

TRAINING AND DIALOGUE PROGRAMS



GENERAL INFORMATION ON

AIR QUALITY MANAGEMENT POLICY

集團研修「大気保全政策」

JFY 2010

<Type: Leaders Training Program / **類型:中核人材育成型**>

NO. J10-00605 ID. A1080864

Phases in Japan : From January 13, 2011 to February 26, 2011

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

I. Concept

Background

Air pollution causes human health damage and affects ecosystem. The air pollution includes pollution (SPM, SO_x, NO_x, etc.) locally generated by pollution sources such as factories, acid rain caused by chemical reaction in the process of stagnation and diffusion and transboundary pollution problems due to secondary pollutants like photo chemical smog. Pollution sources are not only factories but also urban transportations supporting public life and energy consumption.

Especially, due to the recent urbanization, economic growth and the transformation of industrial structure such as industrialization in developing countries, local air pollution problems have been arising and the countermeasures are urgently required.

As countermeasures against air pollution, there are development of contingency plans for minimizing inhabitants' damage in heavily polluted areas and preventive measures such as application of urban planning/land-use planning for the promotion of urban planning which facilitates the implementation of countermeasures against air pollution besides the countermeasures against pollution sources to reduce the emission of pollutants, targeting pollution sources.

This course aims that technical officials engaging in air pollution control administration in developing countries acquire technical information and knowledge on air quality management policy through a series of lectures and observations so that each participating country will be able to improve the air quality management policy from the technical view point.

For what?

The course aims to contribute to the improvement of the air pollution control policy in the participating countries from the technical and socioeconomic viewpoints. The course is composed of lectures/discussions and observation tours. By placing emphasis on the air pollution control policy of Japan, it is intended to share the Japanese specific experience with the participants and to enhance heart –felt discussions among them.

For whom?

Officials directly responsible for air pollution control administration.

II. Description

1. Title: Air Quality Management Policy (J10-00605)

2. Period of program

Core Phase in Japan: January 13, 2011 to February 26, 2011

3. Target Regions or Countries:

Pakistan, Morocco, Cambodia, Vietnam, India, Argentina, Syria, Egypt, Bosnia-Herzegovina

4. Program Objective:

Through the course, participants will be able:

- (1) to acquire the knowledge of whole system of air quality management,
- (2) to examine technical aspects of air pollution countermeasures (stationary and mobile sources) and air quality monitoring method,
- (3) to deepen understanding by exchanging opinions of current status of air quality and counter-measures in each country, and
- (4) to formulate an Action Plan for solutions of air pollution control problems.

5. Overall Goal:

Participants are expected to contribute to the improvement of air pollution policy in their own countries by making best use of the knowledge and technology on air quality management policy acquired in Japan.

6. Eligible / Target Organization :

Officials directly responsible for air pollution control administration.

7. Total Number of Participants : 9

8. Language to be used in this project: English

9. Contents:

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

(1) Preliminary Phase in a participant's home country (October 2010 to January 12, 2011) <i>Participating organizations make required preparation for the Program in the respective country.</i>	
Modules	Activities
Country Report	Submission of Country Report with Application form to JICA (by November 30th, 2010) (See the ANNEX I and ANNEX II)

(2) Core Phase in Japan (activities in Japan, subject to minor changes)

(January 13 to February 26, 2011)

Participants dispatched by the organizations attend the Program in Japan

Output	Subject	Hours	Contents
To acquire the knowledge of whole system of air quality management	Outline of Air Pollution Issues	2.5(L)	Human activities and atmospheric environment/ Mechanism of air pollution/ Impact of air pollution on health/ Impact on ecosystem/ Air pollution prevention technology
	History of Japan's countermeasures against air pollution	2.5(L)	Air pollution prevention measures (policies)/ Prevention technology/ Compensation for victims/ Roles of citizens and local government in prevention (reduction) of air pollution/ Success factors in air pollution reduction (education for technician, pollution control manager system, polluter-pays principle)/ Air pollution reduction cost
	Air pollution control administration	2.5(L)	Current situation of air pollution/ Laws and ordinances for measures against air pollution/ Environmental Quality Standard (Significance, substances under control and standard values)/Measures in different emission sources (stationary, mobile)/Citizens' awareness promotion/ Measures against oxidant and SPM/ Hazardous air pollutants
	Countermeasures against stationary sources	2.5(L)	Changes of implemented pollution countermeasures/ Control technology against stationary sources/ Outline of Laws and ordinances/ Emission Standard/ Enforcement of regulatory measures (report, spot inspection)
	Environmental quality standard and health effects	2.5(L)	Environmental Quality Standard values (SO ₂ , NO ₂ , CO, SPM, OX, etc.)/ Significance of Environmental Quality Standard/ Formulation flow of Environmental Quality Standard/ Establishment of judgment criteria from the viewpoint of human health protection/ Emission sources of pollutants (SO ₂ , NO ₂ , CO, SPM, OX, etc.)/ Emission volume and health effects /Threshold value
	Countermeasures against hazardous air pollutants	2.5(L)	What are hazardous air pollutants?/ Current situation and problems of regulatory measures (Designated substances and emission control, PRTR)/ Roles of central & local government, enterprises and citizens as countermeasures
	Countermeasures against dioxin	2.0(L)	What is dioxin? / Emission sources and emission volume/ Present regulatory measures/ Current problems and future plan

