



# TRAINING AND DIALOGUE PROGRAMS

GENERAL INFORMATION ON  
CONSERVATION AND  
SUSTAINABLE USE OF PLANT GENETIC RESOURCES  
*集団研修「植物遺伝資源の保存と持続的利用」*  
JFY 2010

<Type: Solution Creation / 類型:人材育成普及型>  
NO. J10-00796 / ID. 1080770  
Phases in Japan: From May 30th, 2010 to November 13th, 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**

Recently, it is strongly hoped to establish global conservation and management system of plant genetic resources for breeding materials and to prevent the loss of plant genetic resources caused by the land developing and agricultural modernization. Establishing such system could be fundamental solution for the breadbasket issues which developing countries are facing.

Under such background, this course was started in 1981 for the purpose of strengthening the field of plant genetic resources in developing countries.

## **For what?**

This course is designed to contribute to upgrading knowledge and techniques of the researchers in the field of plant genetic resources so as to train participants to be capable of playing leadership roles in exploration, collection, conservation, management, evaluation, and especially in sustainable use of plant genetic resources in their own countries.

## **For whom?**

This program is offered to the researchers in the field of conservation and management of plant genetic resources.

## **How?**

Participants have opportunities to learn and upgrade their techniques of experiment and knowledge through planning and performing laboratory experiment, data analysis and report making. Subjects of research training are assigned individually through application processes.

## II. Description

1. **Title (J-No.): Conservation and Sustainable Use of Plant Genetic Resources (J1000796)**

2. **Period of program**

<b>Duration of whole program:</b>	April to December, 2010
<b>Preliminary Phase:</b> (in a participant's home country)	April to May, 2010
<b>Core Phase in Japan:</b>	May 30 to November 13, 2010
<b>Finalization Phase:</b> (in a participant's home country)	November to December, 2010

3. **Target Regions or Countries**

Chili, Pakistan, Sri Lanka and Argentina

4. **Eligible / Target Organization**

This program is designed for an organization dealing with management, conservation, and sustainable use of plant genetic resources

5. **Total Number of Participants**

4 participants

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

7. **Program Objective:**

Participants will be able to design action plans for conservation and management of plant genetic resources according to the situations in their own countries.

8. **Overall Goal**

Agricultural productivity will be increased by the breed improvement utilizing conserved plant genetic resources

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

This program consists of the following components. All the contents are subject to changes. Details on each component are given below:

<b>(1) Preliminary Phase in a participant's home country</b> (April 2010 to May 2010) <i>Participating organizations make required preparation for the program in the respective country.</i>	
Expected Module Output	Activities
To understand present status of the field of plant genetic resources in participants' countries and their institutes.	Formulation and submission of Inception Report

**(2) Core Phase in Japan**  
 (May 30, 2010 to November 13, 2010)  
*Participants dispatched by the organizations attend the program implemented in Japan.*

Expected Module Output	Subjects/Agendas	Methodology
To obtain information on current worldwide and regional movement in plant genetic resources, and understand the position of their countries.	(1) Recent international situation on plant genetic resources  a) Outline of Plant Genetic Resources b) The role of Biodiversity International (formerly IPGRI), and other Plant Genetic Resources Institutes c) The International Treaty on Plant Genetic Resources for Food and Agriculture and the Convention on Biological Diversity (CBD)	Lecture
	(2) Recent international issues regarding to the mining of economic potential of plant genetic resources and the relevant intellectual property right.  a) Genetic Resources Preservation and Utilization for Community Development b) Genetic Resources and Intellectual Property Rights c) Genebank Project in Japan and related research	Lecture
To obtain comprehensive knowledge and technology concerning plant genetic resources research fields	(1) The latest methodologies on the exploration, collection, identification and report preparation regarding to the plant genetic resources.	Lecture and Observation
	(2) Methods to evaluate, conserve and seed multiply plant genetic resources based on the NIAS Genebank manual.	Lecture and Experiment
	(3) Methods related to management of a seed storage system. (Including database system: compilation of passport data, evaluation data, seed conservation data).	Lecture
	(4) The examples of plant breeding and research output in Japan	Observation
To improve abilities to carry out research on plant genetic resources in the own subject area through implementing research and compiling its result	(1) Individual Research *Subjects of research training are assigned to participants individually through application processed. Detailed Items of Subject are shown in ANNEX I.	Experiment
	(2) Presentation of Technical Report of Special Research Training	Experiment, Report Making and Presentation

To compile Action Plan to transfer and utilize obtained knowledge and experimental techniques after their return to their countries.	(1) Issue analysis workshop for planning	Report Making and Presentation
	(2) Action Plan guidance	
	(3) Presentation of Action Plan	

