MINUTES OF DISCUSSIONS BETWEEN THE JAPANESE FINAL EVALUATION TEAM AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF BOLIVIA ON JAPANESE TECHNICAL COOPERATION FOR THE PROJECT FOR THE DISSEMINATION OF HIGH-QUALITY RICE SEEDS FOR SMALL–SCALE FARMERS IN BOLIVIA

The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Final Evaluation Team (hereinafter referred to as "the Team"), headed by Mr. Seiichi YOKOI, to the Republic of Bolivia from February 13 to February 25, 2005, for the purpose of conducting the joint final evaluation for the Project for the Dissemination of High-Quality Rice Seeds for Small-Scale Farmers in Bolivia (hereinafter referred to as "the Project").

The Joint Evaluation Committee (hereinafter referred to as "the Committee"), which consists of members from JICA and members from the Bolivian side, was jointly organized for the purpose of conducting final evaluation and preparation of necessary recommendations to the respective Governments.

After intensive study and analysis of the activities and achievements of the Project, the Committee prepared the Final Evaluation Report (hereinafter referred to as "the Report") and presented it to the Joint Coordinating Committee.

The Joint Coordinating Committee discussed the major issues pointed out in the Report, and agreed to recommend to their respective Governments the matters referred to in the document attached hereto

The minute is done in duplicate in English and Spanish; each text is considered to be equally authentic; in case of any divergence of interpretation, the English text shall prevail.

Santa Cruz, February 23, 2005

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Mr. Gustavo PEREYRA CARBALLO
Executive Director
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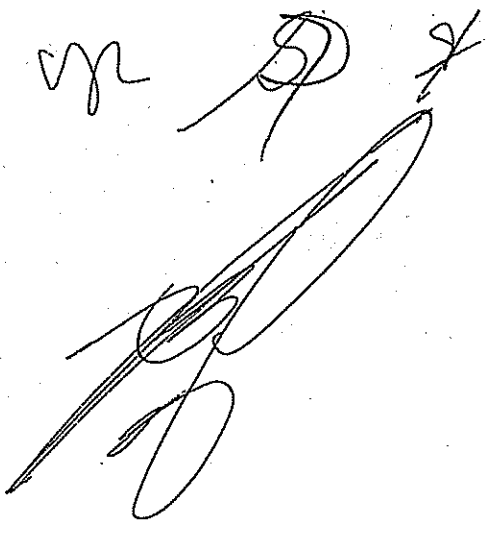
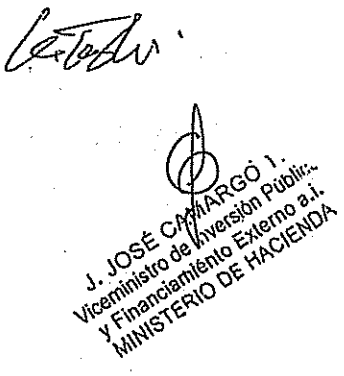
Republic of Bolivia

ATTACHEMENT

1. The Joint Evaluation Committee, which was jointly organized by JICA and the Republic of Bolivia, has presented the Report to the Joint Coordinating Committee.

2. The Joint Coordinating Committee has accepted the Report and taken notes of the recommendations aimed at successfully sustaining and extending the achievement of the Project.





JOINT FINAL EVALUATION REPORT ON THE PROJECT FOR THE DISSEMINATION OF HIGH-QUALITY RICE SEEDS FOR SMALL –SCALE FARMERS IN BOLIVIA

Santa Cruz, February 23, 2005

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Mr. Seiichi YOKOI
Leader
The Japanese Evaluation Team

Mr. Yuri ZURITA
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1. BACKGROUND AND OUTLINE OF THE PROJECT

1-1 Background of the Project

The area of rice cultivation in the Republic of Bolivia reaches around 145,000 hectares and total production of rice is approximately 321,000 tons, of which more than 80% is produced in Santa Cruz located in the Eastern Plains Area. Thus, rice is one of the most important crops in Prefecture of Santa Cruz (hereinafter referred to as "Santa Cruz"). According to the Tropical Agriculture Research Center (hereinafter referred to as "CIAT"), about 18,000 farmers are rice producers in Santa Cruz. However, the large majority of these farmers are small-scale rice producers, having low productivity due to use of traditional varieties and low-quality rice seeds as well as inappropriate land use and inadequate cultivation techniques including those for disease control and soil management. Consequently, the productivity of rice per hectare of small-scale farmers is almost half as much as that of large-scale farmers.

