plan.

*** In case the progress report is not submitted by participants by December 31, 2018, JICA may suspend acceptance of further applications from the organizations which such participants belong to.**

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations:

- (1) This program is designed primarily for counterpart organizations of Japan's bilateral organizations that intend to address specific issues or problems identified in their operation. Participating organizations are expected to utilize the program for those specific purposes.
- (2) This program is enriched with content and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the program to meet specific requirements of participating organizations and effectively facilitate them toward solutions for the issues and problems.
- (3) As this program is designed to facilitate participating organizations' finding concrete solutions for their issues, such organizations are expected to make due preparation before dispatching their participants to Japan by carrying out the activities of the Preliminary Phase described in Section II-9.
- (4) Participating organizations are also expected to make the best use of the results achieved by their participants in Japan by carrying out the activities of the Finalization Phase described in Section II-9.

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 Quality and Purification" of operation and maintenance of urban water supply or managers/officers currently engaged in urban water supply at related field offices, such as water treatment plants, with at least five (5) years' practical experience in that area.
- 2) To have a strong commitment and capacity to disseminate acquired techniques and knowledge after their return.
- 3) Language: **have a competent command of spoken and written English** which is equal to TOEFL CBT 250 or more (This 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. Pregnant applicants are not recommended to apply due to the potential risk of health and life issues of mother and fetus.

(2) Recommendable Qualifications:

Age: **be under forty-five (45) years of age** for the field activity under the harsh climate.

3. Required Documents for Application:

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

(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 Expiry date.

(3) Nominee's English Score Sheet (photocopy): to be submitted with the Application Form, if you have any official documentation of English ability (e.g., TOEFL, TOEIC, IELTS).

(4) Inception Report: to be submitted with the Application Form.

Please refer to the ANNEX I of this General Information, and submit it **along with the Application Form**. Applications without the inception report will not be accepted.

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 14, 2018**.)

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

(3) Notice of Acceptance:

Notification of results will be made by the JICA office (or the Embassy of Japan) **not later than May 25, 2018.**

5. Document to be submitted by accepted participants:

Country Report -- to be submitted by **June 8, 2018:**

Before coming to Japan, only accepted participants are required to prepare a Country Report (See **ANNEX II** for further details). This Country Report should be sent by participants directly to JICA by **June 8, 2018,** at Sadatani.Toshiki@jica.go.jp and jicaksic-unit@jica.go.jp by email.

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 program expenditure depending on the severity of said violation, and
- (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 Kansai

(2) **Contact:** Mr. SADATANI Toshiki, Program Division 2

(Sadatani.Toshiki@jica.go.jp / jicaksic-unit@jica.go.jp)

2. Implementing Partners:

(1) **Name:** Kobe City Waterworks Bureau

URL: <http://www.city.kobe.lg.jp/foreign/english/index.html>

(2) **Name:** Kobe Water Service Corporation (affiliated with Kobe City Waterworks Bureau)

URL: <https://www.kwsc.jp/> (English page unavailable)

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 in Japan up to departure from Japan.

Thus, traveling time outside Japan will not be covered.

4. Accommodation in Japan:

In principle, JICA will arrange the following accommodations for the participants in Japan:

JICA Kansai International Center

Adresse : 1-5-2, Wakinohama-Kaigandori, Chuo-ku, Kobe, Hyogo 651-0073, Japan

TEL : 81-78-261-0388 FAX : 81-78-261-0465

(“81” is the country code for Japan, and “78” is the local area code)

If there is no vacancy at JICA Kansai, JICA will arrange alternative accommodations for the participants. Please refer to facility guide of JICA Kansai at its URL, <https://www.jica.go.jp/kansai/english/office/index.html>

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), and

(4) Expenses for program implementation, including materials.

For more details, please see “III. of 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 Embassy of Japan), to provide participants with details on travel to Japan, conditions of the participation in the program and other matters.

