



Knowledge Co-Creation Program (Group & Region Focus)

GENERAL INFORMATION ON

KNOW-HOW OF MONOZUKURI AT JAPANESE
MANUFACTURING SITE

-PRODUCTIVITY IMPROVEMENT AND

FACILITY MAINTENANCE MANAGEMENT-

課題別研修 「日本のモノづくり現場のノウハウ－生産性向上と設備管理－」
JFY 2017

NO. J1704310 / ID. 1784844

Course Period in Japan: From October 22, 2017 to December 7, 2017

This information pertains to one of the JICA Knowledge Co-Creation Program (Group & Region Focus) of the Japan International Cooperation Agency (JICA), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

‘JICA Knowledge Co-Creation Program (KCCP)’ as a New Start

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

I. Concept

Background

People of developing countries and emerging nations seek for knowledge concerning Japan Brand, and the principles and the methodologies of quality control and production improvement for manufacturing (Monozukuri) which have been systematized in the long history of Japan. JICA has also promoted vitalization of private enterprises and local businesses through human resource development in the industries and upgrading the industrial technologies. To develop supporting industries and enhance the competitiveness of small and medium-sized enterprises are some of the most crucial development issues at emerging nations and developing countries and it is also anticipated that they would contribute to the Japanese businesses in their nations where many Japanese companies especially manufacturing industries move into

For what?

In order to improve the productivity of manufacturing companies, this training course aims to develop human resources responsible for dissemination of quality control, productivity improvement and facility maintenance management that are accustomed in Japan.

For whom?

This program is offered to 1) Skill dissemination officers of manufacturing industrial association and 2) Governmental officials in charge of promotion of manufacturing.

How?

With a view to realizing productivity improvement, it is important to have not only specific manufacturing skills but also a holistic production system by effectively coordinating respective technologies. A manufacturing industry's strength can be measured by the prices, the qualities and the delivery time of their products. The business organizations' activities are to improve the abovementioned indices which lead to the reinforcement of their competitiveness. The participants will learn quality control, productivity improvement measures, stable operation policies and facility maintenance management from lectures, practices and site observations at more than ten companies.

II. Description

1. Title (J-No.): Know-how of MONOZUKURI at Japanese Manufacturing Site -Productivity Improvement and Facility Maintenance Management- (J1704310)

2. Course Period in JAPAN: October 22, 2017 to December 7, 2017

3. Target Regions or Countries:

Brazil, Colombia, Djibouti, Mexico, Myanmar, Nigeria, Philippines, Tunisia and Zambia

4. Eligible / Target Organization

This program is designed for

- 1) Skill dissemination officers of manufacturing industrial association
- 2) Governmental officials in charge of promotion of manufacturing in the manufacturing sector

* 1) and 2) must have more than five years of experience in the above mentioned fields.

* Counterparts or persons involved in JICA projects or working with JICA Senior Volunteers and/or Advisors who satisfy the required qualifications are encouraged to apply.

5. Course Capacity (Upper limit of Participants): 10 participants

6. Language to be used in this program: English

7. Course Objective

Strategic plan for strengthening system and human development is formulated in participants' organization.

8. Overall Goal

Productivity improvement and Facility maintenance management are improved in participants' organizations and countries.

9. Expected Module Output and Contents

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

Expected Module Output	Subjects/Agendas	Methodology
To identify the issues in the participants' country and to recognize the role of their organizations by understanding quality control and productivity improvement measures in Japan	(1) Basic concepts of MONOZUKURI (Manufacturing process) (2) Productivity improvement by loss-elimination (3) Quality management with rejection (4) Activities for improving manufacturing site (5S, kaizen) (5) How to find weakness of manufacturing site	Lecture Field visit and Exercise
To identify the issues in the participants' country and to recognize the role of their organizations by understanding stable operation policies and facility maintenance management in Japan	(6) Basic concepts of facility maintenance (7) Technique and skill for preventive maintenance (8) Case study of minimizing breakdowns by facility improvement (9) Introduction of CDT: Condition Diagnosis Technology (10) Introduction of Training system for mechanical and electrical skills	Lecture Field visit and Exercise
To improve capacity of formulating a strategic plan for strengthening system for productivity improvement and human resource development in participants' organization	(11) Guidance of identifying the issues (12) Guidance of Action plan elaboration (13) Job report and Action plan presentation	Lecture, Discussion and Presentation

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.

