



# TRAINING AND DIALOGUE PROGRAMS

GENERAL INFORMATION ON

**INDUSTRIAL WASTEWATER TREATMENT TECHNIQUES(A)**

**集團研修「産業廃水処理技術（A）」**

***JFY 2011***

**<Type: Solution Creation / 類型：課題解決促進型>**

**NO. J11- 00687 / ID. 1180815**

**From August 2011 to March 2012**

**Phases in Japan: From August 21, 2011 to December 17, 2011**

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

# ***I. Concept***

## **Background**

Developing countries, which are becoming increasingly industrialized, now face the deterioration of their living and natural environments due to water pollution caused by industrial and domestic wastewater. It is critical that these countries work to prevent such environmental pollution from occurring and promote effective water quality improvement measures.

This is the background against which this program has been set up: to provide engineers involved in the management of industrial wastewater in various industries with the opportunity to learn measures and technologies related to water pollution prevention and environmental improvement through looking at concrete example in Japan that are based on experiences accumulated in the Kitakyushu region, one of Japan's leading industrial areas.

## **For what?**

This program aims to formulate adequate plans of industrial wastewater treatment in participant's countries.

## **For whom?**

This program is offered to engineers in charge of wastewater treatment in government / municipal offices or manufacturing industries with more than 5 years of occupational experience.

## **How?**

Participants shall have opportunities in Japan to identify approaches to water pollution control and wastewater treatment through lectures, practice and field study. Participants will also formulate an action plan describing what the participants will do after they go back to home country putting the knowledge and ideas acquired and discussed in Japan.

## ***II. Description***

### **1. Title (J-No.)**

**Industrial Wastewater Treatment Techniques(A) (J11-00687)**

### **2. Period of program**

**Duration of whole program:**

August 2011 to March 2012

**Preliminary Phase** (in a participant's home country): July 2011 to August 2011

**Core Phase in Japan:**

August 21, 2011 to December 17, 2011

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

### **3. Target Regions or Countries**

Bosnia and Herzegovina, Mauritius, Saudi Arabia, and Sri Lanka

### **4. Eligible / Target Organization**

Department of central or local governments, research institutions and companies, which are involved in wastewater treatment

### **5. Total Number of Participants**

9 participants

### **6. Language to be used in this program**

English

### **7. Program Objective**

This training program aims to provide relevant knowledge and skill to participants so that they will be able to formulate appropriate industrial wastewater treatment measures.

### **8. Overall Goal**

Appropriate industrial wastewater treatment measures are implemented in the participating countries.

## 9. Expected Module Output and Contents

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

<b>(1) Preliminary Phase in a participant's home country</b> (July to August, 2011) <i>Applying organizations are required to submit the Job Report and the Issue Analysis Sheet together with the application form for selection in Japan.</i>	
<b>Modules</b>	<b>Activities</b>
<b>Job Report &amp; IAS</b>	Formulation and submission of the job report and the issue analysis sheet(IAS) <sup>1</sup> in PPT format

<b>(2) Core Phase in Japan</b> (August 21, 2011 to December 17, 2011) <i>Participants dispatched by the organizations to attend the Program implemented in Japan.</i>		
<b>Objectives</b>	<b>Subjects</b>	<b>Methodology</b>
<b>I. Basic of Water Pollution Control</b> With regard to basic policies and measures of the government for water pollution control, challenges in your home countries are identified.	<ol style="list-style-type: none"> <li>1) History of water pollution and measures for cleaning</li> <li>2) Global environment and environmental assessment</li> <li>3) Prospects of environmental problem</li> <li>4) Administration for waste disposal</li> <li>5) Wastewater treatment by use of private sewerage tank</li> </ol>	Lecture and Field Study
<b>II. Basic Theory of Wastewater Treatment</b> With regard to the basic theory of wastewater treatment and functions of the treatment equipment, challenges faced in your workplaces are reviewed.	<ol style="list-style-type: none"> <li>1) Pollution control processes</li> <li>2) Outline of wastewater treatment technique</li> <li>3) Development of wastewater treatment technique</li> </ol>	Lecture
<b>III. Basic Plan of Wastewater Treatment</b> Basic technologies of planned treatment facilities, such as treatment and testing methods of various kinds of wastewaters, and the method for selecting treatment methods are reviewed.	<ol style="list-style-type: none"> <li>1) Investigation of wastewater and data analysis</li> <li>2) Selection of treatment method and mass balance</li> <li>3) Details of wastewater treatment and model test</li> </ol>	Lecture, Practice and Field Study
<b>IV. Design and Construction of Wastewater Treatment Facilities</b> Design proposals for the treatment equipment that have matched the basic conditions for wastewater treatment facilities in the practical exercise are prepared	<ol style="list-style-type: none"> <li>1) Detail design of equipment and structures and layout</li> <li>2) Construction plan and schedule management</li> <li>3) Planning of wastewater treatment facilities (case studies)</li> <li>4) Automatic control (sequence control) practice</li> <li>5) Application of CAD practice</li> </ol>	Lecture, Practice and Field Study

