

# Terminal Evaluation

## Latin America and the Caribbean

### 1. Outline of the Project

**Country:**

Paraguay

**Project title:**

The improvement of Vegetable Production Techniques for Small Scale Farmers

**Issue/Sector:**

Agriculture (Horticulture)

**Cooperation scheme:**

Project-type Technical Cooperation

**Division in charge:**

Livestock and Horticulture Division, Agricultural Development Cooperation Department

**Total cost:**

8.13 Million Yen

**Period of Cooperation**

1 April 1997 - 31 March 2002

**Partner Country's Implementing Organization:**

Instituto Agronomico Nacional (IAN)Direccion de Extension Agraria (DEAG)

**Supporting Organization in Japan:**

Ministry of Agriculture, Forestry and Fisheries, National Institute of Vegetable and Tea Science

### Related Cooperation

#### 1-1 Background of the Project

Agriculture is a key industry in Paraguay, as is illustrated by the fact that percent of the labor force is engaged in agriculture. Approximately 200 thousand households, 80 percent of the agricultural population, are small-scale farmers engaged in cotton growing. The recent drop in the price of cotton in international markets and the establishment of MERCOSUR have increased concerns of a reduced income for small-scale farmers and accentuated the need for urgent countermeasures. Under the circumstances, the Government of Paraguay aims at diversifying agricultural products and increasing their competitiveness in international markets. Toward this end, the government requested the Government of Japan to provide Project-type Technical Cooperation focused on:

- (1) introducing vegetables, which are highly profitable even in small-scale farming;
- (2) developing superior cultivation methods to improve and stabilize production;
- (3) preventing environmental pollution caused by unsuitable use of agricultural chemicals; and
- (4) strengthening and extending these techniques to improve the standard of living of small-scale farmers.

#### 1-2 Project Overview

In order to improve the living standard of small-scale farmers and to stabilize small-scale farming, the Project was aimed at installing technology for small-scale vegetable production and conducted the following activities: breeding and selection, development of techniques on vegetable cultivation, development of techniques to control disease and pests and introduction of the techniques to the leading farmers and DEAG extension staff.

##### (1) Overall Goal

- 1) The yearly income of small-scale farmers in the target area is improved through production of vegetables.
- 2) The production quantity and the quality of vegetables that small-scale farmers harvest in the target area are improved.

## (2) Project Purpose

Vegetable production techniques for small-scale vegetable producers are improved by IAN, and the techniques are used by the main small-scale farmers in the target area.

## (3) Outputs

- 1) Appropriate varieties are selected, and they are raised.
- 2) Appropriate cultivation technique is disseminated.
- 3) The occurrence of primary diseases and insect pests is made clear and control techniques are developed.
- 4) Techniques and knowledge developed by the Project are transferred to extension workers from DEAG to main small-scale farmers in the target area.

## (4) Inputs

Japanese side:

Long-term Experts	8	Equipment	146 Million Yen
Short-term Experts	15	Local Cost	63 Million Yen
Trainees received	17	Others	26 Million Yen

Paraguayan side:

Counterparts	22
Local Cost	16 Million Yen

## 2. Evaluation Team

### Members of Evaluation Team

Team Leader: Kozo INADA, Deputy Managing Director, Agricultural Development Cooperation Department, JICA  
Agricultural Policy Cooperation: Akihiko KITA, Ministry of Agriculture, Forestry and Fisheries  
Vegetable Breeding and Cultivation/Plant Protection: Tomotoshi KASHIO, National Agricultural Research Center for Kyusyu and Okinawa Region  
Planning Evaluation/Extension: Noriharu MASUGI, Staff, Livestock and Horticulture Division, Agricultural Development Cooperation Department, JICA  
Project Cycle Management Evaluation: Hiroei ISHIHARA, NIPPON GIKEN Inc.

### Period of Evaluation

21 October 2001-3  
November 2001

### Type of Evaluation:

Terminal Evaluation

## 3. Results of Evaluation

### 3-1 Summary of Evaluation Results

(1) RelevanceThe Government of Paraguay has maintained a policy of diversify in agricultural products and increased competitiveness in international markets and, with the cooperation of international organizations, has carried out projects to promote horticultural products and their distribution.This Project is one of the priori projects of Paraguay, which demonstrate its relevancy.

(2) EffectivenessIn the area of breeding and selection, promising varieties of melon, strawberry and tomato were selected, and their tests for adaptability are in progress.Some of these have the potential to become new varieties in the future.The following activities, which are in the last stage of the breeding cycle, have not been finished: transfer of various examination technologies, Technology transfer of harvesting seed, Establishment of harvesting seed organization, Variety registration work.The counterparts in the field of breeding and selection, however, are believed to be able to continue selective breeding by themselves. On the other hand, the Project has achieved the set results in the other areas; i.e., development of techniques on vegetable cultivation, development of techniques to control disease and pests and extention of the techniques to the main farmers and DEAG extension staff.Some of the main farmers had an extended harvest period and increased revenue as a result

of product sales. Therefore, the Project Purpose has been achieved, except for part of the cooperation output in the field of breeding and selection.