Therefore, distribution of improved high-quality rice seeds of recommended varieties and development of rice cultivation techniques are expected to increase rice productivity, thereby helping to improve the living conditions of rice producers, especially small-scale farmers. This would contribute to the reduction of rural poverty, which is a major concern in Bolivia.

In 1997, the Government of Bolivia made an official request to the government of Japan for implementation of a project to increase rice production and improve living conditions for small-scale farmers in the Eastern Plains Area by developing high-quality rice varieties, improving rice seed production systems, and producing and distributing high-quality rice seeds.

In response to the request, the Japanese government through JICA dispatched the Preliminary Study Team in July 1999 in order to clarify the background of the request, and carried out a Supplementary study in November 1999 for the purpose of confirming the basic framework and preconditions for the proposed technical cooperation, and formulating a clear picture of the Project.

JICA dispatched the Implementation Study Team after a series of preparatory discussions. The Record of Discussions (hereinafter referred to as "R/D") was signed on May 15, 2000, and the Project was commenced on August 1, 2000 for a period of five years.

In the course of the Project, the Consultation Study Team was dispatched in March 2001 for the purpose of formulating the Project Design Matrix (hereinafter referred to as "PDM") and the Plan of Operations (hereinafter referred to as "PO") of the Project.

In January 2003, the Mid-Term Evaluation Study Team evaluated the progress of the Project activities, and made some necessary recommendations for the smooth implementation of the Project during the remaining cooperation period.

A Joint Evaluation Committee was formed for the final evaluation of the Project in February

2005 with about six months remaining in the cooperation period. The duties of the Committee are to evaluate the degree of achievement of the Project objective, to identify remaining problems, and to make any necessary recommendations to the respective governments.

1-2 Outline of the Project

The Project design is stipulated as follows:

(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.

2. OBJECTIVES AND METHODS OF THE EVALUATION

2-1 Objectives of the Evaluation

Evaluation activities were performed with the purpose of:

(1) Evaluating the level of achievement, overall effects and strategies based on the Record of Discussions (R/D), the Plan of Operation (PO), and Project Design Matrix (PDM);

(2) Evaluating the Project in terms of the five criteria that are shown below;

(3) Reviewing the Project activities through the joint study and meetings with experts and their counterpart personnel to improve the Project implementation and to determine necessary modifications of the Project activities, and

(4) Recommending to the related organizations the activities to be implemented after the completion of the Project for the sustainable development of rice cultivation.

2-2 Methods of the Evaluation

Evaluation activities were conducted by the Joint Evaluation Committee (hereinafter referred

to as "the Committee"), which was composed of the Japanese Evaluation Team and the Bolivian Evaluation Team in accordance with the R/D, PO, and PDM. These activities included report analysis, field survey, and discussions with officials/staff members concerned based on the five Evaluation Criteria listed below;

(1) Relevance:

The extent to which the Project is consistent with the priorities and policies of the target group, recipients and donor are evaluated.

(2) Effectiveness:

Effectiveness measures the extent to which the activity achieves its purpose, or whether this can be expected to happen on the basis of the outputs.

(3) Efficiency:

Efficiency measures the output - qualitative and quantitative - in relation to the inputs. This generally requires comparing alternative approaches to achieving the same outputs in order to see whether the most efficient process has been used.

(4) Impact:

A term indicating whether the Project has had effects on its surroundings in terms of technical, economic and socio-cultural, institutional, and environmental factors.

(5) Sustainability:

The extent to which the objectives of the Project will continue to be accomplished after the Project, in other words, the extent to which the groups affected by the Project intend to and/or are able to take charge themselves to continue accomplishing its objectives is evaluated.

2-3 Project Design Matrix for Evaluation

In accordance with the current PDM which was revised and approved by the related organizations at the Joint Coordinating Meeting held in September 2004, the Committee formulated and authorized Project Design Matrix for Evaluation (hereinafter referred to as "PDMe"), as a fundamental material for the evaluation as shown in ANNEX 1.

2-4 Members and Schedule of the Joint Evaluation Committee

2-4-1 Japanese Evaluation Team

(1) Mr. Seiichi YOKOI (Team Leader of Japanese Evaluation Team)
Group Director, Group II, Rural Development Department, JICA

(2) Mr. Hideo HIRASAWA
Head, Laboratory of Crop Breeding, Plant-Biotechnology Institute,
Ibaraki Agricultural Center

(3) Mr. Masafumi IKENO

Planner, Consulting Department II, KRI International Corp.

