

# Terminal Evaluation

## Latin America and the Caribbean

### 1. Outline of the Project

- Country: Republic of Bolivia
- Project title: The Project for the Dissemination of High-Quality Rice Seeds for Small-Scale Farmers in Bolivia
- Issue/Sector: Agriculture
- Cooperation Scheme : Technical Cooperation Project
- Team in Charge : Field Crop Based Farming Area Team I, Group II, Rural Development Dept.
- Total Cost (As of Feb.2005): 550million yen
- Period of cooperation:  
(R/D):  
May 15 , 2000  
(Duration):  
August 1, 2000 - July 31, 2005
- Partner Country's Implementing Organization:
  - 1) Ministry of Farmers, Agriculture and Livestock Affairs (MACA)
  - 2) Prefecture of Santa Cruz
  - 3) Tropical Agriculture Research Center (CIAT)
- Supporting Organization in Japan: Ministry of Agriculture, Forestry and Fisheries (MAFF)
- Related Cooperation: -

#### 1-1 Background of the Project

The rice cultivation area in Bolivia tends to expand every year. The rice acreage in the year 1995/1996 was around 130,000 hectares and the rice production reaches approximately 320,000 tons, of which the Prefecture of Santa Cruz covers 67% of the acreage and 82% of rice Production.

However, the small-scale farmers that account 90% of the total rice producers and 30% of rice production in Santa Cruz are accustomed to low rice yield(average 1.5 tons) whereas large-scale farmers obtain high rice yield(average 3.0 tons).

Under such circumstances, the Government of Bolivia requested technical cooperation consist of improvement of rice varieties , seed cultivation technology and dissemination that contribute to increase income and stable management of the small-scale farmers in Eastern plains Area as well as food security.

According to the request, the Government of Japan dispatched preliminary study team for identifying relevance, project's potencial and for planning. On May, 2000, Record of Discussion was signed by Implementation study Team and the Project started from August, 2000 for a period of 5 years.

#### 1-2 Project Overview

##### (1) Overall Goal

The rice productivity of small-scale farmers is increased in the selected pilot area.

##### (2) Project Purpose

The dissemination systems of high-quality and high-yield rice seeds for small-scale rice farmers are established in the selected pilot area.

### (3) Outputs of the Activities

1. High-yield and high-quality rice varieties and lines for small-scale rice farmers are selected.
2. The rice seed multiplication technologies for small-scale rice farmers are developed and improved.
3. The high-yield and high-quality rice seeds for the dissemination are cultivated by rice seed producers in the pilot area.
4. The high-yield and high-quality rice seeds are disseminated with improved rice cultivation technologies in the pilot area.

### (4) Inputs (As of February, 2005. \*USD1=120yen)

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#### Japanese Side:

Long-term Experts :	9 persons	Equipment(without equipment accompanied by experts):	89 million yen
Short-term Experts :	8 Persons	Local Cost:	198.5 million yen
Counterpart Training :	24 persons		

#### Bolivian Side :

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Counterpart :17 persons

Facilities and Equipment (CIAT headquarters, CIAT Saavedra and CIAT Yapacaní, CIAT San Pedro)

Local Cost (Facilities and Running Cost) : 32 million yen

### 2. Evaluation Team

Total:4 persons

1. Leader/Dissemination :Mr. Seiichi YOKOI  
Group Director, Group II, Rural Development Department, JICA
2. Selection and Production of Rice Seeds: Mr. Hideo HIRASAWA  
Head, Laboratory of Crop Breeding, Plant-Biotechnology Institute,  
Ibaraki Agricultural Center
3. Project Management: Mr. Koji SUNAZAKI  
Staff, Human Resources Assignment Team, Human Resources Assignment and Development Group, Human Resources  
Assignment Department, JICA
4. Analysis Evaluation: Mr. Masafumi IKENO  
Planner, Consulting Department II, KRI International Corp.

#### Period of Duration :

Feb.12, 2005 - Feb.27, 2005

#### Type of Evaluation :

Terminal

### 3. Results of Evaluation

#### 3-1 Major Achievements

##### [Selection of high-yield and high-quality rice varieties and lines]

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- 2,382 of varieties and lines were introduced and evaluated. For 1,221 of them with useful characters, passport data were prepared and registered in a database of CIAT, and germless were stored. Three(3) varieties for slash and burn cultivation system and two(2) varieties for mechanized cultivation system have already been selected in the Project the target indicator was four(4) ,and adopted as recommended varieties.

