



# Knowledge Co-Creation Program (Group & Region Focus)

## GENERAL INFORMATION ON

**Capacity strengthening for multi-media mercury monitoring  
(4M)**

**課題別研修「多媒体水銀モニタリング能力向上」  
JFY 2017**

**NO. J17-04115 / ID. 1784914**

**Course Period in Japan: From 2<sup>nd</sup> to 27<sup>th</sup> October, 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 (KCC) Program’ as a New Start

In the Development Cooperation Charter which was released from the Japanese Cabinet in February 2015, it is clearly pointed out that “In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with developing countries in which both sides learn from each other and grow and develop together.” We believe that this ‘Knowledge Co-Creation Program’ will serve as a center of mutual learning process.

# ***I. Concept***

## **Background**

Mercury is ubiquitous metal that, while naturally occurring, has broad uses in everyday objects and is released to the atmosphere, soil and water from a variety of sources. Human health is endangered by exposure to mercury. The toxicity of mercury is depending on its chemical form. Japan has experienced “Minamata Disease”, a poisoning disease of central nervous system caused by methylmercury compound produced as by-product in the process of manufacturing acetaldehyde. From 1950s to 2001, 2,955 patients have been certified in Minamata and other cities. The total compensation payment amounts to approximately 1.5 billion dollars by March 2001.

In Japan, in order to prevent mercury pollution in the environment and to achieve the preservation of human health protection and living environment, a variety of countermeasures based on environment-related legislation have been promoted. The monitoring networks of air, public/ground water and soil content are in place. By the chemical release and transfer amount notification system based on the law (PRTR system), business which deal with mercury and its compounds by a chemical substance, are required especially to report the emission amount to the environment and the movement amount included in waste. Moreover, a standard for Alkyl mercury has been established as "Not detectable" in environmental standards and emission standards.

Minamata Convention on Mercury (hereafter referred to as Minamata Convention) is a global convention adopted in 2013 in Minamata City. The momentum was generated after UNEP published its Global Mercury Assessment 2002 and had been kept until the adoption, including the 25th UNEP Governing Council (GC25) agreement. The Japanese government, the presidency holder, expressed MOYAI Initiative which included various supports targeting the developing countries for early entry into force of the Convention and delivery information on preventing pollution and environmental restoration from Minamata City to the world. In concert with it, “MINAS” (MOYAI Initiative for Networking, Assessment and Strengthening) program, also promoted by the Japanese government, shall support the developing countries to appropriately implement the Convention, utilizing Japan’s experience and technologies of the mercury control.

In addition to that, the international mercury control initiative which includes developing the environmental monitoring network has been in discussion among the Japanese Government, the United States government, and Global Environmental Facility (GEF) as a joint cooperation program.

Japan International Cooperation Agency (JICA) has been provided the technical cooperation on the matter mainly in Latin American Countries since early 1990s, and since 2014, has also started a Knowledge Co-Creation Program, i.e., Capacity Building for Ratification of the Minamata Convention on Mercury.

As a part of MOYAI initiative, JICA provides this Knowledge Co-Creation Program “Capacity strengthening for multi-media mercury monitoring (4M)” which would develop the mercury monitoring capacity in the environment, that is, one of the most basic and important issue of the mercury control.

#### **For what?**

This program aims to strengthen capacity for multi-media mercury\* monitoring in participating countries.

**\*Notice: Target mercury of this program is “Inorganic mercury”(NOT “organic mercury”)**

#### **For whom?**

This program is offered to technical staff working for the laboratory and other related organization of monitoring and chemical analysis for mercury control in environmental and bio-media.

#### **How?**

Participants shall have opportunities to enhance/develop their capacity in analytical techniques as well as solving institutional issues through lectures, field visits and exercises.

The analytical techniques covered in the program will be sampling, analytical methods and quality management (QM) of measurements for mercury monitoring in environmental and bio-media. Knowledge of Japan shall be shared in solving institutional issues, is maintenance of instruments, the planning method of monitoring and the utilizing method of the monitoring data and so on.

## ***II. Description***

- 1. Title (J-No.): Capacity strengthening for multi-media mercury monitoring (4M) (J17-04115)**
- 2. Course Period in JAPAN**  
From 2nd to 27th October, 2017
- 3. Target Regions or Countries**  
Brazil, Burkina Faso, Indonesia, Malaysia, Nicaragua, Palau, Philippines, Thailand, Uruguay and Viet Nam

**4. Eligible / Target Organization**

This program is designed for a public research institute, public research institute and/or inspection organization which conducts monitoring and chemical analysis of national mercury control in environmental and/or bio-media, for implementation of the Minamata Convention.

