



# TRAINING AND DIALOGUE PROGRAMS

## GENERAL INFORMATION ON

**Capacity Development for Adaptation to Climate Change  
- Climate Change Analysis (Regional) South America Region**

**地域別研修「気候変動への適応にかかる能力強化(地域別)南米地域」  
*JFY 2010***

**<Type: Solution Creation / 類型:課題解決促進>**

**NO. J10-04029 / Project ID: 1084105**

**Phase in Japan : From October 17, 2010 to November 19, 2010**

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**

Many international research institutions for scientific observation and analysis of global warming have been implementing climate change projection by modeling the climate. By running a super-high-resolution atmospheric general circulation model (AGCM) using the supercomputer (the Earth Simulator) of Japan, we can simulate the climate projection at the highest resolution by 20 km. The climate change projection by this high-resolution AGCM (MRI/JMA AGCM) under the KAKUSHIN Program is garnering the international attentions as it may provide the basic foundation of adaptive behavior for many countries.

Based on the background above, we are focusing the climate change projection by the MRI/JMA AGCM for providing the regional training course in the area of climate change projection for South American countries.

In this training, we will analyze and interpret the 20-km mesh and 60-km mesh MRI/JMA AGCM results with the experience, knowledge and technologies of Japan, and use such analysis and interpretation for the projection of current issues related to climate change in each country. Furthermore based on the fruits from this training, we will challenge to plan and implement the suitable adaptive policy for environmental impact evaluation and adaptive development plans.

\* **The Earth Simulator:** It is a supercomputer of the largest arithmetic capacity in the world (at June 2002). By using this strength, it projects and analyzes the change in the earth atmosphere and oceans hence protect the human lives from natural disasters by predicting the climate accurately. Thus the Earth Simulator contributes for the sustainable development of mankind.

\* **The MRI/JMA AGCM:** It is a global atmospheric general circulation model with a horizontal grid size of approximately 20 km. This model has been developed jointly by the Meteorological Research Institute (MRI) and by the Japan Meteorological Agency (JMA). JMA is using this model as operational numerical forecasting since November 2007, and MRI is using this model for climate modeling purpose.

\* **KAKUSHIN Program:** It is a 5-year (FY2007-2011) initiative named the Innovative Program of Climate Change Projection for the 21st Century funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). The

Program uses the Earth Simulator to address emerging research challenges for the following three major themes: Advancing climate modeling and projection, Quantification and reduction of uncertainty, and Application of regional projections to natural disasters. MRI focuses on extreme weather event projection such as tropical cyclones and heavy rainfall.

**For what?**

This program provides basic knowledge and field skills for projecting the climate change by utilizing the global 20-km and 60-km mesh AGCM results as well as the experience, knowledge and technologies of Japan to analyze and interpret the results of climate change projections for each country.

**For whom?**

Technical officials who are engaged in projecting climate change in governmental or other related organizations in South American countries.

**How?**

Participants shall have opportunities in Japan to build up the capabilities of analyzing and projecting climate change through lectures and discussions.

Participants also are expected to formulate the “paper of projecting climate change”.

## **II. Description**

**1. Title (J-No.):**

Capacity Development for Adaptation to Climate Change -  
Climate Change Analysis (Regional) South America Region  
(J10-04029)

**2. Period of program:**

**Duration of whole program:** September 2010 to March 31, 2011

**Core Phase in Japan:** October 17 to November 19, 2010

**3. Target Regions or Countries:**

Argentina, Paraguay, Uruguay, Bolivia

**4. Eligible / Target Organization :**

This program is designed for climate change projection officers in South America. The target organizations are meteorological authorities of the countries that are responsible for projecting climate change

**5. Total Number of Participants :** 5(Five) participants

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

**7. Program Objective:**

The purpose of this training program is to provide basic knowledge and field skills for projecting the climate change by utilizing the high-resolution MRI/JMA AGCM results with the experience, knowledge and technologies of Japan, and use such analysis and interpretation for the projection of current issues related to climate change in each country.

Also, each participant of this course is expected to consider appropriate measures for projecting climate change in respective countries based on acquired knowledge and information through the program.