2. Nominee Qualifications

Applying Organizations are expected to select nominees who meet the following qualifications.

(1) Essential Qualifications

- 1) Current Duties:
 - Officers of chambers of commerce, private enterprises federations and business unions for SMEs
 - Officials of local governments and public institutions that support SMEs and local industry development in the manufacturing sector

* Candidates must provide information about the status of SMEs and local industry promotion in their regional areas using the Job Report form (Annex-2)

* Counterparts or persons involved in JICA projects or working with JICA Senior Volunteers and/or Advisors who satisfy the required qualifications are encouraged to apply.

- 2) Experience in the relevant field: have more than 5 years' work experience in the field of local industry promotion
- 3) Educational background: be a university graduate or have the equivalent academic background
- 4) Language: have a competent command of spoken and written English which is equal to TOEFL iBT 100 or more (This workshop 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.)
- 5) Health: must be in good health, both physically and mentally, to participate in the Program in Japan. Pregnant applicants are not recommended to apply due to the potential risk of health and life issues of mother and fetus.

(2) Recommendable Qualifications

Age: between the ages of thirty (30) 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 Expire date.

(3) Issue Analysis Sheet (IAS) & Job Report: to be submitted with the application form. The documents should be completed in accordance with descriptions of Annex-1 (Issue Analysis Sheet) and Annex-2 (Job Report). The IAS is used for screening of participants. It is a tool that logically organizes relationships between issues or problems which a nominee's organization is facing with and the subjects to be covered in the training program in Japan.

4. Procedure for Application and Selection

(1) Submitting the Application Documents

Closing date for applications: **Please inquire to the JICA office (or the Embassy of Japan)**.

(After receiving applications, the JICA office (or the Embassy of Japan) will send them to **the JICA Center in JAPAN** by **August 22, 2017.**)

(2) Selection

After receiving the documents through proper channels from your government, the JICA office (or the embassy of Japan) will conduct screenings, and then forward the documents to the JICA Center in Japan. Selection will be made by the JICA Center in consultation with concerned organizations in Japan. *The applying organization with the best intention to utilize the opportunity of this program will be highly valued in the selection.* Qualifications of applicants who belong to the military or other military-related organizations and/or who are enlisted in the military will be examined by the Government of Japan on a case-by-case basis, consistent with the Development Cooperation Charter of Japan, taking into consideration their duties, positions in the organization, and other relevant information in a comprehensive manner.

(3) Notice of Acceptance

Notification of results will be made by the JICA office (or the Embassy of Japan) **not later than September 22, 2017**.

5. Conditions for Attendance

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

IV. Administrative Arrangements

1. Organizer

(1) **Name:** JICA KYUSHU (Training Program Division)

(2) **Contact:** kictp@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 /KIC) Address: 2-2-1 Hirano, Yahata Higashi-ku, Kitakyushu-shi, Fukuoka, 805-8505 Japan TEL:+81-93-671-6311 FAX: +81-93-671-0979 (81: country code for Japan, 93: area code) http://www.jica.go.jp/english/contact/domestic/index.html
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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 "III. ALLOWANCES" of the brochure for participants titled "KENSU-IN GUIDE BOOK," which will be given before departure for Japan.

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. Reports Presentation

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

Accepted participants will make a presentation of his/her Job Report & IAS in up to 10 minutes, at the early stage of the training program in order to share knowledge and background with other participants as well as the course leader and lecturers. Visual materials such as Power Point and pictures may be helpful for your presentation. When you use Power Point, it is preferable to a font size of more than 24 points and not to use pictures in the background.

