Knowledge Co-Creation Program
(Group & Region Focus)

GENERAL INFORMATION ON

Capacity Building towards

Air Quality Management

課題別研修「大気環境管理に向けたキャパシティビルディング」

JFY 2021

NO. 202003231J001

Phase 1: December 6th, 2021 ~ December 10th, 2021
Phase 2: January 31st, 2022 ~ March 3rd, 2022

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)'

In the Development Cooperation Charter which is 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 recent urbanization, economic growth and industrialization in developing countries, human-caused emissions of air pollutants from stationary sources including manufacturing facilities and mobile sources such as automobiles have kept increasing. Such impacts on atmospheric environment cause human health damage and affect the global ecosystem. Air pollutants include primary pollutants (PM_{10}, SOx, NOx, etc.) locally generated by pollution sources or transported from other areas, and secondary pollutants (photochemical oxidant, etc.) which were formed through physical/ (photo) chemical reactions in the atmosphere.

According to the "OECD Environment Outlook: 2050" published in 2012, the premature death due to ozone and PM (Particulate Matters) is estimated to keep on growing mainly in the Asian developing countries, which highlights the necessity of countermeasures against air pollution in these countries.

Japan has experienced severe environmental pollutions, such as "Yokkaichi Asthma" caused by SOx and air pollutions due to automotive gas emissions in densely populated areas in the 1950s and 1960s. Based on these past experiences, lectures and discussions on the methodologies of air quality monitoring, emission inventories, dispersion modeling, and so on will be conducted. In addition, this program offers an opportunity to share the rich experiences of Japanese air quality management with participating countries through lectures/discussions and site visits.

For what?

The aim of this program is to contribute to the improvement of air quality management in the participating countries especially by introducing air quality management tools such as air quality monitoring, emission inventory, and multiscale air quality modelling.

For whom?

Technical officials responsible for air pollution control, especially those in a position to analyze the air quality in central/local government, research institutes, or other public organizations. Participants are expected to utilize the knowledge gained through the program to improve the air quality management in their home countries.

II. Description

1. Title:

Capacity Building towards Air Quality Management (202003231J001)

NOTE: This program is conducted ONLINE.

2. Program Period:

Phase 1: December 6th, 2021 to December 10th, 2021

Phase 2: January 31st, 2022 to March 3rd, 2022

In the context of the COVID-19 pandemic, please note that there is still a possibility that the program period will be changed, shortened, or the program itself will be cancelled.

*** Participants from last year's program will join in from Phase 2 (6 members).**

3. Target Countries:

Chile, Egypt, Iran, Kosovo, Moldova, Mongolia, Pakistan and Viet Nam

4. Program Objective:

Through the program, Participants will be able:

(1) to acquire the knowledge of air quality management system,
(2) to understand the benefits of various tools for air quality management (e.g. air quality monitoring, multiscale air quality modelling, and emission inventory),
(3) to examine applicability of various tools as air pollution countermeasures, and
(4) to formulate an Action Plan for specific issues relating to air quality control.

5. Overall Goal:

Participants contribute to improve air quality management in their own countries (by making the best use of the knowledge and techniques acquired in the Program).

6. Eligible / Target Organization:

Central/Local government, research institute, public organization responsible for air quality management

7. Total Number of Participants:

8 participants (*14 participants for Phase 2 (with 6 members from FY2020 program))

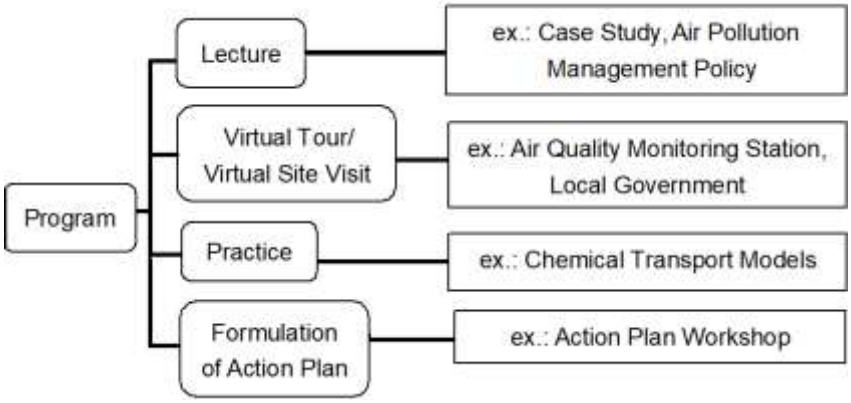
8. Language to be used in this program:

English

9. Contents:

This program consists of four components.