**8. Overall Goal**

Through the course program, participants are expected to formulate the road map for preparing paper of projecting climate change.

## 9. Contents:

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

<b>(1) Preliminary Phase in a participant's home country</b> (September to October 16, 2010) <i>Participating organizations make required preparation for the Program in the respective country.</i>	
Modules	Activities
Preparing meteorological data	(1) Observation data of current climate in the respective country. (2) Projected data of future climate by using the dynamical and/or statistical downscaling method
Inception Report	Submission of Inception Report with A2 A3 form to JICA (by September 3 <sup>rd</sup> , 2010) (See the ANNEX )

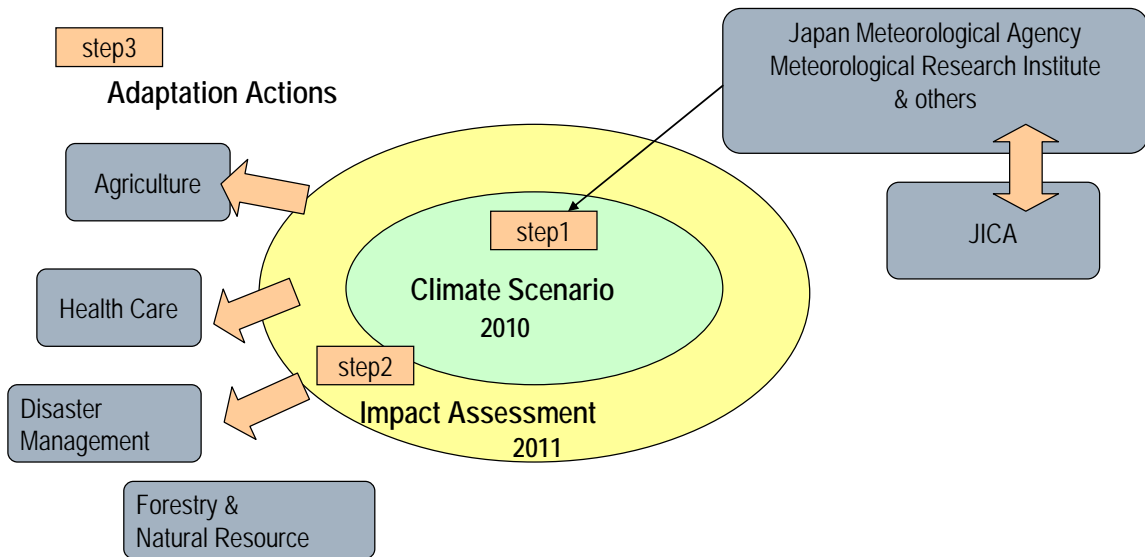
<b>(2) Core Phase in Japan</b> (October 17 to November 19, 2010) <i>Participants dispatched by the organizations attend the Program in Japan.</i>	
Modules	Activities
To understand concepts of climate change challenge in Japan	(1) General introduction at JICA (2) Introduction of global warming research at MRI (3) Presentation of Inception report.
To understand verification of present-day climate	(1) Data acquisition (2) Verification of present-day climate of the MRI/JMA AGCM at 20-km and 60-km mesh with the observational data
Analysis of future climate change	(1) Projection of future climate in each country with 20-km and 60-km mesh AGCM (2) Action Plan (preparation presentation and discussion)

\* Action Plan: The plan which describe what participants will do after they go back for the improvement of projecting climate in their countries

<b>(3) Finalization Phase in a participant's home country</b> ( November 20, 2010 – March 31, 2011) <i>Participating organizations produce final outputs by making use of results brought back by participants.</i>	
Modules	Activities
Final Report	Introduce the knowledge with submission / presentation of the in the respective country and report on the result by the end of March 2011.