(4) Mr. Koji SUNAZAKI

Staff, Human Resources Assignment Team, Human Resources Assignment and Development Group, Human Resources Assignment Department, JICA

2-4-2 Bolivian Evaluation Team

(1) Mr. Yuri ZURITA (Team Leader of Bolivian Evaluation Team)

Professional Analyst, General Direction of Agricultural and Food Security

Ministry of Farmers, Agriculture and Livestock Affairs (MACA)

(2) Mr. Juan Carlos PARAVICINI

Project Analyst, Vice-ministry of Public Investment and External Finance (VIPFE)

Ministry of Finance

(3) Mr. Carlos Morales MEJÍA

Officer, Department of Agricultural Service (SEDAG)

Prefecture of Santa Cruz

(4) Mr. Julio Cesar ASBÛN

Officer, Finance Evaluation – Administration

Prefecture of Santa Cruz

2-4-3 The Schedule of the Evaluation

The Joint Evaluation Committee spent ten (10) days from February 14 to February 23, 2005 in Santa Cruz, Yapacaní, and Saavedra.

14/Feb	Mon	Formulation of the Committee Confirmation of the evaluation methods
15/Feb	Tue	Observation of CIAT Saavedra Research Center Interview to counterpart personnel
16/Feb	Wed	Visit Regional Seed Office (ORS) and interview to related personnel
17/Feb	Thu	Discussion with representatives of governmental and non-governmental organizations, farmers' cooperatives (hereinafter referred to as "the NGOs") Discussion with extension workers of the NGOs Observation of CIAT Regional Office in Yapacaní Interview to counterpart personnel
18/Feb	Fri	Visit Yapacaní Municipality Observation of Yapacaní seed center

		Interview to rice seed producers
19/Feb	Sat	Preparation of the draft evaluation report
20/Feb	Sun	Preparation of the draft evaluation report
21/Feb	Mon	Interview to small-scale rice farmers
22/Feb	Tue	Discussion on the results of the evaluation in Joint Evaluation Team
23/Feb	Wed	Discussion on the results of the evaluation in Joint Evaluation Team Signing of the Report Joint Coordination Committee Presentation of the Report Signing of minutes

3. RESULTS OF THE EVALUATION

3-1 Relevance

3-1-1 Relevance of Overall Goal

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

The pilot area of the Project was located in Yapacaní area, which is one of the internal colonies in Bolivia. Target people were small-scale rice farmers who immigrated in the area and were with low productivity. The overall goal was, thus, set to improve their productivity with perspective of poverty alleviation in the area, increase of agricultural production, which is relevant to the national agricultural policy of Bolivia. As described below, the relevance of the overall goal is obviously in the light of the agricultural development policy and social needs.

(1) Relevance of overall goal to the agricultural development policy

About 45% of the total population in Bolivia resides in the rural area. It is considered that 94% of them are poor and 34% are extremely poor. The agricultural development is important not only to reduce poverty, but also to ensure the supply of agriculture products. Consequently, the over goal of the Project is relevant to the national strategies of agricultural and rural development (ENDAR).

(2) Relevance of overall goal to local needs in the target area

Most of poor rice producers in Yapacaní are small-scale farmers depending on slash and burn cultivation system with quite low productivity. Necessity for the improvement of rice productivity is, thus, quite high for small-scale farmers for the viewpoint of poverty alleviation.

3-1-2 Relevance of the project purpose

<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.

As described below, the relevance of the Project purpose from the start of the Project to the present is evident.

(1) Relevance of the Project purpose to overall goal

It is necessary to establish the appropriate dissemination system of high-quality and high-yield rice seeds for small-scale rice farmers in the pilot area for the attainment of improved productivity that is aimed at in the overall goal of the Project. Therefore, the relevance between overall goal and the Project purpose is assured.

(2) Relevance of the project purpose to beneficiaries

Most of rice producers are small-scale farmers depending on slash and burn cultivation system and use rice seeds of traditional varieties produced repeatedly by themselves, which have a quite low productivity. The improvement of rice productivity through the dissemination of high quality seeds is quite high need for small-scale farmers. Therefore, the Project is relevant to beneficiaries' needs.