(2) Action Plan

Accepted participants are required to formulate an action plan at the end of the training program in Japan to show your ideas and plans, which you carry out after return home, reflecting the knowledge and method acquired from the training. Each participant will have 10 minutes for presentation.

2. 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.

VI. ANNEX

- 1. Issue Analysis Sheet (Annex-1)**
- 2. Job Report (Annex-2)**
- 3. Tentative Training Schedule (Annex-3)**

Annex-1

Issue Analysis Sheet (IAS) Guidelines

1. What is IAS?

- (1) IAS is a tool to logically organize relationships between issues and contents of the training program in Japan.
- (2) IAS will help the nominee to clarify his/her challenges 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 up improvement plans for the issues by filling out the sheet in phases from prior to the nominee's arrival through to the end of the training.
- (4) In addition, it is used for the course leader and lecturers to understand the issues that each participant is confronting, and provide him/her with technical advice, useful references and solutions through the training program in Japan.

2. How to fill out IAS?

- (1) Please describe the issues you (your organization) confronts in column "**A: Issues that you (your organization) confront(s)**"
Prepare the separate rows for each problem; if necessary, please add new rows.
- (2) In column "**B: Actions that you (your organization) are (is) taking**", please describe actions that you (your organization) are taking to solve the issues shown in column A.
This information is very important to carry out the training course and also to make Action Plan as a fruit of the training.
- (3) In order to solve issues, you (your organization) need various types of information, so you hope to participate in this training course.
The main purpose of this training course is to provide the information you need. The contents of this course are shown in **II-9 (Expected Module Output and Contents** on PP. 3)
Referring to the "List of Subjects" in this table, please extract subjects from which you expect to get useful information you need, and write their Subject No. in column "**C: Subject No.**"
You can input as many subjects as you think the subjects are related.
You do not need to input "Subject Titles" into the chart, but only "Subject No."

Issue Analysis Sheet (IAS)

Name: _____

【A】 Issues that you (your organization) confront(s).	No.	【B】 Actions that you (your organization) are (is) taking.	【C】 Subject No. ^{*)}
1			
2			
3			

^{*)} 【C】 Please write the **Subject No.** you most expect to get the information you need.

Please refer the **Number of Subjects/Agendas** shown in the tables of this **General Information (pp.3.)**

Annex-2

Know-how of MONOZUKURI at Japanese Manufacturing Site

Job Report

Name:

Country:

Organization and present post:

E-mail:

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.

Remarks 2: Each participant is required to have presentation in 10 minutes based on this Job Report and IAS 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.

1. The current situation of manufacturing industries in your country or region

- ① GDP composition by industry
- ② Composition of the manufacturing industry by type of business

2. The national or local government policies

- ① Development policies for the manufacturing industry
- ② Supporting policies for the small and medium-sized manufacturing industry

3. What is/are the overall problem(s) of the manufacturing industry you belong to or you exercise jurisdiction over?

4. What is your image of Japanese manufacturing industry and at what points do you feel differences between your country's manufacturing and that of Japan?

5. Do you already know and implement the items mentioned below?

Please place a check mark next to the each item accordingly.

	I know	being carried out
5S		
KAIZEN		
Autonomous maintenance		
TQC		
Muda Zero Activity (waste elimination activity)		
Condition diagnosis technology		

Annex-3

Tentative Training Schedule

**Know-how of MONOZUKURI at Japanese Manufacturing Site
-Productivity Improvement and Facility Maintenance Management- in 2017**