Air pollution control administration by local governments	2.5(L)	Roles and obligations of local government/ Relationship between Laws and Ordinances/ Pollution prevention agreement/ Guidance and spot inspection given to enterprises/ Ambient air monitoring system/ Hazardous substance control measures (ordinances)/ Dioxin control measures/ Handling complaints from residents/ Program for citizens' awareness raising
Offensive odor control	2.5(L)	General topics (odor and malodor, adaptability, intensity, etc.)/ Current situation of malodor complaints/ Types of malodor and intensity/ Malodor Prevention Law/ Promotion of malodor prevention engaged by citizens, enterprises and governments / Measures against malodor (factories, workshops, prevention technologies)/ Current problems and future plans
Air pollution control measures by private enterprises (power, steel, automobile)	6(L)	Control measures in power, steel, and automobile industries and voluntary measures of enterprises (history)/ Corporate engagement classified by industries/ R & D in pollution prevention technologies/ Relief measures to victims/ Comparison between victims' compensation and pollution prevention cost/ Current problems and corporate engagements (hazardous chemical substances, etc.)
Automobile exhaust-gas emission control	2(L)	General topics (numbers of automobiles, etc.)/ Automobile exhaust gas emission prevention technologies/ Automobile emission gas regulation (emission substances, volume, effect of low-emission vehicle, etc.)/ Outline of automobile fuel regulation (history, law enforcement situations, emission gas test, etc.)/ Automobile noise prevention measures (Current situation, prevention technologies)/ Future policy toward automobile emission reduction, Regulation and economy
Traffic pollution control	2(L)	Traffic management from the viewpoint of environment protection/ Pollution control measures using traffic regulations in various countries/ Measures against aircraft noise (Regulation standard, Measures against noise emission source etc./ Measures against noise and vibration of trains (Bullet Train)
Noise and vibration	2(L)	Regulation of noise and vibration related to automobile traffic/ Others
Automobile traffic regulation	2(L)	Background and implementation of automobile traffic regulation

	Environmental impact assessment	2(L)	Concept of Environmental Impact Assessment/ Targeted facilities/ Procedure/ Current problems and future plans
	Air pollution control case study	3(L)	Technical guidance to factories (based on lecturer's experiences)/ Success story of SO ₃ reduction/ Air pollution prevention in manufacturing processes/ The making of air pollution prevention manuals for Steel and Power industry/ Request made to Oil Association for quality fuel (for SO ₃ reduction)/ SO ₂ emission control in Tokyo Met. Government/ Consumption and major uses of heavy oil/ Pollution Prevention Manager system
	Air pollution control case study at manufacturers, power stations, automobiles	21.5 (O)	Coal-fired thermal power plant/ PCB treatment methods/ City waste incineration plant/ Paper mill, Cement factory, Steel factory, Fishbone mill/ Observation of automobile traffic regulation, R & D Institute for Automobile, Automobile inspection & registration system, Automobile painting
To examine technical aspects of air pollution countermeasures (stationary and mobile sources), and air quality monitoring method	Diffusion of pollutants in the atmosphere (model and practice)	2.5(L)	Pollutants sources and ambient concentration/ Plume model/ Meteorological effects on pollutant dispersion/ Long-term average/ Time –dependent simulation
	Photochemical air pollution	2(L)	Present status of photochemical oxidant/ Formation mechanism of oxidant/ Secondary SPM formation/Health effects caused by oxidant/ Photo-chemical oxidant effects on eco-system
	Air Pollution Control technology and energy issues	2.5(L)	Structure, demand and prices of major energy/ Present situation and problems of coal energy/ Technological trend in the near future/ Sulfur content of major fuels (in Asia)/ Changes of sulfur content in heavy oil (in Japan), Changes of desulphurization processes/ NO _x reduction technology/Denitrification technology/ Installation cost of air pollution control equipment (for developing countries)
	Global atmospheric environmental problem	2.5(L)	Global warming (Mechanism, history, causing substances, future projection, effects on eco-system, Health effects/ Engagement for CO ₂ reduction/ Ozone layer protection/ Acid rain/ Trans-boundary pollution
	Techniques for measurement of air pollution and sampling	10(L/P)	Introduction/ Sulfur dioxide/ Carbon monoxide/Nitrogen oxide/ Photochemical oxidant/ Hydrocarbon/SPM and heavy metal/ Comparison of analytical methods