3-1-3 Relevance of Project Design

The Project design is evaluated as sufficiently relevant, since inputs, activities and outputs have resulted in the attainment of the Project purpose as follows:

(1) Effective relationship between research and dissemination

The Project covers research, production and extension activities for rice cultivation. The research and production activity such as the selection of rice varieties and multiplication of rice seeds are carried out in the experimental station of CIAT in Saavedra. On the basis of the outputs of these activities, the dissemination of the rice seeds to farmers and the formation of rice seed producers are carried out in the pilot area to attain the project purpose.

(2) Relevance of scheme

Effective coordination of inputs, such as experts, counterpart trainings, facilities and equipment, has been done to attain the overall goal and the Project purpose. Since the approach and these inputs have worked effectively, the selection of scheme has been quite appropriate.

3-2 Effectiveness

3-2-1 Achievements of Project Purpose

The Project purpose is "to establish the dissemination systems of high-quality and high-yield rice seeds for small-scale farmers in the pilot area" with a target of increasing the ratio of small-scale farmers using recommended rice varieties up to more than 40%. As a result of the

Project, 41% of small-scale farmers in the pilot area have planted rice varieties recommended by the Project, CAISY and other related organizations. Thus, it is deemed that the Project activities were effective.

3-2-2 Major Achievements of Outputs

The outputs of the Project are selection of the rice varieties and lines, improvement of the rice seed multiplication technologies, production of the rice seeds in the pilot area, and dissemination of the rice seeds in the pilot area. The situation observed in the final evaluation is as follows:

<Output 1> Selection of high-yield and high-quality rice varieties and lines

- 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 germplasm were stored.
- Three varieties, "Cheruje", "Jacuú" and "Tapeque", for slash and burn cultivation system and two varieties, "Paititi" and "Amboró", for mechanized cultivation system have already been selected in the Project.
- According to an experimental data of CIAT CRI-Yapacaní in 2003/04, the average yield of a recommended variety (Cheruje: 4.4 tons/ha) was 22% higher than an average yield of traditional varieties (3.6 tons/ha), which exceeded the target indicator of 20% given in the PDM.

<Output 2> Improvement of the rice seed multiplication technologies

- Technologies of rice seeds production in dry season have been established. Then, the total amount of 39.5 tons of seeds produced exceeding the target indicator of 30 tons given in the PDM.
- Technologies of rice cultivation in upland were examined in CIAT Saavedra and Yapacaní fields. On the basis of the examination, the Research Department and the Seed Production Department of CIAT have prepared technical manuals for small-scale rice seed producers. The manuals have been utilized in the trainings and lectures for the target farmers.
- The post-harvest processing of rice seeds in CIAT Saavedra has been established to realize preparation of high-quality seeds with germination ratio over 90% and the moisture of 13%, in order to conform to the regulations provided by the Regional Seed Office (ORS).
- The Yapacaní Seed Center was set up in 2004 to carry out post-harvest processing and store rice seeds. On the operation and maintenance, operators in the center received appropriate technical training from counterpart personnel of CIAT Saavedra as well as short-term expert

from JICA.

<Output 3> Production of high-yield and high-quality rice seeds in the pilot area

- Since it was proved that extension workers transferred necessary technologies to the rice seed producers in the pilot area, it would be fair to conclude that extension workers of CIAT and the NGOs acquired technologies for rice seed production from CIAT specialists and JICA experts.
- Though some farmers could not produce proper seeds due to bad weather and low-technology for post-harvest processing in 2001/02 and 2002/03, 43 rice seed farmers produced 147 tons of certified seeds in total in 2003/04. Therefore, the target that more than 30 small-scale farmers are to be grown by technical training has been accomplished.
- On the other hand, some farmers, who intended to produce seeds, could not produce proper seeds. It seems that the number of seed producers exceeded limited capacity of the NGO extension workers to instruct the farmers appropriately.
- Treating 183 tons of rice seeds in 2003/04, the Yapacaní Seed Center seems to be utilized effectively for post-harvest processing.

