



Knowledge Co-Creation Program (Group & Region Focus)

GENERAL INFORMATION ON

DESIGN AND MAINTENANCE OF SEMI AEROBIC LANDFILL SITE (FUKUOKA METHOD)

課題別研修「準好気性埋立(福岡方式)処分場の設計・維持管理」

JFY 2017

NO. J1704202 / ID. 1784812

Course Period in Japan: From October 9, 2017 to November 11, 2017

This information pertains to one of the JICA Knowledge Co-Creation Program (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 Program (KCCP)’ as a New Start

In the Development Cooperation Charter which was released from the Japanese Cabinet on 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

Due to rapid population growth and expansion of residential area in urban areas, developing economies are facing issues in waste management, and capacity of landfill sites are not enough to deal with increased / diversified wastes. Appropriate landfill techniques are vital factors of waste management.

“Semi Aerobic Landfill Method,” also known as “Fukuoka Method,” is the technology to improve final disposal sites. It was developed in 1970’s by the Fukuoka City of Fukuoka Prefecture in Japan and Fukuoka University, and now is widely applied to the final disposal site in Japan. Furthermore, this technology is applied in many landfill sites in overseas.

For what?

This training program intends to promote introduction and effective management of semi aerobic landfill (Fukuoka Method), one of techniques for final disposal site. Participants are able to enhance practical knowledge and techniques, as the curriculum covers design, maintenance, and conservation of surrounding environment, focusing on practices.

For whom?

This program is offered to the staffs in charge of management and maintenance of the final disposal sites.

How?

Participants will learn techniques and know-how in the field through lectures, observations, practices, and discussions. At the end of the program, participants will be requested to present an Action Plan, utilizing the contents of the program.

II. Description

1. Title (J-No.): Design and Maintenance of Semi Aerobic Landfill Site (Fukuoka Method) (J1704202)

2. Course Period in JAPAN

From October 9, 2017 to November 11, 2017

3. Target Regions or Countries

Afghanistan, Honduras, Kenya, Marshall Islands, Micronesia, Nigeria, Palau, Papua New Guinea, Peru and Viet Nam

4. Eligible / Target Organization

This program is designed for governmental organizations in charge of management of the final disposal sites.

5. Course Capacity (Upper limit of Participants)

10 participants

6. Language to be used in this program

English

7. Course Objective

Participants will be able to formulate and propose action plans for improvement of landfill sites, utilizing contents of the training program.

8. Overall Goal

The formulated action plan is actually implemented in the organizations.

9. Expected Module Outputs and Contents:

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

Expected Module Output	Subjects	Methodology
1) Being able to explain about various methods of waste disposal around the world	- Waste disposal in Fukuoka City - Examples from foreign countries to introduce semi aerobic landfill	Lecture and discussion
2) Being able to explain about methodologies for designing of semi aerobic landfill	- Site selection - Theories on semi aerobic landfill - Construction of the new disposal site - Improvement of existing disposal site	Lecture, observation and practice

3) Being able to explain about maintenance management of semi aerobic landfill	<ul style="list-style-type: none"> - Waste haulage management - Operations for dumping and soil-covering - Leachate treatment 	Lecture, observation and practice
4) Being able to explain about environmental management in semi aerobic landfill	<ul style="list-style-type: none"> - Composition analysis of solid waste and leachate - Quality control of discharged water - Inspection of underground water and generated gas - Application to CDM 	Lecture, observation and practice
5) Being able to formulate an action plan for improvement of landfill sites	<ul style="list-style-type: none"> - Action plan formulation and discussions 	Discussion, presentation and report writing

Please refer to the attached schedule (Annex III). The schedule is subject to minor changes.

10. Preparation in a participant's home country

Applying organizations are required to submit Job Report and Questionnaire together with the application form for selection in Japan (Annex I and II).

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) Current Duties: staffs in charge of management and maintenance of the final disposal site
- 2) Experience in the relevant field: have more than three (3) years of experience in the field mentioned above.
- 3) Educational Background: be a graduate of university or equivalent level.
- 4) Language: have a competent command of spoken and written English which is equal to TOEFL iBT 100 or more (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

- 1) Be in relation with past or on-going JICA projects focusing on waste management.
- 2) Be familiar with engineering background.
- 3) Be familiar with PC operation, as there will be many chances for report writing and presentation.

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 Expire date.

- (3) Job Report and Questionnaire:** to be submitted with the application form. Fill in Annex I and Annex II of this General Information, and submit them along with the Application Form. Job Report and Questionnaire are necessary documents for screening of an applicant.

Each participant will be required to present his/her Job Report and Questionnaire in approximate 10 minutes in an early stage of the course. Visual materials such as PowerPoint and pictures may be helpful for your presentation if you bring them. When you use PowerPoint, it is preferable to use letters more than 24-point and not to use pictures on the background.

