Annex 1

Country Report

SEWAGE WORKS ENGINEERING AND

STORMWATER DRAINAGE TECHNOLOGY (JFY 2013)

1. Name of the applicant and the country

2. Name of the applicant's organization

3. Address of the applicant's organization

4. Roles and Responsibilities of the applicant's organization

5. Applicant's Job and Responsibility in the organization

6. Organization Chart
Attach an organizational chart of applicant's organization, and circle the section in which the applicant is working.

7. Overview of the Country in terms of Water Environment and Sewerage Systems

(1) General Information.

a) Brief description of geography (1 page)

b) Total population of the country

c) Estimated population with sewers

d)Estimated population with supply water

e) Total population and estimated population with sewers of the five (5) largest cities.

Name of City	Total Population	Estimated Population with Sewers

(2) Provide the following information on the status of the water pollution of rivers, lakes and bays, including the names of sources, rivers, lakes and bays.

a) Sources of pollution

b) Situation of rivers (BOD, SS, etc.)

c) Situation of lakes (BOD, SS, etc.)

d) Situation of bays (BOD, SS, etc.)

(3) Please provide the following information on the climate in your city/town/village.

a) Average annual rainfall ( ) mm/year

b) Average frequency of rainfall ( ) times/year
c) Maximum hourly rainfall ( ) mm/hour (in year of)
d) Maximum 10-minute rainfall ( ) mm/10 min. (in year of)

8. Present Status of Sewage Works

(1) Present status of sewerage and sanitation

(2) Water Quality Preservation Principle and/or Strategy in the country
(Master Plan, Laws and Regulation, Related organization, Role and Responsibility of Federal Government, State Government, Municipality, and Other Related Organizations etc.)

(3) Present status of sewerage systems

a) Total number of Sewage Treatment Plant (STP) in your country

b) Adopted Wastewater Treatment Process (Lagoon, Aerated Lagoon, Oxidation ditch, Trickling Filter, Activated sludge process, etc.) and the number of STP in each process.

c) Please describe five (5) largest (or typical) treatment plants in your country.

1) Name and location of the plants
Please attach the maps.

2) Size
i) Daily Wastewater Flow (m3/d)
ii) Domestic Wastewater Flow (m3/d)
iii) Pollution Equivalents
iv) Industrial Wastewater Flow (m3/d) and Its Main Industry

3) Sewage Collection System
i) Combined system
ii) Separate system
(including the case where open channels are used for stormwater runoff drainage)
iii)Others

4) Wastewater Treatment Process
Please attach the flow diagram for sewage treatment.

5) Sludge Treatment Process including final disposal

6) Influent and Effluent Water Quality (BOD, COD, SS, T-N, T-P, etc.)

7) Regulation of Effluent Water Quality (pH, BOD, S-BOD,COD, SS, T-N, T-P, Fecal coliform, Heavy Metal, etc.)

8) Where is the effluent discharged to (after treatment)?

9) Is treated effluent reclaimed and reused?
i) Please answer Yes or No.
ii) If "yes," describe the details as well as purposes.

(4) Financial System Regarding Sewage Works (Construction Cost, Maintenance Cost, User Charge, Subsidy from Central or State Government, General-account Budget in the City, etc.)

(5) Present Status of Industrial Wastewater, Type of Industry, Regulation, Industrial Wastewater Treatment

9. Stormwater Drainage Condition in the Capital, or the City in which you are working

(1) Frequent flooding region/area and frequency of inundation (Please attach the maps)

(2) Drainage area where stormwater runoff is collected and discharged to stormwater sewers and channels.

(3) Total length of sewers
less than 600 mm dia. ( ) km
600-1,500 mm dia. ( ) km
larger than 1,500 mm dia. ( ) km

(4) Number of pumping station

(5) Financial System Regarding Stormwater Drainage (Construction Cost, Maintenance Cost, Subsidy from Central or State Government, General-account Budget in the City, etc.)

(6) Main countermeasures for flood prevention in your country

10. **Tentative Theme of Improvement Plan** (within 3 pages)

Please describe following items regarding your tentative theme of the Improvement Plan

a) Title
b) Current Situation and Background
(Necessity and justification, reasons why you chose the topic as priority, etc.)
c) Objectives and goal
(Describe the before and after (expected situation) by implementation of improvement plan).
d) What you expect in this course

Annex 2

Contents of the Program in Japan

The curriculum of the course is as follows

Pre-course Program

Briefing
General Orientation
Program Orientation
Courtesy Call at the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan Sewage Works Agency and Sewage Business Management Center

General Orientation

1. Japanese Custom
2. Japanese Conversation
3. History and Culture of Japan
4. Education in Japan

● **Lecture & Observation**

I Basic Concept

1. Introduction to Sewage Works Engineering
2. Special Lecture
3. Water Environment Management
4. Wastewater Treatment and Water Supply
5. Outline of Water Resources Management in Japan
6. Development of Technologies in the field of Sewage Works

Case Study Tutorial Program

Case Study Presentation by Participants

II Administration and International Cooperation

1. Finance of Sewage System in Japan
2. Official Development Assistance of the MLIT in the field of Sewerage and Drainage
3. Sewerage System Management by Sewerage Law
4. Project Formulation to Preparatory Study
5. Public Relations and Awareness Raising of Sewerage System
6. Special Lecture

Country Report Presentation by Participants

III Planning

1. Basic Planning of Sewerage
2. Comprehensive Basin -Wide Planning
3. Strategic Approach for Urban Drainage and Flood Measures Control under Rapid Urbanization
4. Prediction of Stormwater Runoff and Inundation
5. Invitation for Sewer Network Simulation Models
6. Stormwater Drainage Plan

【Design Practice】
Design Practice of Basic Planning

IV Piping

1. Design of Sewers
2. Sewer Construction
3. Special Pipe-Laying Methods
4. Planning and Design of Sewer Facilities
5. Construction of Sewer Facilities

【Design Practice】
Design Practice in Storm and Sanitary Sewers

V Treatment Plant

1. Basics of Biological Wastewater Treatment
2. Design of Wastewater Treatment Facilities
3. Sludge Treatment Process

【Design Practice】
Design Practice in Wastewater and Sludge Treatment Process

VI Advanced Wastewater Treatment

1. Advanced Wastewater Treatment Process
2. Wastewater Reuse and Disinfection

VII Industrial Wastewater

1. Industrial Wastewater Regulation in Public Sewerage System

VIII Urban Stormwater Drainage System

1. Urban area flooding and its Countermeasure in Japan
2. Design of Pumping Stations (Basic Design)
3. Design of Pumping Stations (Facilities)

IX Maintenance

1. Application of Sewerage Information System for Flood Control
2. Comprehensive Flood Control in Urban Areas
3. River Maintenance in Osaka City
4. Urban River Management

【Observation/Practice】
1. Water Quality Analysis

X Others

1. Lagoon and Aquaculture
2. Design of Lagoon
3. Roles of Sewage Treatment in the field of Public Health
4. On Site Treatment
5. Public Announcement

【Study Tour : Kyusyu】

1. Munakata Treatment Center
2. Fukuoka Treatment Plant
3. Hinode-Suidou Kiki Co.,Ltd
4. Park Wastewater Treatment Plant

【Field Trip : Saitama】

1. Arakawa Wastewater Reclamation Plant

● **Closing Program**
1. Evaluation of the Training
2. Closing Ceremony

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.