(See the diagram on the next page.)


Program
Lecture
ex.: Case Study, Air Pollution Management Policy
Virtual Tour/ Virtual Site Visit
ex.: Air Quality Monitoring Station, Local Government
Practice
ex.: Chemical Transport Models
Formulation of Action Plan
ex.: Action Plan Workshop

Schedule of the Program

(1) Preliminary Phase in home country	
Making a Country Report	Please prepare a Country Report according to ANNEX Ⅰ and Ⅱ

(2) Schedule of Phase 1

*Contents subject to change

Day	**Subject**
6th December, 2021	- Opening ceremony - Program orientation - Air Pollution Control Policy in Japan Its History and Lessons
7th December, 2021	- Introduction to Atmospheric Monitoring - Atmospheric Chemistry Transport Model - Source Analysis Methods - Emission Inventory
8th December, 2021	- Environmental Impact Assessment (EIA) - Monitoring Methods for PM10 and PM2.5
9th December, 2021	- Photochemical Air Pollution Mechanism and Countermeasures
10th December, 2021	- Program orientation for next phase

(3) Schedule of Phase 2

*Contents subject to change

Day	**Subject**
31st January, 2022	- Opening ceremony - Program orientation - Workshop for drafting action plan
1st -2nd February, 2022	- Country Report Presentation
3rd -4th February, 2022	- Creating Action Plan
7th February, 2022	- Atmospheric Environment Administration in Japan
8th February, 2022	- Environment Protection Measures in Kawasaki City - Automobile Exhaust Gas Measurement Station, General Environmental Atmosphere Measurement Station

9th-10th February, 2022	- Presentation on the draft action plan(1)
14th – 16th February, 2022	- Creating Action Plan
17th February, 2022	- Lecture of Atmospheric Chemical Transport Model - Case Study and Demonstration of Atmospheric Chemical Transport Model
18th February, 2022	- Source Analysis Methods - Emission Inventory
21st -22nd February, 2022	- Presentation on the draft action plan(2)
23rd -25th February, 2022	- Creating Action Plan
28th February – 1st March, 2022	- Utilization of Monitoring Results for PM10 and PM2.5 - Introduction of Atmospheric Measurement Equipment
2nd March, 2022	- Presentation on the action plan(1)
3rd March, 2022	- Presentation on the action plan(2) - Evaluation meeting - Closing Ceremony

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations:

(1) This program is designed for organizations intend to address specific issues related to air quality management. Participating organizations are expected to identify specific issues before participating in the training course in order to fully utilize this opportunity.
(2) This program is enriched with contents developed by collaboration with relevant prominent organizations in Japan. It focuses on air quality management tools (e.g. air quality monitoring, multiscale air quality modelling, emission inventory, and etc.) and participants are highly recommended to have some knowledge of these tools before attending this program.
(3) Participating organizations are expected to make due preparation before the participants participate in this program.
(4) Participating organizations are also expected to support the implementation of the action plans by the program participants and to utilize the knowledge/skills which participants have gained in this program.

2. Nominee Qualifications:

（1）Essential Qualifications

Applying organizations are expected to select nominees who meet the following qualifications. Applicants should:

(i) **NOMINATION**:
be nominated by the government to which they belong,

(ii) **EXPERIENCES:**
be technical officials responsible for air quality management and air pollution control in central/ local government, research institute, or public organization with more than 3 years of experience (in principle),

(iii) **ENGLISH:**
have sufficient skill of spoken and written English,

(iv) **EDUCATION:**
be university graduates or those who possesses equivalent technical qualification in this field,

(v) **AGE:**
be under 45 years of age (in principle),

(vi) **HEALTH:**
be in good health, both physically and mentally, to participate in the program.

（2）Recommended Qualifications

Gender Consideration:

JICA is promoting Gender equality. Women are encouraged to apply for the program.