## [Seed Production]

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- CIAT became able to produce the total amount of 40 tons/year of the high and certified level seeds (the target indicator of 30 tons/year) with the germination ratio over 90% (the target indicator was 80%). The manuals for small-scale rice seed farmers were prepared as well.
- CIAT counterparts and Extension workers have mastered enough level techniques of rice seed production for extension. Under their instruction, 43 (the target indicator was 30) rice seed farmers produced 147 tons of certified seeds.
- The revolving funds system (NGOs and farmer's cooperatives lend the fund to the farmers for rice seed production) is functioning.
- The Yapacaní Seed Center, which constructed with the help of Japan's Grant Assistance for Grassroots Human Security Projects, seems well operating under the Project's technical and managing instruction.

## [Dissemination]

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- 72 demonstration farms in 58 communities (the target indicator was 50) have been set up in the pilot area. 70% (the target indicator was 40%) of the small-scale farmers in that area participated in the technical trainings held at those demonstration farms.
- Project activities were broadcasted on TV and on radio. Furthermore, the Project prepared brochures, farming calendars, technical documents and a series of booklets on recommended varieties. As a result, 41% of the farmers (the target indicator was 40%) are using recommended varieties now.

## 3-2 Summary of Evaluation Results

### (1) Relevance

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In Bolivia, 45% of the total population are living in rural area, and 94% of them are in poverty and 34% of latter are living in extremely poverty. Under such circumstances in rural area, the agricultural development in Bolivia is important not only for the security of agricultural production supply but also for poverty alleviation.

"Food security" and "poverty-alleviation in rural area" was an important Bolivian Government's policy when the Project was started. Since the greater rice consumption was anticipated, the augmentation of rice production as primary alimentation was significantly important from the aspect of food security policy. The present agricultural policy of Bolivia is principally for productivity improvement and strengthening of competitiveness, and the Ministry of Farmers, Agriculture and Livestock Affairs (MACA) designated rice as focused crop. On the other hand, the Bolivian government had promoted domestic emigration, from Altiplano to Eastern Plains Area. In the first place, the emigrants cultivate upland rice that can be seed directly in slash-and-burn field. It is a key crop for them but its productivity is quiet low. Under such circumstances, increasing the rice productivity through the establishment of dissemination of high-quality rice seeds system met small-scale farmer's needs as well as national domestic emigrant policy.

Therefore, the relevance of the Project was very high.

### (2) Effectiveness

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One of the Project's output was making flow from selection of High-yield and high-quality rice varieties and lines→multiplication of the rice seeds→ training of the rice seed cultivators → dissemination of those seed. Those are all indispensable to build the dissemination system which is the purpose of the Project. Before the Project, CIAT and NGOs didn't work together. It was significant to incorporate them into the implementation organization of the Project.

Four(4) outputs are all attained and all of them exceeded the target indicator. While 43 farmers were trained as rice seed cultivator, however, some farmers could not produce proper seeds. It seems that the number of seed producers exceeded limited capacity of the NGOs extension workers to instruct the farmers appropriately.

Treating 183 tons of rice seeds in 2003/04, the Yapacaní Seed Center is utilized effectively for post-harvest processing. It seems to play an important role in dissemination system in Yapacaní.

Therefore, the Project was effective.

### (3) Efficiency

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Inputs to the Project by Bolivian side were made generally in accordance with the plan. Although ten (10) counterpart personnel changed during the Project period, their respective work was transferred to newcomers without any obstacle to the Project.

Inputs by Japanese side also

Inputs by Japanese side also were made appropriately. All granted equipment is being operated with appropriate management and maintenance. Quality and quantity of the granted equipment was suitable for the project outputs and activities.

Through the utilization of the Yapacaní Seed Center constructed in 2004 rice seed producers have become able to implement post-harvest processing collectively with good management. As a result, the center contributed to realize production of high yield and high quality rice seed in the pilot area. The cooperation with other scheme (Japan's Grant Assistance for Grassroots Human Security Projects) made the Project's efficiency high.

#### **(4) Impact**

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Through the Project implementation, some positive impacts were identified, though no negative impact was observed.

According to a survey in May 2004, the yields of a recommended variety (Tari) at farmers' fields were 2.0 tons in slash-and-burn system and 2.9 tons in the case of cultivation using agricultural machinery. It is expected that the yield will reach the targeted level if CIAT keeps providing the technical services so that the farmers will be able to keep using those high-yield varieties. And if abnormal whether or an outbreak of pests and disease will not take place, the Overall goal may be attained.