	Malodor measuring methodology	5.0(L/P)	Summary/ Sampling methods of malodor emitting substances/ Instrumental method/ Sensory method
	Environmental impact assessment and information processing	4.5(L/P)	EIA process/ Technical theory related to evaluation(basic formula of diffusion process)/ Structure of lower atmosphere and generation of turbulence/ Plume gas concentration/ Diffusion model and simulation of air pollution/ EIA practice (including practice on calculator)/ Outline of simulation of environment/ Demonstration of PC based simulation software
	Analysis technology, present situation	5(L/O)	Manufacturer of analytical instrument, Ambient air telemetry system, General ambient monitoring station, Roadside ambient monitoring station, National Institute for Environment Studies
To deepen understanding by exchanging opinions of current status of air quality and counter-measures in each country	Country report presentation	6(P)	Presentation of Situations of the environment of participants' countries
	Action Plan workshop	10(P)	Exchanges of experiences of problems and counter-measures in air quality control
To formulate an Action Plan for solutions of air pollution control problems	Preparation and presentation of Action Plan	18(P)	Prepare and make a presentation of action plan on air quality control improvement in the participants' countries
	Total	132.5	

(Notes) L: Lecture O: Observation P: Practice

(3) Follow-up Phase in a participant's home country

(March 2011)

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

Modules	Activities
Follow-up Report	Introduce the knowledge with submission / presentation of the Action Plan in the respective country and report on the result by the end of March, 2011.

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations:

- (1) This program is designed primarily for organizations that intend to address specific issues or problems identified in their operation. Participating organizations are expected to use the project for those specific purposes.
- (2) This program is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the project to meet specific requirements of applying organizations and effectively facilitate them toward solutions for the issues and problems.
- (3) As this program is designed to facilitate organizations to come up with concrete solutions for their issues, participating organizations are expected to make due preparation before dispatching their participants to Japan by carrying out the activities of the Preliminary Phase described in section II-9 .
- (4) Participating organizations are also expected to make the best use of the results achieved by their participants in Japan by carrying out the activities of the Follow-up Phase described in section II-9.

2. Nominee Qualifications:

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

Essential Qualifications

Applicants should:

1. be nominated by their government in accordance with the procedures mentioned in Section III-4 below,
2. be officials directly responsible for air pollution control administration especially in a position to participate in planning and decision making in either central or local governments or public organizations with more than 3 years of experience,
3. have a sufficient command of spoken and written English,
4. be university graduates or those who possess equivalent technical qualification in this field,
5. be under 50 years of age (in principle),
6. be in good health, both physically and mentally, to undergo training, ※and
7. not be serving in the military.

※Pregnant participants are strictly requested to complete the required procedures before departure

in order to minimize the risk for their health. The procedures include ①letter of the participant' s consent to bear economic and physical risks ②letter of consent from the participant' s supervisor ③ letter of consent from your Embassy in Japan, ④medical certificate. Please ask National Staff in JICA offices for the detail.

3. Required Documents for Application

(1) Application Form: The Application Form is attached to this General Information.

(2) Country Report: to be submitted with the application form. (See the Annex I and II)

All participants are required to make presentation on their own reports. Approximately 30 minutes will be allocated to each presentation, for which participants are able to use power point and video-projector. In such case participants are requested to bring related data or materials on their arrival in Japan.

4. Procedure for Application and Selection :

(1) Submitting the Application Documents:

Closing date for application to the JICA Tokyo : **November 30th 2010**

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

(2) Selection:

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

(3) Notice of Acceptance

Notification of results shall be made by the respective country's JICA office (or Embassy of Japan) to the respective Government by **not later than 15th December.**

5. Conditions for Attendance:

(1) to observe the schedule of the program,

(2) not to change the program subjects or extend the period of stay in Japan,

(3) not to bring any members of their family,

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

IV. Administrative Arrangements

1. Organizer:

Name: Economic Infrastructure Development and Environment Division (TICEF) ,
JICA TOKYO,
Contact: Ms. Sanae YOSHIDA ticthd@jica.go.jp

2. Implementing Partner:

Name: Ministry of the Environment
Contact: Address: 1-2-1, Kasumigaseki, Chiyoda-ku, Tokyo, 100-8975, Japan
Tel: 81(*)-3(**)-3581-3351 FAX: 81(*)-3(**)-3580-7173
(81: country code for Japan, 3: area code)

Name: Japan Environmental Sanitation Center
Contact: Address:10-6, Yotsuyakami-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken,
210-0828, Japan
Tel:81(*)-44(**)-288-4937 Fax :81(*)-44(**)-288-5217
(81: country code for Japan, 44: area code)

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: Term of Insurance: From arrival to departure in Japan. *the traveling time outside Japan shall not be covered.