**5. Course Capacity (Upper limit of Participants)**

10 participants

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

English

**7. Course Objective:**

To understand the necessity and issues for introducing the proper monitoring system of mercury in participating countries through the training of the instruments and tools for mercury monitoring and analysis, the analytical methods, Standard Operating Procedure and quality management (QM), etc.

**8. Overall Goal :**

The capacity of analytical techniques and laboratory management necessary for more functional mercury monitoring is enhanced.

**9. Expected Module Output and Contents:**

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

<p><b>(1) Preliminary Phase in a participant’s home country (May to September, 2017)</b> Participating organizations make required preparation for the Program in the respective countries.</p> <p>-Preparation and submission of Inception report and Questionnaire</p>
--

<p><b>(2) Core Phase in Japan (From 2nd to 27th October, 2017)</b> Participants attend the Program implemented in Japan.</p>		
Expected Module Output	Subjects/Agendas	Methodology
<p><b>Module 1</b> To understand the current situation and challenges with analytical techniques and laboratory management by means of knowledge exchange among participants and Japanese lecturers</p>	<ul style="list-style-type: none"> <li>- Inception report presentation</li> <li>- Daily review with course leader</li> </ul>	<p>Inception report presentations, Discussions</p>

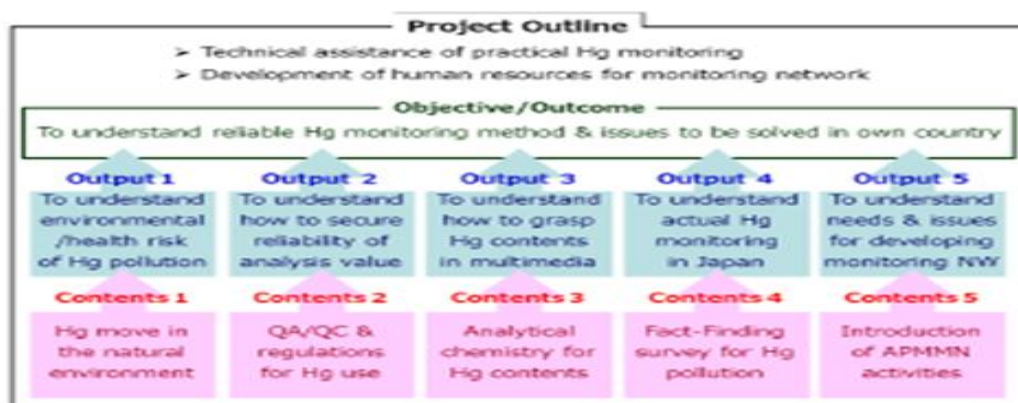
<b>Module 2</b> To explain the risk of mercury on the human health and the environment	<ul style="list-style-type: none"> <li>- Physicochemical properties and toxic mechanism of mercury</li> <li>- Major risk of mercury on the human health and the environment</li> </ul>	Lecture
<b>Module 3</b> To understand and implement proper procedures of sampling, data analysis and processing for ensuring the reliability of the data of mercury in environmental and bio-media	<ul style="list-style-type: none"> <li>- Proper Planning of mercury monitoring</li> <li>- Proper implementation mechanism of mercury monitoring</li> <li>- Principle, procedure and key points in sampling, data analysis and processing for ensuring the reliability of the data</li> </ul>	Lecture Field visit and Exercise
<b>Module 4</b> To be able to understand and implement proper QM(Quality Management) of mercury monitoring in environmental and bio-media	<ul style="list-style-type: none"> <li>- Basic structure of QM for laboratory</li> <li>- Traceability for measurement (including reference material (RM))</li> <li>- SOP creation method (including recording)</li> </ul>	Lecture Field visit and Exercise
<b>Module 5</b> To discuss among participants the cooperative actions and necessary supports for establishing the mercury monitoring network	<ul style="list-style-type: none"> <li>- Daily Review with Course Leader</li> <li>- Planning and Drafting the Action Plan</li> <li>- Presentation of the Action Plan</li> </ul>	Lecture and Discussion

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

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

-Application and implementation of Action Plan back in the participant's country

### <Structure of the program>



### **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 utilize the program 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 program 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: A technical staff working at a laboratory, public research institute and/or inspection agency and engaged in chemical analysis of mercury in environmental and/or bio-media
- 2) Experience in the relevant field: have three to ten year experience
- 3) Language: have a competent command of spoken and written English which is equal to TOEFL iBT 100 or more (This program includes active participation in discussions, which requires high competence of English ability. Please attach an official certificate for English ability such as TOEFL, TOEIC, etc, if possible.)
- 4) 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) Educational background: be a graduate of university(B.Sc.) or equivalent
- 2) Age: between the ages of twenty-five (25) and fifty (50) years

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

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

**(2) Photocopy of passport:** to be submitted with the Application Form, if you possess your passport which you will carry when entering Japan for this program. If not, you are requested to submit its photocopy as soon as you obtain it.