CIAT has recognized the importance of extension activities on the basis of the Project experience. This recognition enabled them to have close cooperation between CIAT and the NGOs.

Farmers who had been keeping traditional customs and techniques for a long time began to recognize the availability of modern technologies on the basis of their experiences in the Project.

There was no report on negative impact on the environment caused by the Project. CIAT assigned an environmental specialist to monitor and manage environmental impacts caused by the Project.

#### **(5) Sustainability**

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Prefecture of Santa Cruz has identified the importance of increasing rice production as well as the necessity of poverty alleviation for small-scale farmers who are beneficiaries of the Project. Therefore, the policy environment is favorable for the Project.

CIAT earns self-income from their technical services through the sale of basic and registered seeds and royalties of registered varieties of CIAT. The amount of self-income would meet a part of expenses for sustainable management of the Project. Also, CIAT is going to conduct a project on research, production and diffusion for rice cultivation utilizing external fund. Receiving such external fund for projects and programs will contribute to auto-sustainability of the Project activities.

CIAT is to promote, in close cooperation with the NGOs, a comprehensive technical package covering selection of rice varieties, production and diffusion of rice seeds, which is almost established in the Project. It is deemed that such a technical package would contribute to enhancing the sustainability.

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

1) Bolivia doesn't have public extension worker system. Close cooperation with the local NGOs in extension activities in the pilot area was effective.

2) The cooperation with other scheme (construction of the Yapacaní Seed Center in post-harvest processing of rice seed production) made the Project's efficiency high.

#### **3-4 Factors that impeded realization of effects**

With financial difficulties, project budget of the Bolivian side was tight. The expenditures occasionally could not be guaranteed timely for conducting planned activities.

#### **3-5 Conclusion**

1) The technologies developed through the cooperation between CIAT and JICA have been successfully verified and demonstrated at the pilot area, and transferred to small-scale farmers through the extension workers of the NGOs to a satisfactory extent. The dissemination system, which was established in the Project, had a great impact and, as a result, high-quality and high-yield rice seeds have been successfully disseminated to small-scale rice farmers. This has led to the attainment of the Project purpose.

2) The extension activities need to be further strengthened and expanded in order that recommended varieties with high-yield are disseminated to larger number of farmers with appropriate agricultural technologies for the purpose of improving the productivity and quality of rice.

3) Although necessity of further external supports in technical and financial aspects are observed for development of the activities initiated by the Project, it is appropriate that the Project terminates as planned in the R/D since the Project has achieved its objectives set by the R/D.

### **3-6 Recommendations**

- 1) As for CIAT, necessary budget should be allocated and sufficient number of trained personnel including administration staff and technical staff should be assigned in order to maintain and strengthen the activities.
- 2) Equipment provided through the Project should be maintained and utilized effectively. In addition, for the machinery and equipment utilized for extension activities of the NGOs, it is required to conclude an agreement between CIAT and the NGOs on gratuitous and long-term lease.
- 3) Close cooperation and close communication between CIAT and the NGOs should be assured because it is essential for extending the dissemination system and introducing technologies to small-scale farmers in Yapacaní area.
- 4) For smooth implementation of extension activities, it is recommended that CIAT should provide necessary support to the NGOs such as provision of foundation stock seeds, technical training and information as well as advice in forming a plan of dissemination in the pilot area and other areas. It is also recommended that CIAT should monitor progress of the dissemination and share the issues raised from the activities by continuing to hold the regular meeting or setting up a joint meeting with the NGOs.
- 5) The extension activities, including dissemination of high-yield and high-quality rice seeds with the proper rice cultivation technologies to small-scale farmers should be sustained. For this purpose, it is recommended that the NGOs should ensure continuous assignment of trained extension staff and obtaining and managing necessary funds including the revolving fund initiated by the Project and that CIAT takes responsibility to supervise the NGOs to assure the sustainable operation of the revolving fund.

### **3-7 Lessons Learned**

- 1) In the case of this project, a full scale technical cooperation project in dissemination was designed on the base of the outcome of a JICA individual expert for breeding and multiplication of rice seeds, which generally takes long time to achieve. It proved to be appropriate in this case to take such a realistic and gradual approach by combining different types of cooperation in proper scales taking into consideration the degree of achievement.
- 2) In order to introduce and disseminate technologies in farmer's level, cooperation with local resources including farmer's cooperatives and the NGOs proved effective and is considered as a key to lead good results. Moreover, the scheme of revolving funds has been proved to be workable and it would be useful to demonstrate it as a new model of dissemination system, while intensive efforts would be required to maintain the revolution of the fund appropriately.