3. Required Documents for Application

(1) **Application Form:**

The Application Form is available at the JICA office（or the Embassy of Japan）in respective countries. The Application Form should be typewritten in English.

(2) **Photocopy of passport:**

Please attach to the Application Form if the applicant possess their own. If not, the applicants are requested to submit a photocopy as soon as they obtain it (If passports are not available, any other Official IDs.).

**Photocopy should include the followings:*

Name, Date of birth, Nationality, Sex, Passport number and Expiry date.

（3）**Nominee's English Score Sheet**:

Please attach a photocopy, if the applicants have any official documentation of English ability. (e.g. TOEFL, TOEIC, IELTS).

4. Application and Selection Procedures

(1) Submission of Application Form

Closing date for Application Documents: **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 JICA Yokohama Center by **8th November 2021.**

(2) Selection

After receiving the documents 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 JICA Yokohama, which organizes this Program.

Selection shall be made by JICA Yokohama in consultation with the implementing partner in Japan based on submitted documents according to qualifications.

Organizations intending to fully leverage the opportunities provided by the Program will be favorably regarded in the selection process. 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 shall be made by the respective country's JICA office (or Embassy of Japan) to the respective Government by **17th November, 2021.**

(4) Document(s) to be submitted

<For Accepted Applicants only>

・Country Report

Only accepted applicants are required to prepare a Country Report (detailed

information is provided in the ANNEX Ⅰ and ANNEX Ⅱ). The Country Report should be submitted by e-mail to <yictt1@jica.go.jp>, **by 3rd December, 2021**.

***Please be sure to type the e-mail title adding "202003231J001, ICR" at the beginning.**

・Formulation of Action Plan (during the program)

During the program, all participants are required to formulate an Action Plan. Please refer to the detailed information (see ANNEX Ⅲ). Explanation will also be made at the program orientation held on the last day of the online program.

・Understanding our Active Learning Approach

JICA has introduced Active Learning Approach to materialize knowledge co-creation. Please read ANNEX IV in advance.

5. Conditions for Attendance

Participants should:

(1) to strictly adhere to the program schedule.

(2) not to change the program topics.

(3) not to record or share the online contents without the permission of JICA and its implementing partners.

(4) to inform program coordinator of any absence in advance.

[Conditions on deliverables by participants]

(5) not to put JICA logo on the Inception Report and the Action Plan.

(6) to accept that JICA does not necessarily represent any statements written in the participants' deliverables.

(7) to put the participant's name, date, and page number on the Inception Report, Action Plan, and related materials.

IV. Administrative Arrangements

1. Organizer:

Name: JICA Yokohama
Contact: Ms. HORIKOSHI Kyoko (yictt1@jica.go.jp)

2. Implementing Partner:

Name: Ministry of the Environment
URL: http://www.env.go.jp/en/
Contact: Address: 1-2-1, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8975, Japan

Name: Japan Environmental Sanitation Center (JESC)
URL: http://www.jesc.or.jp/en/index.html
Contact: Address: 10-6, Yotsuyakami-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, 210-0828, Japan

3. Expenses for Online Program:

Depending on the Participants' location and condition, JICA may consider to provide the following fees: Daily Allowances, Accommodation fee, and Transportation fee, etc.
(*For more detail, please contact the JICA Office in charge of each country)

V. Other Information for Online Program

1. On-demand delivery

Lectures will be delivered on demand in Phase1 and 2. We request the participants to take lectures on the schedule date and upload some assignments by the designated date.

In this program, the distribution of documents and materials will use the cloud storage service, so details will be announced separately.

2. Live connections

To promote bilateral communications between the lecturers and participants or among the participants, several live sessions are scheduled during Phase 2. Online conferencing tools will be used for these sessions (the tool will be informed after acceptance). All participants are requested to prepare a camera, speakers, and a microphone. It would be better to have a PC with them built in.

ANNEX I

Country Report
JFY 2021

Please follow the instruction below for your **Country Report**.

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1. Objective:

This document will provide an overview of the air quality management situation in the Participant's countries. Please describe as precise as possible unless related data is unavailable.