- (4) Nominees' 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. 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 **August 14, 2017.**

(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 September 7, 2017.**

5. 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 KYUSHU

(2) **Contact:** Training Program Division (kictp@jica.go.jp)

2. Implementing Partner:

Fukuoka Environment Foundation

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 Kyushu International Center (JICA KYUSHU)

Address: 2-1, Hirano 2-chome, Yahata Higashi-ku, Kitakyushu-shi,
Fukuoka Prefecture 805-8505, Japan

TEL: +81-93-671-6311 FAX: +81-93-671-0979

(where “81” is the country code for Japan, and “93” is the local area code)

If there is no vacancy at JICA KYUSHU, JICA will arrange alternative accommodations for the participants. Please refer to facility guide of KIC at:

<http://www.jica.go.jp/english/about/organization/domestic/index.html>

During the technical training by Fukuoka Environment Foundation, participants will stay in a room of the apartment-type hotel in Fukuoka City. There isn't a restaurant at the hotel but the room is equipped with a mini-kitchen. You need to buy food at the supermarket nearby or cook by yourself. There are also some restaurants around the hotel.

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 JICA office (or Japanese Embassy) in participants' country, to provide them with details on travel to Japan, conditions of the workshop and other matters.

V. Other Information

1. Reports and Presentation:

(1) Job Report and Questionnaire

As written in the previous page, each nominee is required to submit his/her own Job Report following the instruction in Section III. Participants will have a presentation of his/her Job Report and Questionnaire up to 10 minutes at the earlier stage of the training in order to share knowledge and background with other participants as well as instructors. Visual materials such as Power Point and pictures may be helpful for your presentation if you bring them with you. When you use Power Point, it is preferable to use letters more than 24 points and not to use pictures on the background.

(2) Action Plan Report

Participants are required to formulate an action plan at the end of the training program to express your idea and plan, which you carry out after your return, reflecting the knowledge and method you acquire from the training. Each participant will have 10 minutes for presentation.

(3) Laptop PC

It is strongly recommended that the participants bring their own laptops upon arrival in Japan. They will be useful to take notes, modify reports, and prepare for presentations. If one does not bring, then s/he can check out from KIC Library, but please be reminded the only English OS is available.

2. International Exchange Program with local communities:

JICA encourages international exchange between JICA participants and local communities. Participants will have a chance to visit elementary schools or junior high schools. Therefore, participants are recommended to bring their national costumes or crafts and materials such as CDs and photographs that will make the exchange program more fruitful.

3. Remarks:

JICA training is implemented for the purpose of development of human resources who will promote the advancement of the countries, but not for the enrichment of individuals or private companies. Matters of a trade secret and patent techniques will remain confidential and inaccessible during the training.

Annex I

Design and Maintenance of Semi Aerobic Landfill Site (Fukuoka Method) (JFY 2017) *Job Report*

Name: _____
Country: _____
Organization and present post: _____
E-mail: _____
FAX: _____

Remarks 1: The Report should be typewritten in English (12-point font, appropriately spaced, A4 size paper) and total pages of the report should be limited to 3 pages (not including organization chart).

Remarks 2: Please don't forget checking the analysis sheet.

Remarks 3: Each participant is requested to give presentation up to around 10 minutes based on this Job Report at the early stage of the training for the purpose of making the training more effective and fruitful by comprehending the situations and problems of the participants each other

Remarks 4: It is also requested to prepare a POWERPOINT for the presentation. When you use PowerPoint, it is preferable to use letters more than 24 points and not to use pictures on the background.

Remarks 5: Please itemize your answer and make them specific.

1. Organization and main tasks (up to 1 page)

(1) Description of the organization

Name of organization:

Number of staff:

Main task of the organization:

Your task in the organization:

(2) Organization chart

Please draw a chart of your organization including the department (section) names with the number of staffs in it and mark where you are positioned.
(The chart should be attached and not be counted in this page limit.)

(3) Description of your assignments to the training

2. Existing challenges in your section (up to 1 page)

(1) Challenges you are facing in your section (Please describe concrete details)

(2) Countermeasures for these challenges

(3) Obstacles in the process of solving those challenges

3. Expectations for the training course (up to 1 page)

(1) Most interesting subjects or topics in this training course and reasons why you pick up the subjects

(2) How do you expect to apply skills and knowledge according the listed items in Curriculum after you return to your home country?

(3) Other matters you are expecting for this course, if any
(Basically this training program is fixed and cannot be changed upon your request.)

Annex II

Design and Maintenance of Semi Aerobic Landfill Site (Fukuoka Method) (JFY 2017) Questionnaire

Name: _____
Country: _____
Organization and present post: _____
E-mail: _____
FAX: _____

Remarks 1: The Questionnaire should be typewritten in English (12-point font, appropriately spaced, A4 size paper), and total pages of the report should be limited to 2 pages.

Remarks 2: Please itemize your answers and make them specific.

1. Have you ever studied the following subjects? Please check either Yes or No.
If your answer is "Yes", please fill in "Years" parentheses with your years of experience on the respective items.