<sup>1</sup> Please see Annex-2

Objectives	Subjects	Methodology
<p><b>VI. Formulation of Action Plans</b>            By applying the technologies and knowledge acquired by the participants, countermeasures (action plans) for the challenges facing your organizations are made. After returning to their home countries, the participants will share the action plans they made with other concerned people in their organizations, so that each organization can consider the implementation of the plans.</p>	<ol style="list-style-type: none"> <li>1) Elaboration and presentation of the job report</li> <li>2) Elaboration of the action plan</li> <li>3) PCM(Project Cycle Management)</li> <li>4) Presentation of the action plan</li> </ol>	Lecture and Practice

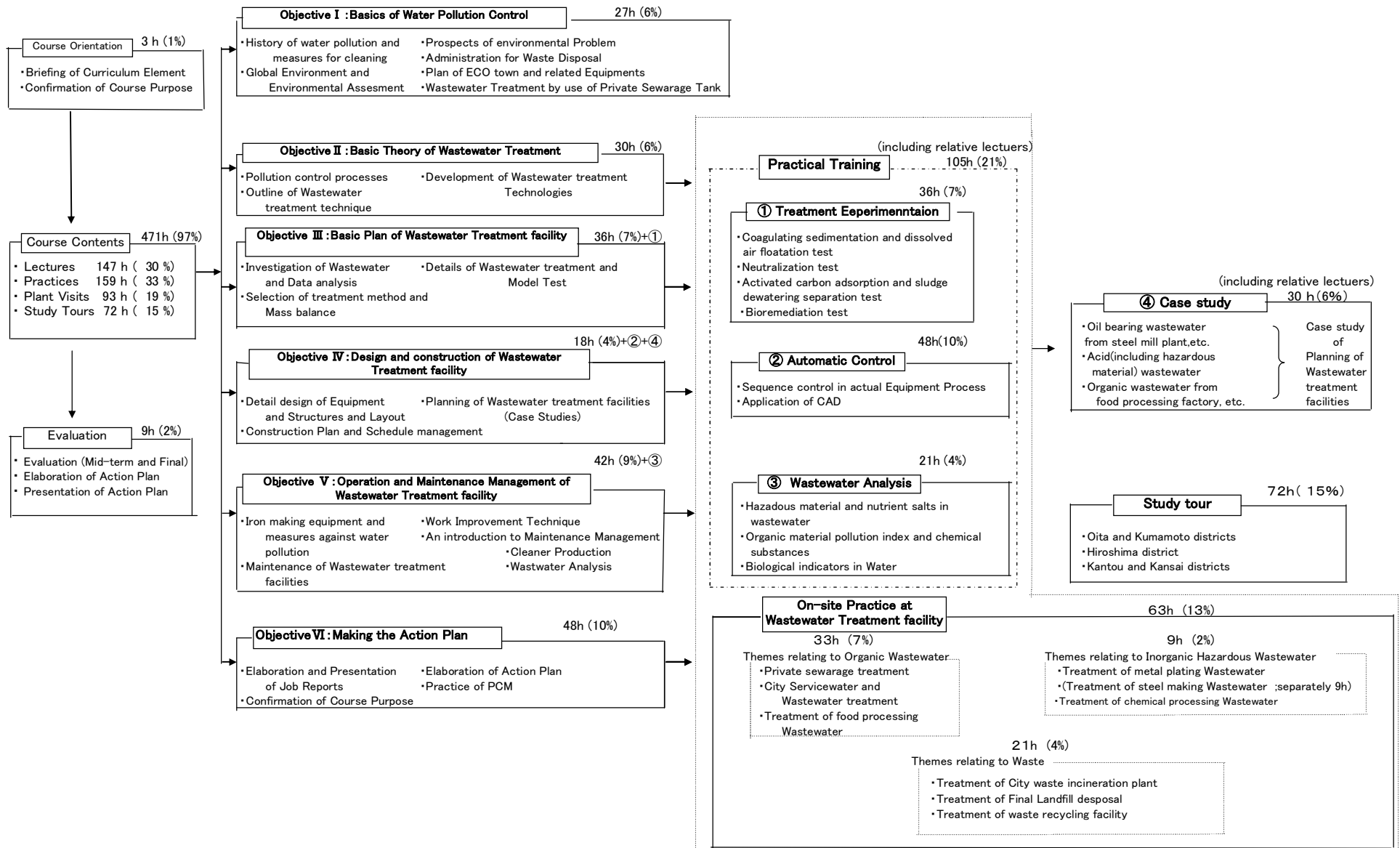
**(3)Finalization Phase in a participant's home country**