Date	AM		PM	
	Subject	Place	Subject	Place
Oct.22 Sun	Arrival			
23 Mon	Program Orientation by JICA	KIC	-Same as the left-	KIC
24 Tue	General Orientation by JICA	KIC	-Same as the left-	KIC
25 Wed	Interchange program by JICA	KIC	Course guide by KITA	KIC
26 Thu	Problem solution method using IAS	KIC	Problem solution method using IAS	KIC
27 Fri	Basic concept of Monozukuri	KIC	Safety management at manufacturing sites	KIC
28 Sat				
29 Sun				
30 Mon	Introduction to maintenance management	KIC	Extraction of issues using IAS	KIC
31 Tue	Introduction to maintenance management	KIC	Observation at a maintenance shop of oil hydraulic equipment	Fukuda Oil Hydraulic Mfg. Co.
Nov. 1 Wed	Plant management improvement	KIC	Extraction of issues using IAS	KIC
2 Thu	Kitakyushu → Nagasaki		Observation at a maintenance shop of aircraft parts and equipment	ANA Component Technics Co., Ltd.
3 Fri	Nagasaki → Kitakyushu			
4 Sat				
5 Sun				
6 Mon	Practical training on productivity diagnosis	Yawata Electric Machinery Mfg. Co., Ltd.	Practical training on productivity diagnosis	Yawata Electric Machinery Mfg. Co., Ltd.
7 Tue	Job report presentation	KIC	Japanese manufacturing culture/ Review	KIC
8 Wed	Autonomous maintenance	KIC	Observation at Yaskawa robot plant	Yaskawa Electric Corp.
9 Thu	Practical training on autonomous maintenance	Mitsubishi Chemical Corp.	Practical training on autonomous maintenance	Mitsubishi Chemical Corp.
10 Fri	Improvement of plant management	KIC	Improvement of plant management	KIC
11 Sat				
12 Sun				
13 Mon	Practical training on quality control at site	Yawata Electric Machinery Mfg. Co., Ltd.	Practical training on quality control at site	Yawata Electric Machinery Mfg. Co., Ltd.
14 Tue	Visit to Nissan Motor Kyushu Factory	Nissan Motor Kyushu Factory	Discussion	KIC
15 Wed	Practical maintenance	KIC	Practical maintenance	KIC
16 Thu	Support policies for small and medium-sized enterprises	KIC	Kitakyushu → Tokyo	
17 Fri	Observation of three factories at an industrial complex of small-sized manufacturers	Ota city, small factory area	Observation at Toshiba Science Museum	Toshiba Science Museum
18 Sat				
19 Sun	Tokyo → Kyoto			
20 Mon	How to promote mechanization	Hini Arata Kan Demo Center	Observation of various automation equipment	Hini Arata Kan Demo Center
21 Tue	Move to Osaka		General production management system	Creation Core Higashi Osaka
22 Wed	5S training and plant observation	Hiraoka Hyper Tools Inc.	Observation of Monozukuri education	Monozukuri Experience Center
23 Thu	Himeji → Kitakyushu			
24 Fri	Introduction to equipment diagnosis	KIC	Practical training on equipment diagnosis	KIC
25 Sat				
26 Sun				
27 Mon	Skill training system	Sankyu Research and Create	Action plan guidance	KIC
28 Tue	Hands-on experience of Monozukuri	Kitakyushu Innovation Gallery	Hands-on experience of Monozukuri	Kitakyushu Innovation Gallery
29 Wed	Visit to Japan casting & Forging Corporation	Japan casting & Forging Corporation	Discussion	KIC
30 Thu	Observation of cell manufacturing system	Takagi Co., Ltd.	Action plan guidance	KIC
Dec. 1 Fri	Japan's maintenance management at site	KIC	How to find out weaknesses of factories/ Review	KIC
2 Sat	(Submission of the action plan)			
3 Sun				
4 Mon	How to find out weaknesses of factories	KIC	Visit to TOTO (Residential equipment)	TOTO Kokura No1 Plant
5 Tue	Visit to Nishiraku Dairy industry	Nishiraku Dairy industry	Lecture of Sanwa Press Co. (management creed)	Sanwa Press Co.
6 Wed	Evaluation meeting	KIC	Action plan presentation	KIC
7 Thu	Departure from Japan			

For Your Reference

JICA and Capacity Development

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

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

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

Japanese Development Experience

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

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

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

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



CORRESPONDENCE

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

**JICA Kyushu International Center (JICA KYUSHU)
Address: 2-2-1, Hirano, Yahata Higashiku, Kitakyushu-shi,
Fukuoka 805-8505, Japan**

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