	YES	NO	Years
(1) Environmental science and engineering	()	()	()
(2) Sanitary engineering	()	()	()
(3) Environmental education	()	()	()
(4) Household refuse treatment practice	()	()	()
(5) Solid waste management administration	()	()	()

2. Explain the situation in the jurisdiction of your organization.

(1) Household Refuse Management

- Volume of household refuse
- Kinds of household refuse and their percentage
- Collection method
- Fee of household refuse

(2) Landfill Site

- Capacity (volume and area)
- Distance from collecting spot to landfill site
- Method for measurement (or estimation) of volume of waste
- Volume of waste per day
- Rate of tipping fee
- Management (local government or private company)

(3) Industrial Waste

- Kinds/volume of industrial waste
- Waste generator can be identified?

(4) Population in the area which your organization is in charge of

(5) The annual budget (U.S. dollar) for solid waste management

(6) Solid waste management

a. Breakdown by weight of the annual solid waste materials and percentage

	Weight (tons)	Percentage
- food	(t)	(%)
- paper	(t)	(%)
- plastic	(t)	(%)
- metals	(t)	(%)
- others	(t)	(%)

b. Breakdown of annual municipal solid waste budget and their percentage

	Budget (USD)	Percentage
- collection	(USD)	(%)
- construction of treatment/disposal facilities	(USD)	(%)
- disposal operation and management	(USD)	(%)
- others	(USD)	(%)

(7) Compost plant

- Method and capacity

(8) Medical/Toxic waste treatment

- Kind/volume of medical/toxic waste treatment
- Treatment method

(9) Environmental education

- Method and target persons

Annex III

Tentative Schedule

Date			Contents
October	9	Mon	Holiday (Arrival to Japan)
	10	Tue	JICA Briefing
	11	Wed	Program Orientation, General Orientation (Jap. Politics and Administration)
	12	Thu	Japanese Language Class
	13	Fri	Japanese Language Class, International Exchange Program
	14	Sat	Holiday
	15	Sun	Travel to Fukuoka City Briefing on the facilities tour in the neighborhood
	16	Mon	Orientation by Fukuoka Environment Foundation/ Courtesy Visit to Fukuoka City (Mayor) / Job Report Presentation
	17	Tue	Waste Management in Fukuoka City (History, Collection System, Treatment and Final Disposal, 3 R & Separation of Waste)
	18	Wed	Category of Landfill Sites by Structure Advantages of Semi-Aerobic Landfill Structure
	19	Thu	Case Studies of Improvement and Closure of Final Disposal Sites in Developing Countries by Fukuoka Method
	20	Fri	Exercise: Sorting out the Problems of Final Disposal Sites in Your Countries Observation of Waste Collection & Transportation Services of Fukuoka City
	21	Sat	Holiday
	22	Sun	Holiday
	23	Mon	Visit the Tobu Landfill site, the Tobu Leachate Treatment Plant, the Green Recycle Center, the Tobu Incineration Plant
	24	Tue	Condition of landfill monitoring and basics of leachate treatment Visit Seibu Leachate Treatment Plant
	25	Wed	Practice: Wastewater Treatment System for Developing Countries (Recirculation System, ECO-FAN, Tornado-type)
	26	Thu	Visit Glass/PET bottles recycling plant Design and Construction of a Fukuoka Method Landfill (Site Selection, Structures of Main Facilities) Visit Seibu Final Disposal Site
	27	Fri	On-Site Training of Fukuoka Method (Wastewater Collection and Installation of Gas Venting Equipment using bamboo, oil drums, etc.)
	28	Sat	Holiday
	29	Sun	Holiday
	30	Mon	Function and Basic Knowledge of Cover Soil

			Practice on Monitoring and Evaluation
November	31	Tue	Visit Seibu shredding and sorting center Visit Seibu 3R station Guidance on Action Plan Preparation
	1	Wed	Medical Waste Disposal (Visit Fukuoka Civic Hospital) Fukuoka Method in Samoa-Example from the Improvement Project
	2	Thu	Travel to Kumamoto City Visit a privately-run recycling factory and a privately-run final disposal site for industrial wastes Travel back to Fukuoka
	3	Fri	Holiday
	4	Sat	Seminar on waste management in respective countries (Draft action plan presentation and discussion)
	5	Sun	Holiday
	6	Mon	Landfill management & operation, landfill method & maintenance of heavy machinery for landfill site Landfill Method
	7	Tue	Travel to Minamata City Environmental study on Minamata Disease Visit the Kumamoto Environment Center Travel back to Fukuoka
	8	Wed	Landfill management & operation, landfill method & maintenance of heavy machinery for landfill site Landfill Method
	9	Thu	Visit 'Kururun' Communal Recycling Center Travel to Onojo City Visit the Landfill Site for Southern Fukuoka Region Travel back to Fukuoka
	10	Fri	Action Plan Presentation, Evaluation Meeting, Closing Ceremony, Farewell Party
	11	Sat	Departure for home

*The schedule is subject to minor changes.

For Your Reference

JICA and Capacity Development

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

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

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

Japanese Development Experience

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

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

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

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



CORRESPONDENCE

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

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