\*Photocopy should include the followings:

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

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

**(4) Inception report and Questionnaire:** to be submitted with the Application Form. Fill in Annex-1 and 2 of this General Information.

#### **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 27<sup>th</sup> July, 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 28<sup>th</sup> August, 2017**.

#### **5. Document(s) to be submitted by accepted participants:**

Before coming to Japan, only accepted participants are required to prepare an Presentation PPT of Inception Report (detailed information is provided in the ANNEX1 "Inception Report".) The Inception Report presentation data should be sent to JICA by 14<sup>th</sup> September, 2017, preferably by e-mail to [Namba.Midori@jica.go.jp](mailto:Namba.Midori@jica.go.jp) and [jicaksic-unit@jica.go.jp](mailto:jicaksic-unit@jica.go.jp)

#### **4. Conditions for Attendance:**

- (1) to strictly adhere to the program schedule,
- (2) not to change the program topics,
- (3) not to extend the period of stay in Japan,
- (4) not to be accompanied by family members during the program,
- (5) to return to home countries at the end of the program in accordance with the travel schedule designated by JICA,
- (6) to refrain from engaging in any political activities, or any form of employment for profit or gain,
- (7) to observe Japanese laws and ordinances. If there is any violation of said laws and ordinances, participants may be required to return part or all of the program expenditure depending on the severity of said violation, and
- (8) to observe the rules and regulations of the accommodation and not to change the accommodation designated by JICA.



## IV. Administrative Arrangements

### 1. Organizer:

(1) **Name:** JICA Kansai

(2) **Contact:** Ms. NAMBA Midori (Namba.Midori@jica.go.jp and jicaksic-unit@jica.go.jp)

### 2. Implementing Partner: Under consideration

### 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 Kansai  
Address: 1-5-2, Wakinohama-kaigandori, Chuo-ku, Kobe, Hyogo 651-0073,  
Japan  
TEL: 81-78-261-0383 FAX: 81-78-261-0465  
(where “81” is the country code for Japan, and “78” is the local area code)

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

### 5. Expenses:

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

- (1) Allowances for accommodation, meals, living expenses, outfit, and shipping,
- (2) Expenses for study tours (basically in the form of train tickets),
- (3) Free medical care for participants who become ill after arriving in Japan (costs related to pre-existing illness, pregnancy, or dental treatment are not included), and
- (4) Expenses for program implementation, including materials.

For more details, please see “III. ALLOWANCES” of the brochure for participants titled “KENSU-IN GUIDE BOOK,” which will be given before departure for Japan.

### 6. Pre-departure Orientation:

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

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

1. Participants who have successfully completed the program will be awarded a certificate by JICA.
2. For the promotion of mutual friendship, JICA Kansai encourages international exchange between JICA participants and local communities, including school and university students as a part of development education program. JICA participants are expected to contribute by attending such activities and will possibly be asked to make presentations on the society, economy and culture of their home country.
3. Participants are recommended to bring laptop computers for your convenience, if possible. During the program, participants are required to work on the computers, including preparation of Action Plan(AP), etc. Most of the accommodations have internet access. Also, there is a computer room in JICA Kansai where 14 desk-top computers are available with internet access.
4. Allowances, such as for accommodation, living, clothing, and shipping, will be deposited to your temporary bank account (opened by JICA) 2 to 5 days after your arrival in Japan. It is highly advised to bring some cash / traveler's check in order to cover necessary expense for this period.
5. It is very important that some of your currency must be exchanged to Japanese Yen at any transit airport or Kansai International Airport (KIX) in Osaka, Japan soon after your arrival. It is quite difficult to exchange money after that, due to limited availability of facility or time during the program.

## **VI. ANNEX 1**

### **Inception Report**

This Inception report is considered to be very useful not only for adjusting the details of course items to fit for the needs of each participant but also for understanding the different situations among the participating organizations/countries. The volume may be no more than 10 pages of slide or 1,500 words.