**(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.*

Expected Module Output	Activities
To implement an action plan	Application and implementation of the action plan in the participant's country

## <Structure of the program>

1. Preliminary phase (activities in your home country):

Preparation of the inception report

2. Core Phase (activities in Japan):

1<sup>st</sup> week (5/31-6/4)

(1) General orientation on life in Japan and training programs

(2) Issue analysis workshop for planning

(3) Action Plan guidance and presentation

2<sup>nd</sup> and 3<sup>rd</sup> week (6/7-6/18)

(1) Recent international situation on plant genetic resources

(2) Recent international issues regarding to the mining of economic potential of plant genetic resource and the relevant intellectual property right.

(3) The latest methodologies on the exploration, collection, identification and report preparation regarding to the plant genetic resources.

(4) Methods to evaluate, conserve and seed multiply plant genetic resources based on the NIAS Genebank manual.

(5) Methods related to management of a seed storage system. (Including database system: compilation of passport data, evaluation data, seed conservation data).

4<sup>th</sup> week to 23<sup>rd</sup> week (6/21-11/5)

(1) Individual Research

(2) Site visits in Japan

Visit I –Observation of crops and plant genetic resources institutes in the northern Japan

Visit II –Observation of crops and plant genetic resources institutes in the western Japan

Visit III –Wilds species monitoring sites in the central Japan

24th week (11/8-11/12)

Presentation on Individual Research and Action Plan

### **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) Essential Qualifications**

- 1) Current Duties: be engaged in research work in the field of plant genetic resources
- 2) Experience in the relevant field: have more than 3 years' experience in the field of plant genetic resource
- 3) Educational Background: be a graduate of university or equivalents. MSc holder is preferable but non PhD holder.
- 4) Language: have a sufficient command of spoken and written English to be able to conduct research. (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
  - ※Pregnancy : 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 permission from the participant's supervisor ③letter of consent from your Embassy in Japan, ④medical certificate. Please ask National Staffs in JICA office for the details.
- 6) Must not be serving any form of military service.

##### **(2) Recommendable Qualifications**

- 1) Age: be between the ages of twenty-five (25) and forty-five (45) years

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

#### **(1) Application Form**

The Application Form is available at the respective country's JICA office or the Embassy of Japan.

#### **(2) Application Report for Individual Research Training**

To be submitted with the application form. For the instruction for Application Form for Individual Research Training, refer to the ANNEX I.

#### **(3) Nominee's English Score Sheet (if any)**

To be submitted with the application form. If you have any official documentation of English ability (e.g., TOEFL, TOEIC, IELTS), please attach it (or a copy) to the application form.

### **4. Procedure for Application and Selection:**

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

Closing date for application to the JICA Center in JAPAN: **March 25, 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 of Participants:**

After receiving the documents through due administrative procedures in the respective government, the respective country's JICA office (or Japanese Embassy) shall conduct screenings, and send the documents to the JICA Center in charge in Japan, which organizes this project. Selection shall be made by the JICA Center 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) Selection of Individual Research Subjects:**

After receiving application reports for individual research training, which are submitted with application forms, subjects of individual research for each participant accepted shall be adjusted to the participants' capabilities, interests and works by the JICA Center in consultation with the organizations concerned.

The subjects are informed with acceptance notice, and they must not be changed after the notice.

#### **(4) 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 April 22, 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.

## IV. Administrative Arrangements

### 1. Organizer:

- (1) **Name:** JICA Tsukuba
- (2) **URL:** <http://www.jica.go.jp/english/>

### 2. Implementing Partner:

- (1) **Name:** Genebank, National Institute of Agrobiological Science (NIAS)
- (2) **URL:** [http://www.nias.affrc.go.jp/index\\_e.html](http://www.nias.affrc.go.jp/index_e.html)

### 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 Tsukuba International Center (JICA Tsukuba)  
Address: 3-6 Koyadai, Tsukuba-shi, Ibaraki-ken 305-0074, Japan  
TEL: 81-29-838-1111 FAX: 81-29-838-1119  
(where “81” is the country code for Japan, and “29” is the local area code)

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

### 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.

## **V. ANNEX I (Application Report)**

### **Instruction of Application Report for Individual Research Training**

Applicants are requested to submit an application report for individual research training. This report should be submitted together with the Application form. The report is used for the screening of applicants.

Each participant of the training is engaged in individual research on different subjects. Participants will have only one subject respectively, so we need to know your priority for controlling the number of participants in each laboratory.