(December 2011 to March 2012)

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

Modules	Activities
Examination of the action plan	Application and implementation of the action plan is discussed in the participant's organization and its result will be submitted by March, 2012 based on the follow-up questionnaire to be provided during the phase in Japan.

# Curriculum Structure of the Core Phase in Japan (2011)



## Tentative Schedule in Japan

Date	Subject	Date	Subject	Date	Subject	Date	Subject
8/21	Sun Arriving Japan	9/20	Tue Development of Wastewater Treatment Technology	20	Thu Study trip: Fukuyama (Kaijima Co.)	19	Sat Day-off
22	Mon Briefing Japanese Language Program	21	Wed Wastewater Survey & Data Analysis	21	Fri Study trip: Hiroshima	20	Sun Day-off
23	Tue Medical Check / Cultural Exchange Program	22	Thu Field Study: Wastewater Treatment facilities	22	Sat Day-off	21	Mon Execution Scheme and Scheduling W.T.F. Field Study (Construction Site)
24	Wed Preparation for Job Report Presentation Practice of Project Cycle Management	23	Fri Day-off (Japanese National Holiday)	23	Sun Day-off	22	Tue Field Study (Hakozaki Utility Co.) Field Study (Desalination of Seawater)
25	Thu Practice of Project Cycle Management	24	Sat Day-off	24	Mon Interview (Mid-term Evaluation) Field Study (Kogasaki Incineration Facility)	23	Thu Day-off (Japanese National Holiday)
26	Fri Practice of Project Cycle Management	25	Sun Day-off	25	Tue Iron & Steel-making Process Pollution Measurement in NSC	24	Fri Field Study (Nissan Motor Co.) Study of Action Plan
27	Sat Practice of Project Cycle Management	26	Mon Wastewater Treatment Examination Model tests	26	Wed Environmental Control system in NSC	25	Sat Field Study (Mikasagawa Sewage Treatment Plant) Field Study (Fukuoka Method Landfill)
28	Sun Day-off	27	Tue Wastewater Treatment Examination Model tests	27	Thu Water Pollution Preventive measures in NSC	26	Sun Day-off
29	Mon Explanation on CURRICULUM Presentation of Job Report	28	Wed Wastewater Treatment Examination Model tests	28	Fri Field Study (Sapporo Breweries Ltd.)	27	Mon Day-off
30	Tue Regulation by wastewater Pollution Control Law Environmental Impact Assessment	29	Thu Wastewater Treatment Examination Model tests	29	Sat Day-off	28	Tue Field Study (Hiagari Sewage Treatment Plant) Study of Action Plan
31	Wed Kitakyushu Environment Museum Field Study (Dokai Bay)	30	Fri Wastewater Treatment Examination Model tests	30	Sun Day-off	29	Wed Field Study (Mitsubishi Chemical Corp.) Field Study (Mitsubishi Material Co. Ltd.)
9/1	Thu Field Study (Eco Town) Instruction on Action Plan	10/1	Sat Day-off	31	Mon Work Improvement Technique	30	Thu Maintenance of Wastewater Treatment Facilities Field Study (Maintenance Site)
2	Fri Outline of Industrial Waste Management Field Study (Waste Reclamation Site)	2	Sun Day-off	11/1	Tue Detailed design for Wastewater Treatment Facilities	12/1	Fri Field Study (Anoh Water Purification Plant) Study trip : Yawata → Kisaradzu