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2. Contents: Please fill the contents shown below.
3. Length: 1 to 2 pages
4. Data Format: Microsoft Word
5. Submission: **22nd January 2021**
6. Submission destination: JICA Yokohama by e-mail (Horikoshi.Kyoko@jica.go.jp)

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7. Point to keep in mind:

The Country Reports will be important information source to enable JICA's Cooperation activities be more effective for the program participants' countries. During the Program, the Participants will be asked whether they allow JICA to refer the country reports contents for JICA's relevant studies and operations in the future. The Country Reports submitted from Applicants not accepted by JICA will be safely deleted for a copyright concern and shall not be used by JICA.

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Country Report

Name: Country: Organization / Your position:

< Your Organization>

1. Name of your organization and its main duty

2. Your organization chart (attach in a separate sheet if necessary)

3. Budget and the number of staffs related to air quality management in your organization

< Air Quality Management >

4. Air quality management legislations and their contents (attach laws/regulations in a separate sheet if necessary)

5. Role of central government and local government for air quality management respectively (explain here or in ANNEX II)

6. Ambient air quality standards and exiting problems (explain here or in ANNEX II)

7. Measurement of air pollutants and monitoring systems for air quality (by whom? how? and how often?) (explain here or in ANNEX II)

8. Usage of air quality management tools such as:
- Atmospheric dispersion models;
- Emission inventory;
- Particulate Matter (PM10 and PM2.5) speciation and
- Receptor models.

< Issues surrounding Air Quality >

9. Historical background of air quality control in your country

10. Present status of air quality in your country (in big cities and in country side)

11. Main sources of air pollution (what kind of industry? what kind of transport?) (explain here or in ANNEX II)

12. The number of complaints and health damage (ex. number of patients) caused by air pollution.

13. Challenges for implementing air quality management

< Issues to be Focused on >

14. Idea of topics you would like to describe in your Action Plan (see the Annex III)

Important Notice for Your Presentation

- The accepted participants are expected to deliver a 10-minute presentation based on the Country Report in the first week of this program.
  (The format will be informed with the Notice of Acceptance.)
- In the presentation, please briefly explain the background information on your country, your organization and your job. Please put your emphasis on the problems your organization is facing, and possible solutions for that.
- The important part of the presentation is to share your experiences with the Japanese experts and participants from other countries.
- Country Report is an important information source for JICA as well as other participants. JICA might refer to the content of your Country Report in JICA's relevant studies.

ANNEX II

1. Jurisdictions of Central and Local Government in Air Quality Management Administration

Please clarify the roles of central government, regional government (province or state) and local government (municipality) for the regulation of air pollution in your country. (Please fill in the check mark on the responsible organization.)

	Responsibility of Administration	Central Government	Regional Government (Province or State)	Local Government (Municipality)	Other Organization (Public or Private)
Strategy and plan for air quality management and pollution control	Designation of responsibilities among authorities and Institutional arrangement				
	Preparation of strategy and plan for air quality management and pollution control				
	Preparation of related analytical works and tools for decision making such as Emission Inventory and Simulation Modeling				
Legal and regulatory framework	Preparation of Law and Regulation				
	Preparation of Guideline				
	Setting of related Standards				

Ambient air quality monitoring	Preparation of Ambient Air Quality Monitoring Plan (National and Sub-National Level)				
	Installation of Equipment for Ambient Air Quality Monitoring (National and Sub-National Level)				
	Related laboratory works for Ambient Air Quality Monitoring (National and Sub-National Level)				
	Data evaluation of Ambient Air Quality Monitoring (National and Sub-National Level)				
	Data dissemination and utilization of Ambient Air Quality Monitoring (National and Sub-National Level)				
Emission source monitoring	Emission source monitoring of stationary sources such as power plants, factories and incinerators				
	Emission source monitoring of mobile sources and related fugitive sources such as roads dust and gas stations				
	Emission source monitoring of area sources and others such as open burning and households emissions				

Emission control (voluntary or mandated) , inspection, administrative guidance and law enforcement	Stationary sources such as power plants, factories and incinerators				
	Mobile sources and related fugitive sources such as roads dust and gas stations				
	Area sources and others such as open burning and households emissions				

2. Please fill in Ambient Air Quality Standards, currently measured values and countermeasures to achieve the Standards in your country.

Fill in the Current Annual Average with the value of your country or the area under your direct control.