(3) Efficiency Most of the project's outputs have been attained owing to the dispatch of Long and Short-term experts and the provision of machinery and materials by Japan and the appropriate allocation of counterparts on the Paraguayan side. However, some equipment which small-scale farmers might not be able to afford was also supplied. For instance, plastic or glass greenhouses, which were supplied and set up at the project site. Also, some equipment was deemed to be too expensive vis-a-vis the project purpose. The Project activities were adversely affected for the first three and half years by the delay in equipment procurement on the Japanese side and the customs procedure of Paraguay, as well as Paraguayan difficulties in supporting local costs. The experts and the related personnel had to address these problems, which hindered efficient operation of the Project.

(4) Impact Economic impact can not be clarified at the time of terminal evaluation, as the necessary statistics or figures are not yet available. However, since the main farmers have already succeeded in increasing their earnings and reducing costs, a positive economic impact is expected as the techniques are extended to a wider area. Other spillover effects can also be observed, for instance, the spread of the developed techniques among local farmers, and reduction of the usage of agricultural chemicals by one-half to one-third.

(5) Sustainability Some of the main small-scale farmers became able to teach other small-scale farmers the techniques, so it is expected that the transferred techniques will be disseminated. However, in order to continue the research and widely extend the techniques, it is necessary for IAN to maintain the capacity to conduct vegetable research. Also, in terms of extension, DEAGs need to plan the details of utilizing the private sector in extension activities and to improve its management capabilities. It is also safe to assume that the Paraguayan side cannot bear local cost to the degree initially planned throughout the Project period. For the foreseeable future, IAN will continue to rely on the government to fund its activities, and all of the income of IAN earned from these activities should initially be consigned to the national treasury. The timing and rate of the reallocation of independent income are unclear. Therefore, positive indicators in terms of the development and sustainability of project results, vegetable production and organized extension activities are uncertain. In the technical aspect, the transferred techniques have been acquired at the individual level, but not yet sufficiently at the organizational level. Individual counterpart has not reached the level at which the counterpart can set research topics and acquire the necessary research methods to apply toward a solution.

### **3-2 Factors that promoted realization of effects**

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(1) Factors concerning Planning

N/A

(2) Factors concerning the Implementation Process

N/A

### **3-3 Factors that impeded realization of effects**

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(1) Factors concerning Planning The planning stage should have included more consideration on the realistic output for the area of breeding and selection taking technical peculiarities and necessary time into account.

(2) Factors concerning the Implementation Process The Project activities were affected by a one-year delay in the provision of equipment, which was caused by insufficient local costs and a delay in customs procedure. Also, among those IAN staff who were trained in Japan, five staff members (three were counterparts) resigned for personal reasons. These factors are considered to have had a negative influence on the sustainability and efficiency of the Project.

### **3-4 Conclusion**

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Judging from the five criteria, the Relevance and the Impact of this Project are satisfactory. Even though there are remaining activities, the Project is evaluated as effective, because Project Purposes are considered to be achieved by the end of the cooperation period. On the other hand, there still remain concerns and points to be rectified in terms of the Efficiency and Sustainability of the Project.

### **3-5 Recommendations**

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(1) The Government of Paraguay should allocate the necessary budget, consider the organizational structure and assign an adequate number of personnel.

(2) The Paraguayan side should prepare an operation plan and submit it to the JICA office in Paraguay by the end of this Project, in order to materialize the gVegetable and Fruits Production National Plan.

(3) If the Government of Japan should consider the dispatch of Short-term Japanese Experts if necessary, based on the above-mentioned operation plan.

(4) To protect the rights of vegetable breeders, the vegetable seeds provided by Japan in this Project should be used exclusively for research and analysis and should not be disseminated

### **3-6 Lessons Learned**

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(1) The Project Plan for this Project had not been properly documented until the Terminal Evaluation. It is necessary to make a Monitoring Plan at the planning stage, taking future Evaluation into consideration, and make the necessary adjustments during the course of the Project.

(2) JICA should ensure a smooth procedure for dispatch and customs inspection of equipment and machinery.

(3) The recipient Government should allocate an adequate budget to cover local costs.

(4) It is hardly possible to develop a new variety in a five-year project in the field of selection and breeding. Therefore, a plan must set an achievable the Project Purpose both in terms of technical peculiarity and time.

### **3-7 Follow-up Situation**

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N/A