V. Other Information

1. Participants who have successfully completed the program will be awarded a certificate by JICA.
2. For the promotion of mutual friendship, JICA Kansai encourages international exchange between JICA participants and local communities, including school and university students as a part of development education program. JICA participants are expected to contribute by attending such activities and will possibly be asked to make presentations on the society, economy and culture of their home countries.
3. Participants are recommended to bring laptop computers for their convenience, if possible. During the program, participants are required to work on the computers, including preparation of the Action Plan, etc. Most of the accommodations have internet access. Also, there is a computer room in JICA Kansai where 6 desk-top computers are available with internet access.
4. Allowances, such as for accommodation, living, clothing, and shipping, will be deposited to your temporary bank account (opened by JICA) 2 to 5 days after your arrival in Japan. It is highly advised to bring some cash in order to cover necessary expense for this period.
5. It is very important that some of your currency must be exchanged to Japanese Yen at any transit airport or Kansai International Airport (KIX) in Osaka, Japan soon after your arrival. It is quite difficult to exchange money after that, due to limited availability of facility or time during the program.

ANNEX I

Operation and Maintenance of Urban Water Supply System (Water Quality and Purification)(B)

Inception Report

Name : _____

Country : _____

1. General information on your city/town:
(Geographical features, total population, social and economic status, climate, etc.)

2. Name of organization:
(Organization chart, number of employees, etc.)

3. Your present position & duties/responsibility:

4. Technical issues your organization is now facing, and particular subjects your organization expects you to learn in the program.
(Please have a discussion in your organization and fill up the charts on the next page with the consensus of your organization.)
*You are advised not to focus on financial or administrative issues, but on technical issues, since this program shall not contribute to improving financial nor administrative issues.

5. Relationship of your organization with Japan's bilateral cooperation program, if any:
(ex. Counterpart organization of Technical Cooperation Program titled "xxxxxx".)
*This program targets on counterpart organizations or their related organizations of Japan's bilateral cooperation program only.

	Technical Issues	Objective data to suggested issues	Expectation to the program
Organization			
<ul style="list-style-type: none"> ➤ Water resource ➤ Water pollution ➤ Water quality control 			
Water treatment facilities			
<ul style="list-style-type: none"> ➤ Mechanical and electrical facilities ➤ Measuring equipment 			
*pipelines			

Organizational viability

SWOT Analysis of your organization

S (Internal Strength)	O (External Opportunities)
W (Internal Weakness)	T (External Threats)

ANNEX II

Operation and Maintenance of Urban Water Supply System (Water Quality and Purification)(B)

Country Report

Specifications:

- 1) Contents: as indicated below
- 2) Pages (Slides): 9 pages (slides) at a maximum
- 3) Media: PowerPoint

Page	Topics	Detailed Contents
1	(Cover page)	Program Title, Country, Participant's Name, Date
2	General information on Your Country	Geographical Position, Population, Social & Economic Statistics, etc.
3	General Information on the Current Situation of Water Supply	Please provide the following information (and other related information, if any) in the area where your organization is responsible for water supply (Examples) <ul style="list-style-type: none">➤ Water source, its quality and quantity➤ Total length of piping➤ Water supply coverage rate➤ NRW rate, etc.
4	Organization Chart & Your Duty	<ul style="list-style-type: none">➤ Organization Chart where you belong to➤ Your duties and responsibility in Your Organization
5 - 8	Issues & Problems Your Organization Is Currently Facing	(Examples) <ul style="list-style-type: none">➤ Frequent breakdown of machines and pipes➤ High turbidity after heavy rain➤ Contamination of the river due to industrial waste water➤ Lack of capable engineers, etc.
9	What You Are Expected to Learn in the Program in Japan	List up 3 topics and state their reasons

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, Knowledge Co-Creation programs (until 2015, so called “training”), JOCV programs, etc.

Within this wide range of programs, Knowledge Co-Creation 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

For enquiries and further information, please contact the JICA office or Embassy of Japan.

Further, address correspondence to:

JICA Kansai International Center (JICA Kansai)

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

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