3	Sat Day-off	3	Mon Model tests	2	Wed Detailed design for Wastewater Treatment Facilities	2	Sat Study trip: EBARA Corp.
4	Sun Day-off	4	Tue Basic designs for Wastewater Treatment facilities (Principle and Application)	3	Thu Day-off (Japanese National Holiday)	3	Sun Study trip: Tokyo City Rainbow Water Museum
5	Mon Introduction of KIES Wastewater Analysis I	5	Wed Basic designs for Wastewater Treatment facilities (Principle and Application)	4	Fri Study of Action Plan Field Study (Butchery of Kitakyushu City)	4	Sun Study trip: Tokyo (Holiday)
6	Tue Wastewater Analysis II Wastewater Analysis III, IV	6	Thu Basic designs for Wastewater Treatment facilities (Principle and Application)	5	Sat Day-off	5	Mon Study trip: Emerging Science and Reserch Park
7	Wed Wastewater Analysis V Wastewater Analysis VI	7	Fri Basic designs for Wastewater Treatment facilities (Principle and Application)	6	Sun Day-off	6	Tue Study trip: Tokyo City Office
8	Thu Biological Indicators in Water Field Study (Kitakyushu Science and Research Park)	8	Sat Day-off	7	Mon Case Studies: Plannig of Wastewater Treatment Facilities	7	Wed Study trip: Lake Biwa Museum
9	Fri Outline of Wastewater Treatment Technology	9	Sun Day-off	8	Tue Case Studies: Plannig of Wastewater Treatment Facilities	8	Thu Study trip: Morning Tour Study trip: Horiba Co. Ltd.
10	Sat Day-off	10	Mon Day-off (Japanese National Holiday)	9	Wed Case Studies: Plannig of Wastewater Treatment Facilities	9	Fri Study trip: Kyocera Corp Study trip: Kyoto → Yawata
11	Sun Day-off	11	Tue Study of Action Plan Field Study (Daiseki Co.Ltd)	10	Thu Case Studies: Plannig of Wastewater Treatment Facilities	10	Sat Day-off
12	Mon Outline of Wastewater Treatment Technology (Pollution Control Processes)	12	Wed Sequence Control (Relay Sequece)	11	Fri Case Studies: Plannig of Wastewater Treatment Facilities	11	Sun Day-off
13	Tue Outline of Wastewater Treatment Technology (Pollution Control Processes)	13	Thu Sequence Control (Relay Sequece)	12	Sat Day-off	12	Mon An introduction to Maintenance Management & TPM
14	Wed Study trip: Oita	14	Fri Sequence Control (Relay Sequece)	13	Sun Day-off	13	Tue Field Study (Kowa Seiko Co. Ltd.) Field Study (Yamamoto Industries Ltd. Co.)
15	Thu Study trip: Kujyu(Geothermal Power Plant), Aso and Kumamoto	15	Sat Day-off	14	Mon Designing by CAD	14	Wed Field Study (Ichiban Shokuhin Co. Ltd.) Field Study (Fujiclean Industry Co. Ltd.)
16	Fri Study trip: Minamata	16	Sun Day-off	15	Tue Designing by CAD	15	Thu Preparation for the Presentation of Action Plan
17	Sat Day-off	17	Mon Outline of Wastewater treatment in Septic Tank Field Study (HankyuFerry Co.)	16	Wed Designing by CAD	16	Fri Evaluation Meeting Action Plan Presentation , Closing Ceremony
18	Sun Day-off	18	Tue History of Water Pollution & Environmental Education Field Study (Eco Town)	17	Thu Designing by CAD	17	Sat Leaving Japan
19	Mon Development of Wastewater Treatment Technology	19	Wed Outline of Cleaner Production	18	Fri Designing by CAD		