<Structure of the program>

Training course  
*"Adaptation to Climate Change "*



This training program is organized as two-year program to realize the final result for adaptation to climate change – climate change analysis and modeling.

fiscal year	objective (out put)	target organization	implementing partner
2010	To enhance the capabilities of climate change analysis: (To formulate the paper of projecting climate change)	Meteorological authorities or other related organizations of the countries that are responsible for projecting climate change	Meteorological Research Institute(MRI)
2011	To formulate environmental impact assessment plan and to enhance related capabilities: (To formulate the sectoral paper for the impact assessment )	Authorities of the countries that are responsible for climate change impact assessment	Under planning

<Tentative Schedule>

Day			
17-Oct	Sun		
18-Oct	Mon	Orientation	JICA
19-Oct	Tue	Preparing for Inception Report presentation Study tour to Earth Simulator Center	JICA JAMSTEC
20-Oct	Wed	Presentation on Inception Report	MRI
21-Oct	Thu	Data acquisition and verification of present climate #1	
22-Oct	Fri		
23-Oct	Sat	Holiday	
24-Oct	Sun	Holiday	
25-Oct	Mon	Data acquisition and verification of present climate #2	MRI
26-Oct	Tue		
27-Oct	Wed	Analysis of present-day climate and future climate change #1	
28-Oct	Thu		
29-Oct	Fri		
30-Oct	Sat	Holiday	
31-Oct	Sun	Holiday	
1-Nov	Mon	Analysis of present-day climate and future climate change #2	MRI
2-Nov	Tue		
3-Nov	Wed	Holiday	
4-Nov	Thu	Comparison of 20-km and 60-Km mesh model results #1	
5-Nov	Fri		
6-Nov	Sat	Holiday	
7-Nov	Sun	Holiday	
8-Nov	Mon	Comparison of 20-km and 60-Km mesh model results #2	MRI
9-Nov	Tue		
10-Nov	Wed		
11-Nov	Thu	Preparation for Action Plan Study tour to ICHARM	MRI / ICHARM
12-Nov	Fri	Preparation for Action Plan	MRI
13-Nov	Sat	Holiday	
14-Nov	Sun	Holiday	
15-Nov	Mon	Preparation for Action Plan	MRI
16-Nov	Tue		
17-Nov	Wed	Presentation of Action Plan	
18-Nov	Thu	Final Presentation of Action Plan Evaluation Meeting Closing ceremony	JICA
19-Nov	Fri	Return to home country	

**1 0 . Follow-up Cooperation by JICA(request base):**

JICA might provide follow-up support (software type technical assistance) to participating organizations that intend to develop the result of the project further through such activities as holding seminar / workshop and advising by Japanese experts (short term) etc. Please note that the support shall be provided based on proposals from the participating organizations.

### ***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 Finalization Phase described in section II -9.

#### **2. Nominee Qualifications:**

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

- 1) be nominated by their government in accordance with the procedure mentioned
- 2) be technical officials presently in charge of research and monitoring programs for projecting climate change in governmental or related organizations, with three (3) years or longer experience,
- 3) have computational skill (e.g. UNIX) to analyze meteorological data
- 4) can write and publish peer-reviewed papers
- 5) can bring high-temporal and high-spatial resolution climate data, such as precipitation and temperature, to be compared with the simulation data
- 6) be not more than approximately forty five(45)years old
- 7) have a good command of spoken and written English,
- 8) be in good health, both physically and mentally to undergo training
- 9) not be serving in any form of military services.

### 3. Required Documents for Application

- (1) **Application Form:** The Application Form is attached to this General Information.
- (2) **“Inception Report”:** to be submitted with the application form.  
(See the Annex)

### 4. Procedure for Application and Selection :

#### (1) Submitting the Application Documents:

Closing date for application to the JICA Tokyo: **September 3, 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 September 17, 2010.**

### 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 section III -4.

## IV. Administrative Arrangements

### 1. Organizer:

(1) **Name:** Economic Infrastructure Development and Environment Division (TICEF) , JICA TOKYO,

(2) **Contact:** Ms. Sanae YOSHIDA                      jicatic@jica.go.jp

### 2. Implementing Partner:

(1) **Name:** Meteorological Research Institute (MRI)

(2) **Contact:** Address: 1-1 Nagamine, Tsukuba-city, Ibaraki 305-0052 Japan  
TEL: 81-29-853-8538    FAX: 81-29-853-8545

(3) **URL:** <http://www.mri-jma.go.jp/Welcome.html>

(4) **Remark** MRI is a governmental institution, which is an auxiliary organ within Japan Meteorological Agency