Year:_____ Country:_____ Area:_____

	Unit (ppm or mg/m^3)	Standard Value		Current Annual Average Values Measured	Existing Problems
		1 hour	1 day		
Sulfur Dioxide					
Nitrogen Dioxide					
Photochemical Oxidant					
Carbon monoxide					
Suspended Particulate Matter such as TSP, PM10, PM2.5					
Others					

3. Please indicate status of emission standards in your country (and area if applicable) including controlled specific air pollution sources and pollutants.

Year:_____ country:_____ area:_____

Targeted Air Pollution Sources	Title of Emission Standards and/or Related Laws and Regulations	Controlled Air Pollutants (such as TSP, PM10, PM2.5, SO_2, NO_x, CO and others)	Current Status of Compliance
Stationary Sources (such as power plants and factories):			
Mobile Sources (such as auto vehicles and vessels):			
Others:			

4. Please fill in the number of main air pollution sources except motor vehicle pollution sources by facility type, and describe countermeasures against air pollution from those facilities in your country or the area under your control directly.

Year:_____ country:_____ area:_____

Facilities	Fuel					Countermeasures
	Coal	Crude Oil	Coal Oil	LPG	Other	
Power stations						
Steelworks						
Petrochemical plants						
Cement plants						
Mining and manufacturing industries						
Medium and small-sized industrial complex						
Landfill sites						
Cooking and heating at households						
Others						

5. Please fill in the number of motor vehicles in operation by the fuel type, and describe general countermeasures against air pollution from motor vehicles in your country.

	Passenger vehicles	Buses	Trucks	Two-wheeled vehicles	Three-wheeled vehicles	Special category vehicles	Other	Total	Countermeasures
Lead gasoline									
Diesel oil									
LPG									
CNG									
Methanol									
Electric									
Other									
Total									

ANNEX III

<For accepted applicants only>

・Formulation of an Action Plan during the Program :

All participants are required to formulate an Action Plan during the Knowledge Co-Creation Program and make its presentation **at the end of the program**.

Please pick up one topic to tackle from issues that was mentioned in the country report of the participant, and formulate an Action Plan, by utilizing the knowledge gained through the Program. Try to formulate the plan in consideration of the existing human and financial resources in the participant's organization in an efficient and effective way as possible.

<Contents (Recommended)>

a. Theme
b. Background (including problem tree analysis)
c. Goals and Objectives
d. Direct and indirect beneficiaries
e. Activities
f. Implementation schedule
g. Responsible agencies and their roles
h. Strategies and tactics for implementation
i. Monitoring and evaluation
j. Budget and resources

Typewrite on the A4 sized paper and also prepare presentation materials.
More detailed guidance is provided after your arrival in Japan.

※ Like Country Reports, Action Plans is important information source for JICA. to enable JICA's cooperation activities be more effective for the Program Participants' countries. During the Knowledge Co-Creation Program, the Participants will be asked whether they allow JICA to refer the Action Plan contents for a JICA's relevant studies and operations in the future.

ANNEX IV

≪*For Knowledge Co-Creation* – Active Learning≫

For Your Information

1. 'JICA Knowledge Co-Creation (KCC) Program'

In the Development Cooperation Charter which is 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 each other and grow and develop together." We believe that this 'Knowledge Co-Creation Program' will serve as a center of mutual learning process.

2. Approach for Knowledge Co-Creation – Active Learning

For "Knowledge Co-Creation", all the participants are expected to actively participate in lectures, discussions or field trips during the program. In order to promote interactive and proactive learning among participants, specific learning method called "Active Learning" is adopted in KCCP. There are three specific approaches focusing on "output" and "collaboration" to achieve Knowledge Co-Creation.

(1) Sharing Time – *Verbal Output*

Share what you learned and your idea as well as learn from other participants.

★How?

At the end of each day, make a pair and share what you have learnt and ideas gained during the lecture or activities (within 1 minute/person).

(2) Weekly Feedback Sheet – *Manual Output*

Summarize what you learned as well as give feedbacks for lecturers and JICA.

★How?

Write out what you have learned and your findings through each week, and share them among the participants and lecturers.

(3) Today's Leader – *Collaboration*

Be the leader of participants and representative of your countries.

★How?

One of the participants will be assigned as a leader for each day, and lead the program.

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 and 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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Kanagawa 231-0001, Japan
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