4. Accommodation in Japan:

JICA will arrange the following accommodations for the participants in Japan:

JICA Tokyo International Center (TIC)

Address: 2-49-5 Nishihara, Shibuya-ku, Tokyo 151-0066, Japan

TEL: 81-3-3485-7051 FAX: 81-3-3485-7904

(where "81" is the country code for Japan, and "3" is the local area code)

If there is no vacancy at TIC, JICA will arrange alternative accommodations for the participants.

Please refer to facility guide of TIC at its URL,

<http://www.jica.go.jp/english/contact/domestic/pdf/welcome.pdf>

5. Expenses:

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

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

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

6. 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.

**Air Quality Pollution Management Policy
(JFY 2010)**

Country Report

Name _____

Country _____

1. Name of your organization
2. Your organization chart (including main duties, budget, and the number of staff related to air pollution control)
3. Other organization chart related to air pollution control (including duties, budget, and the number of staff)
4. Historical background of air quality and its control
5. Present status of air quality
6. Air pollution control legislations
7. Ambient air quality standards
8. Main sources of air pollution
9. The number of complaints and health damage caused by air pollution.
10. Measurement of air pollutant and monitoring systems for air quality
11. Air pollution control techniques
12. The role of central government, regional government (Prefecture) and local government (Municipality)
13. Technical problems or problems for implementing air pollution control policy
14. Topics you would like to learn in the course

Annex II

1. Please fill in Ambient Air Quality Standards, present value and countermeasures to comply with 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	Countermeasures
		1 hour	1 day		
Sulfur Dioxide					
Nitrogen Dioxide					
Photochemical Oxidant					
Carbon monoxide					
Suspended Particulate Matter					
Others					

2. 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						

4. Please clarify the role of central government, regional government (Prefecture) and local government (Municipality) for the regulation of air pollution in your country. (Please fill in the check mark on the responsible organization.)

Role Share of Air Pollution Control Administration between Central and Local Government

Please put the check mark on the appropriate column.

Responsibility of APC Administration	Central Government	Regional Government (Prefecture)	Local Government
Preparation of Law and Regulation			
Preparation of Guideline			
Setting of Standard			
Preparation of Ambient Air Monitoring Plan (National Level)			
Installation of Equipment for Ambient Air Monitoring(National Level)			
Analysis of Samples from Ambient Air Monitoring(National Level)			
Inspection of factory(including Law Enforcement)			
Inspection of factory(without Law Enforcement)			
Administrative Guidance to Factory			

ANNEX III

Air Quality Management Policy 2010 Action Plan

All participants are required to formulate an Action Plan during the training course and make its presentation at the end of the course.

Please pick up one topic from among issues that you mention in your country report to be able to tackle, and formulate Action Plan), by utilizing the knowledge that you have gained through the training course. Try to formulate the plan in consideration of the existing human and financial resources in your organization in as efficient and effective way as possible.

You are requested to submit the Action Plan including the items mentioned below.

<Contents (Recommended)>

- a. Theme
- b. Background
- c. Objectives (Goals)
- d. Direct and Indirect beneficiaries
- e. Action Component
- 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.

***In order to formulate a better Action Plan, you are recommended to bring necessary documents or data from your country.**

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 Tokyo International Center (JICA TOKYO)

Address: 2-49-5 Nishihara, Shibuya-ku, Tokyo 151-0066, Japan

TEL: +81-3-3485-7051 FAX: +81-3-3485-7904

Annex II

1. Please fill in Ambient Air Quality Standards, present value and countermeasures to comply with 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: _____

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Suspended Particulate Matter					
Others					

2. 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						

4. Please clarify the role of central government, regional government (Prefecture) and local government (Municipality) for the regulation of air pollution in your country. (Please fill in the check mark on the responsible organization.)

Role Share of Air Pollution Control Administration between Central and Local Government

Please put the check mark on the appropriate column.

Responsibility of APC Administration	Central Government	Regional Government (Prefecture)	Local Government
Preparation of Law and Regulation			
Preparation of Guideline			
Setting of Standard			
Preparation of Ambient Air Monitoring Plan (National Level)			
Installation of Equipment for Ambient Air Monitoring(National Level)			
Analysis of Samples from Ambient Air Monitoring(National Level)			
Inspection of factory(including Law Enforcement)			
Inspection of factory(without Law Enforcement)			
Administrative Guidance to Factory			