**This Inspection Report is required to be submitted with the Application Form.**

Required Contents in Inception Report

- (1) KCC program course's name/ your name and email address
- (2) Organization's name/ your professional job status
  - \* Please attach an organizational chart to which you belong, and indicate the division to which you belong.
- (3) Detailed description of your duties
- (4) Current situation in your country regarding monitoring system of mercury
  - \* Please investigate and report the existence of practical programs for mercury monitoring and cooperative relationships among stakeholders such as ministries, local authorities and industry, etc.
  - <An example of items>
    - Current situation of monitoring system of mercury
      - ✓ Situation of pollution and damages caused by mercury
      - ✓ Systems and methodologies of national mercury control
        - Legislative framework
        - Ratification and implementation status of Minamata Convention
        - Administrative systems
        - Inter-ministerial coordination
        - Rules of local government/authority
        - Enforcement
        - Enlightenment or education activities for stake holders (industries, citizens, etc.)
        - Others
    - Challenges, and way forward

Furthermore, the presentation of the inception report will be carried out at the beginning of the course period. As previously mentioned in III-5, **Please submit your presentation with Microsoft Power Point slides no later than September 14, 2017, via email to <Namba.Midori@jica.go.jp>.**

Presentation of your inception report

(1)Format:

- Please modify your inception report to a presentation file using Microsoft PowerPoint®.
- Please include pictures and maps for easy understanding.

(2)Number of slides: no more than 10 slides.

(3)Language: English (English-Japanese interpretation)

(5) Presentation time: 10~15 minutes

(6)Others:

- Please bring your presentation data saved in the USB (Flash Drive).

## VI. ANNEX 2

### Questionnaire

#### Questionnaire

This questionnaire, mainly focusing on your personal capacities, will be used for the selection.

Submission: **To be submitted together with your Application Form.**

Note: Application without this questionnaire shall not be duly considered for selection.

#### 1. Achievement/Experience

Q-1 Do you have any experiences of participation in any international/foreign aid assistance program?

Yes:

(please note the summary (countries, name of program, contents))

No:

#### 2. Special knowledge

Q-1 Do you have any experience of chemical analysis/testing laboratory works?

Yes:

mercury

heavy metals (except mercury)

other chemicals: please note the target compounds

No:

Q-2 Do you have basic knowledge of handling and safety management for chemical reagents? (chemicals, infectious samples, MSDS, etc.)

Yes:

No:

Q-3 Are you doing mercury analysis in your country now?

Yes:

environmental (ambient air, water, soil/sediment, others)

human-bio (blood, urine, hair, nail, others)

biota (fish and shellfish)

others:

please note( )

No:

Q-4 Please list the measuring instruments for mercury analysis in your laboratory / organization (if any)

Instrument Name	Manufacturer	Model Number	Condition (e.g., new, good, poor)	What Analytical manual /Method are used?

Q-5 Dose your laboratory/organization have any accreditation by ISO/IEC 17025?

Yes:

(please note: method name or identification number, target compounds, year of accreditation)

No:

Q-6 Please note the method of calibration for mercury testing (apparatus)

Q-7 Do you use RM/CRM for each sample media?

Yes:

(please note the name of RM/CRM with medium name)

No:

### 3. General information for mercury Convention

Q-1 Are you familiar with the Minamata Convention on Mercury?

Yes:

No:

Q-2 (if Q-1 : Yes) Are you related to any works of the Minamata Convention on Mercury?

my responsibility

No

other:

(please note the relationship between you/your organization and the Minamata Convention)

### 4. KCC program

#### 4-1 Contents of your interest

Q-1 please note the contents that you want to study in this program

(multiple choices allowed)

law/convention

basic scientific information of mercury (physicochemical property, toxicity, human risk)

sampling/pretreatment/measurement technique

other: please note( )

#### 4-2 Target

Q-1 Target medium you want to study in this program

environmental (ambient air, water, soil/sediment, others)

human-bio (blood, urine, hair, nail, others)

biota (fish and shellfish)

others (please note)

4-3 Sampling

Q-1 Do you want to study on sampling?

Yes:

No:

5. Request for this program (priority contents, if you have)

Please note ( )



## ***For Your Reference***

### **JICA and Capacity Development**

The key concept underpinning JICA operations since its establishment in 1974 has been the conviction that “capacity development” is central to the socioeconomic development of any country, regardless of the specific operational scheme one may be undertaking, i.e. expert assignments, development projects, development study projects, Knowledge Co-Creation programs (until 2015, so called “training”), JOCV programs, etc.

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

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

### **Japanese Development Experience**

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

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

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

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



***CORRESPONDENCE***

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

**JICA Kansai International Center (JICA Kansai)**

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

TEL: +81-78-261-0383 FAX: +81-78-261-0465