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

#### **1. Expectations for 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.
- (3) As this program is designed to facilitate organizations to come up with concrete solutions for their issues, participating 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) Current Duties:** engineers in charge of wastewater treatment in government / municipal offices or manufacturing industries
- 2) Experience in the relevant field:** more than 5 years of occupational experience in the field of wastewater treatment
- 3) Educational Background:** be a university graduate, majoring in chemical, mechanical, electrical or civil engineering, or the equivalent
- 4) Language:** be competent in spoken and written English which is equal to TOEFL 500 or above, or the Cambridge First Certificate (This training program includes active participation in discussions and action plan 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
  - ※Pregnancy : Pregnant participants are strictly requested to complete the required procedures before departure in order to minimize the risk for their health. The procedures include ①letter of the participant's consent to bear economic and physical risks ②letter of consent from the participant's supervisor ③letter of consent from your Embassy in Japan, ④medical



certificate. Please ask National Staffs in JICA office for the details.

**6) Others:** must not be serving any form of military service.

## **(2) Recommendable Qualifications**

**Age:** forty-five (45) years or younger

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

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

**(2) Job Report:** to be submitted with the application form. Job Report is used for screening of participants. It is a report to understand an outline of an organization that a nominee belongs to as well as his/her work experience in relevant fields. The report should be completed in accordance with descriptions of Annex-1.

**(3) Issue Analysis Sheet (IAS):** to be submitted with the application form. IAS is used for screening of participants.

The purpose of IAS is to logically organize relationships between problems which a nominee's organization facing with and contents of fields to be taken in the training program in Japan. The sheet should be completed in accordance with descriptions of Annex-2. The nominees should submit his/her IAS with approval of his/her superior. The IAS without approval of a nominee's superior is not accepted.

**(4) 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), please attach it (or a copy) to the application form.

## **4. Procedure for Application and Selection**

### **(1) Submitting the Application Documents**

Closing date for application to the JICA Center in JAPAN: **July 1, 2011**

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

### **(2) Selection**

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

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

Notification of results shall be made by the respective country's JICA office (or Embassy of Japan) to the respective Government by **not later than July 21, 2011**.

## **5. Conditions for Attendance**

- (1)** to observe the schedule of the program,
- (2)** not to change the program subjects or extend the period of stay in Japan,
- (3)** not to bring any members of their family,
- (4)** to return to their home countries at the end of the program in Japan according to the travel schedule designated by JICA,
- (5)** to refrain from engaging in political activities, or any form of employment for profit or gain,
- (6)** to observe the rules and regulations of their place of accommodation and not to change the accommodation designated by JICA, and
- (7)** to participate the whole program including a preparatory phase prior to the program in Japan. Applying organizations, after receiving notice of acceptance for their nominees, are expected to carry out the actions described in section II-9 (1).

## IV. Administrative Arrangements

### 1. Organizer

(1) **Name:** JICA Kyushu

(2) **Contact:** Mr. Akihiko Kodama ([Kodama.Akihiko@jica.go.jp](mailto:Kodama.Akihiko@jica.go.jp))

### 2. Travel to Japan

(1) **Air Ticket:** The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.

(2) **Travel Insurance:** Term of Insurance: From arrival to departure in Japan. The traveling time outside Japan shall not be covered.