### 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.

#### (3) Accommodation in Japan:

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

<b>JICA Tokyo International Center (JICA Tokyo)</b>
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Address: 2-49-5 Nishihara, Shibuya-ku, Tokyo 151-0066, Japan
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TEL: 81-3-3485-7051    FAX: 81-3-3485-7904
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(where "81" is the country code for Japan, and "3" is the local area code)
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<b>JICA Tsukuba International Center (JICA Tsukuba)</b>
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Address: 3-6 Koyadai, Tsukuba-shi, Ibaraki 305-0074, Japan
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TEL: 81-29-828-1111    FAX: 81-29-828-1119
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(where "81" is the country code for Japan, and "29" is the local area code)
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If there is no vacancy at JICA Tokyo / JICA Tsukuba, 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>

### 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 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.

**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. ANNEX:**

### Capacity Development for Adaptation to Climate Change

#### – Climate Change Analysis (Regional) South America

**(JFY 2010)**

#### **“Inception Report”**

The role of this report is not only to describe the present state of issues of projecting climate change in your country, but also to find the causes and solutions for the issues. Therefore, please mention the issues in detail, such as the background, causes, constituent elements and stakeholders of the issues, etc.

All nominees are expected to submit a “Inception Report” on the following issues and submit it to JICA office or the Japan International Cooperation Center with A2A3 form by September 3<sup>rd</sup>, 2010, preferably by e-mail to [jicatic@jica.go.jp](mailto:jicatic@jica.go.jp). The paper should be typewritten in English on A4 size paper (21 cm x 29.5 cm).

#### NOTE:

Each participant is expected to give a 20 minutes presentation on your Inception Report at the beginning of the core phase in Japan, so that you are expected to prepare the presentation before coming to Japan.

Visual presentation with many graphs, figures and pictures are highly appreciated, especially using Microsoft PowerPoint. Please save the data in USB flash memory or CD and also, in case of any mechanical problem, we recommend to bring a printed version of the presentation to Japan.

#### **Outline of Inception Report:**

##### 1. Introduction:

- (1) Name of Country
- (2) Name of Applicant
- (3) Name of the region/city, country
- (4) Address
- (5) Tel/ Fax /E-mail

##### 2. Country Information:

- (1) Geographic location & area of country
- (2) Climate, demography and socio-economic condition 11

3. Framework of adaptation to climate change
  - (1) Key points of government policy in adaptation for climate change
  - (2) Outline of related initiatives / projects  
ex. Donor assisted related projects
  - (3) Existing laws, ordinances and regulation, framework  
(e.g. NAPA )
  - (4) Relevant organizations and their possible roles on adaptation in your country
  - (5) Lessons learnt from the past or ongoing initiatives / projects
  
4. Organizational Framework and Job Description
  - (1) Name of organization
  - (2) Missions of the organization
  - (3) Organization chart
  - (4) Outline of the organization and division / department
  - (5) Description of your job
  - (6) Issues and constrains
  - (7) Specific are of interest relate adaptation to climate change
  
5. Other Comments

**Questionnaire:**

1. During your stay in Meteorological Research Institute (MRI), to what extent do you want to conduct analysis work?
  - a: Make copies of necessary data. I will make substantial analysis works after returning to my country.
  - b: Make copies of necessary data and produce most of necessary figures.
  - c: Make copies of necessary date, produce necessary figures and complete drafting a report.
  
2. Are you familiar with UNIX operational system computer?
  
3. What kind of programming language do you use for numerical (and/or mathematical) analysis?
  - a: none
  - b: FORTRAN
  - c: C
  - d: Visual basic
  - e: Others (indicate: )

4. What kind of numerical (and/or mathematical) analysis have you practiced?
- a: None
  - b: Correlation coefficient
  - c: Empirical Orthogonal Function (EOF)
  - d: Band-pass filter
  - e: Frequency spectrum
  - f: Wavelet analysis
  - g: Others (indicate: )
5. What kind of visualization software do you use to make figures?
- a: None
  - b: EXCEL
  - c: GrADS
  - d: GMT
  - e: Others (indicate: )

## ***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:

**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