The subjects on individual research training are given below (A-D). The components of each subject are also shown:

- (A) Searching for the stress resistant accessions using legume genetic resources**
  - Abiotic stress (salt)
  - Biotic stress (bruchid beetle)
  
- (B) Molecular genetic analysis of plant resources**
  - PCR-based analysis
  - DNA sequence-based analysis
  
- (C) Training and development of cryopreservation techniques**
  - Plant tissue culture
  - Development of cryopreservation techniques
  
- (D) Genebank management**
  - Seed storage management, data base
  - Short trips in research teams of genebank affairs

# Application Report for Individual Research Training

**NAME:** \_\_\_\_\_

**Nationality:** \_\_\_\_\_

**E-mail address:** \_\_\_\_\_

Please read "Instruction of Application Report for Individual Research Training" described above, and then reply to questions from (1) to (6) as below. The contents of this report must not be changed after the submission.

## (1) The Subjects of Individual Research Training

Please choose at least 2 subjects from 4 of the list below. Fill in your priority number into the boxes, "Your priority" and fill in "x" into the box when you do not hope the subject as your research. We will show you an example below.

- ※ The subjects which you fill in numbers (1-4) into the box "Your priority" shall be candidates of your individual research training.
- ※ The research subject shall be adjusted to the participants' capabilities, interests and works by supervisors in NIAS and JICA.
- ※ We consider your priority, but it isn't necessarily dispatched as you hope for the convenience of laboratories.
- ※ The subjects for each participant are informed with acceptance notice.
- ※ The subjects must not be changed after the notice of acceptance.

<Example>

	Title of Subjects	Your priority
(A)	Searching for the stress resistant accessions using legume genetic resources	<b>2</b>
(B)	Molecular genetic analysis of plant resources	<b>x</b>
(C)	Training and development of cryopreservation techniques	<b>1</b>
(D)	Genebank management	<b>x</b>

	Title of Subjects	Your priority
(A)	Searching for the stress resistant accessions using legume genetic resources	
(B)	Molecular genetic analysis of plant resources	
(C)	Training and development of cryopreservation techniques	
(D)	Genebank management	

**(2) Describe your research proposals for each selected subject: priority 1 and priority 2. (Subject, Materials, Content, Method, etc).**

Priority	Subject	Your research proposals
1		
2		

**(3) Describe your Academic or Professional Records.**

Name of Institution	Period	Certificates or Titles Obtained

**(4) Describe your Research experiences.**

Subject	Period	Contents (materials, schemes, etc)

**(5) Explain your job experiences.**

Period	Organization	Position
Outline of duties:		

  

Period	Organization	Position
Outline of duties:		

**(6) Major Publications (if any)**

If you have published any scientific papers, please list them (title, year, etc.) and attach the abstract of the publication or essay.

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## **VI. ANNEX II (Inception Report)**

### **Instruction for the Preparation of Inception Report**

Applicants are requested to prepare an inception report on the present situation and condition in their country and their own working place/study field. The inception report should be originally written by the applicants her/himself.

Submit this Inception Report to the staffs concerned in Japan on the first date of the training program. The report will be presented by each participant at an early stage of the training. It is advisable to bring audio and visual aids such as photographs, pictures, slides, videotapes, pamphlets and brochures for the presentation.

### **Inception Report**

**Name:** \_\_\_\_\_

**Country:** \_\_\_\_\_

#### **1. Basic information about you and your organization**

- 1) Your name and your e-mail address
- 2) Name of Organization
- 3) Location of Organization

#### **2. Does your country have the national program on conservation and use of plant genetic resources?**

Yes or No (If yes, please let us know about the next question.)

### **3. The National program on PGR**

- 1) When was the national program on PGR established?
- 2) Which institute organizes and who coordinates the national program on PGR?
- 3) What are major activities involved in the national program?

### **4. Your organization and its feature**

- 1) Organization Chart: (attached) \*Please draw a diagram of your organization and indicate your position
- 2) Principles and roles
- 3) Brief history
- 4) Basic information <annual budget, administrative system, number of employees (by administrative and technical staff), etc>
- 5) Future plan <relationship between the organization and the National Development Plan/Program, major constraints and its possible countermeasures, etc>

### **5. Your job responsibility**

- 1) Your position in the organization:
- 2) Activities of your division/department:
- 3) Your duties:
- 4) Major constraints / issues which you have now and its possible countermeasures:
- 5) Subjects and items which you want to learn in Japan in order to solve the issues which you mentioned in 4) above:

## ***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 Tsukuba International Center (JICA Tsukuba)  
Address: 3-6 Koyadai, Tsukuba-shi, Ibaraki-ken 305-0074, Japan  
TEL: 81-29-838-1111 FAX: 81-29-838-1119