### 3. 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 City,  
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 its URL, <http://www.jica.go.jp/english/contact/domestic/index.html>

### 4. Expenses

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

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

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

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

(4) Expenses for program implementation, including materials

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

### 5. Pre-departure Orientation

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

## ***V. Other Information***

### **1. Japanese Language Program**

Intensive Japanese language program will be conducted prior to the technical training

### **2. Reports and Presentation**

#### **(1) Job Report & Issue Analysis Sheet (IAS)**

As written in the previous page, each nominee is required to submit his/her own Job Report and IAS. Participants will have a presentation of his/her Job Report & IAS 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. The report would be sent to the respective country's JICA office.

### **3. 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.

### **4. 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.

## Industrial Wastewater Treatment Technique (JFY 2011)

### *Job Report*

Name:

Country:

Organization and present post:

E-mail:

FAX:

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

**Remarks 2:** Each participant is required to have presentation in 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.

**Remarks3:** Please itemize your answer and make them specific.

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

##### (1) Main tasks of the organization

(Please include annual turnover or product amount, name of products and number of employees.)

##### (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.)

Please describe a duty of each department (section) briefly. If you have the department for manufacturing of machine parts, please describe details.

##### (3) Brief description of your assignments

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

(1) Most interesting subjects or topics in the training course

(2) How do you expect to apply skills and knowledge for your problem solving according to listed items in curriculum (in section //9 (2)) after you return to your home country?

(3) Other matters you are expecting for this course

**3. Your working experience**

Have you ever learned the following subjects in your work? We would like to know your work experience. Please check either “Yes” or “No”.

If your answer is “Yes”, please fill in “Years” column the length of your application on the respective items.

	Yes	No	Years
1. Environmental control of wastewater quality.....	( )	( )	( )
2. Planning and designing of wastewater treatment facilities.....	( )	( )	( )
3. Operation and maintenance of wastewater treatment facilities .	( )	( )	( )
4. Operation and maintenance of waste treatment facilities .....	( )	( )	( )
5. Analysis of wastewater.....	( )	( )	( )
6. Information processing (computer programming).....	( )	( )	( )
7. Environmental engineering.....	( )	( )	( )
8. Chemical engineering .....	( )	( )	( )
9. Hygiene engineering.....	( )	( )	( )
10. Electrical engineering .....	( )	( )	( )
11. Mechanical engineering.....	( )	( )	( )
12. Civil engineering .....	( )	( )	( )
13. Other ( ) .....			( )

\* Under “13. Other”, please specify subjects not covered by any of the items “1” to “12”.

## Issue Analysis Report (IAS) Guidelines

### 1. What is IAS?

- (1) IAS is a tool to logically organize relationships between issues or problems which a nominee's organization facing with and the subjects to be covered in the training program in Japan.
- (2) IAS will help nominee to clarify his/her issues or problems to be covered in each expected module output and to formulate solutions to them.
- (3) The sheet is to be utilized as a logical process control sheet to draw on improvement plans for issues by filling out the sheet in phases from prior to a nominee's arrival in Japan and through the end of training.
- (4) Also, it is used for the course leader and lectures to understand the issues that each participant is facing to, and provide him/her technical advice, useful reference and solutions through the training program in Japan

### 2. How to fill out IAS?

- (1) Please refer to Item 2 "Purpose of Application" of Part A in the Application Form, and describe the issues or problems which your department facing in the column "A" and "B" in each "Expected Module Output" of IAS. You will formulate practical solutions to those issues/problems through the training program in Japan.
- (2) Please leave the column C and D blank. These columns are filled out during the training program in Japan.
- (3) If your organization has many issues/problems to be solved, you can submit two or more sheets.

### 3. Remarks

- (1) IAS without approval of a nominee's superior is not accepted.
- (2) IAS is a key material for screening of nominees. Japan side puts emphasize on its content and proceeds screening.
- (3) Accepted participants will make a presentation on the IAS and the job report at the beginning of the training program in Japan
- (4) Accepted participants are requested to bring this IAS in electronic file when coming to Japan.

**【Example】 Issue Analysis Sheet (IAS)**

<Country Name> \_\_\_\_\_ <Participant's Name> \_\_\_\_\_ <Organization and Present Post> \_\_\_\_\_

Expected Module Output	Category	A : Issues/Problems You Are Facing at work	B : Suspected Causes (of the Issue/Problems)	C : Measures Taken in Japan	D : Proposal to Your Department/Organization
<b>I Basics of Water Pollution Control</b> (With regard to basic policies and measures of the government for water pollution control, challenges in your home countries are identified.)	<ul style="list-style-type: none"> <li>●Environmental Administration</li> <li>●Environmental Education</li> </ul>	1. Laws and regulations are in place but compliance is not achieved. 2. Low environmental awareness among citizens and enterprises.	1-1 Lack of monitoring systems 1-2 Lack of penal code 1-3 Poor inspection and checking techniques 2-1 Lack of environmental education system 2-2 Companies' priority on profits		
<b>II Basic Theory of Wastewater Treatment</b> (With regard to the basic theory of wastewater treatment and functions of the treatment equipment, challenges faced in your workplaces are reviewed.)	<ul style="list-style-type: none"> <li>●Outline of WW Treatment Techniques (Including new techniques)</li> <li>●Pollution Control Processes</li> </ul>	1. Multiple facility or operational difficulties, however, we are unable to respond properly to fix them. 2. . . . .	1-1 Lack of technical training systems 1-2 Lack of manuals for facility operation and maintenance	To be filled out through training program in Japan.	
<b>III-IV Basic Plan, Design and Execution of Treatment Facilities</b> (to acquire techniques in basic planning and design of treatment facilities)	<ul style="list-style-type: none"> <li>● Wastewater Treatment Tests and Selection of the Optimum Treatment Methods</li> <li>●Detailed Designs of Treatment Facilities</li> </ul>	1. . . . . 2. . . . .		●For these columns, please explain with simple sentences rather than by making notes. ●Please write multiple answers if there is more than one answer.	
<b>V Operation/Maintenance of Treatment Facilities</b> (to understand the operation and maintenance of treatment facilities)	<ul style="list-style-type: none"> <li>● Operation, Maintenance and Survey of Treatment Facilities</li> <li>●Maintenance and Control Techniques</li> </ul>	1. . . . . 2. . . . .	1-1 . . . . . 1-2 . . . . .		
_____	others				

Name of Superior Officer \_\_\_\_\_ Designation/Position of superior officer \_\_\_\_\_

Signature \_\_\_\_\_



**Annex-2: Issue Analysis Sheet for Training course on Industrial Wastewater Treatment Techniques**

< Country Name > \_\_\_\_\_ < Participant's Name > \_\_\_\_\_ < Organization/Department to which the Participant belongs > \_\_\_\_\_

Course Objectives	Relevant Subjects	A : Problems you are facing at work or in the community	B : Suspected Causes (of the Problems)	C : Measures Taken in Japan	D : Proposal to Your Own Country
<b>I Basics of Water Pollution Control</b> (to understand the importance of water pollution prevention and environmental administration)	<ul style="list-style-type: none"> <li>● Environmental Administration</li> <li>● Environmental Education</li> </ul>				
<b>II Basic Theory of Wastewater Treatment</b> (to understand the water pollution control processes and acquiring the general concept of wastewater treatment technologies)	<ul style="list-style-type: none"> <li>● Outline of WW Treatment Techniques (Including new techniques)</li> <li>● Pollution Control Processes</li> </ul>				
<b>III~IV Basic Plan-Design and Execution of Treatment Facilities</b> (to acquire techniques in basic planning and design of treatment facilities)	<ul style="list-style-type: none"> <li>● Wastewater Treatment Tests and Selection of the Optimum Treatment Methods</li> <li>● Detailed Designs of Treatment Facilities</li> </ul>				
<b>V Operation/ Maintenance of Treatment Facilities</b> (to understand the operation and maintenance of treatment facilities)	<ul style="list-style-type: none"> <li>● Operation, Maintenance and Survey of Treatment Facilities</li> <li>● Maintenance and Control Techniques</li> </ul>				

Name of Superior Officer \_\_\_\_\_ Designation/Position of superior officer \_\_\_\_\_  
Signature \_\_\_\_\_

## *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 580 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.



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