<Output 4> Dissemination of high-yield and high-quality rice seeds with appropriate technology

- 72 demonstration farms in 58 communities have been set up in the pilot area, which exceeded the targeted 50 communities. The demonstration farms were used for comparative demonstration of varieties and technologies as well as for trainings of neighboring farmers.
- Counterpart personnel of the extension section of CIAT and NGO extension workers conducted training and field study for farmers in Yapacaní: 14 times for rice seed production at Yapacaní training center, 4 times at the experimental farm in CIAT Yapacaní, 81 times at community level including 9 times at demonstration farms. Consequently, more than 50%, or around 2000, small-scale farmers participated in the trainings.
- A technical manual for small-scale rice farmers was prepared by the extension section of CIAT on the basis of information collected in the field.
- Project activities were broadcasted ten times on TV and eleven times on radio. Furthermore, the Project prepared seven brochures, four farming calendars, two bundles of technical documents and a series of booklets on recommended varieties. These materials were used to inform the farmers widely and help smooth implementation of extension activities.
- The NGOs promoted dissemination of certified rice seeds using the revolving fund, so that 149 tons of high-quality rice seeds were distributed to 565 small-scale farmers in the pilot

area in 2003/04.

3-3 Efficiency

3-3-1 Input of Both Governments

(1) Input of Bolivian side

1) Allocation of counterpart personnel

In total twenty seven (27) CIAT counterpart personnel (project manager (2), rice selection (5), rice seed production (6), agricultural technology extension (6), public relation (4), planning and monitoring (1), accounting (1), environment (1), secretary (1)) have been adequately allocated. Although ten counterpart personnel changed during the Project period, their respective work was transferred to newcomers without any obstacle to the Project.

2) Provision of Facilities and Equipment

Three project offices, at CIAT headquarters, CIAT Saavedra and CIAT Yapacaní, were provided. A training center was established in CIAT Yapacaní that was utilized as a base of extension activity. In addition, experimental fields in CIAT Saavedra and CIAT Yapacaní were arranged for smooth implementation of the Project.

3) Local Cost of Bolivian side

Total budget of the Bolivian side was 1,162,978 US dollars for fiscal years 2000 to 2004. The expense was utilized according to the plan.

(2) Input of Japanese Side

1) Dispatch of Experts

In total nine (9) long-term experts (chief advisor (2), coordinator (2), rice selection (2), rice seed production (2), extension(1)) and eight (8) short-term experts (post-harvest processing (3), drought-resistant (1), data analysis of baseline survey (1), blast disease (1), farmers' organization(2)) were dispatched. Every expert was dispatched appropriately in considerations of specialty, timing and period.

2) Counterpart Training

Seventeen (17) CIAT counterpart personnel and seven (7) NGO extension workers participated in the training courses in Japan, such as those in seed production, agricultural extension, post-harvest, etc. These trainings complemented the Project activities.

3) Provision of equipment

Total value of equipment granted was 822,075 US dollars in fiscal year 2000 to 2004. 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.

4) Local Cost of Japanese side

Total amount of local cost born by Japanese side was 1,737,500 US dollars in fiscal years 2000 to 2004. The expense was utilized according to the plan.

3-3-2 Efficiency of cooperation with the NGOs

Since the beginning of the Project, the NGOs (nine NGOs in the fourth year) have a close cooperation with the Project in extension activities in the pilot area. For the smooth implementation of activities, the Project input, for each NGO, about 15,600 Bolivianos a year as support cost in addition to lending a motorcycle. As a result, the NGOs extension workers quite contributed to the extension activities quite well including preparation of demonstration farms and technology transfer to farmers. Consequently, the efficiency of input was quite high in cooperation with the NGOs.

3-3-3 Efficiency of cooperation with the Yapacaní Seed Center

Through the utilization of the Yapacaní Seed Center, 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.

3-4 Impact

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

3-4-1 Direct Impacts

(1) <Overall Goal> The rice productivity of small-scale farmers is increased in the selected pilot area.

Recommended rice varieties are on the way of diffusion for small-scale farmers in the pilot area. At this stage, 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 once the high-yield varieties that is now being promoted in the 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.

1) Diffusion of high-quality and high-yield rice seeds

The system that the NGOs distribute certified seeds to small-scale farmers using the revolving fund was established in the pilot area. The NGOs distributed 149 tons of certified

seeds to 565 small-scale farmers in 2004/05. According to a survey in May 2004, 41% of small-scale farmers used recommended varieties in the pilot area in 2003/04.

2) Diffusion of Appropriate Technology for Rice Cultivation

The system that extension workers of the NGOs receive technology transfer from CIAT counterpart personnel is almost established. In addition, the system that small-scale farmers in the pilot area receive technical guidance and instruction from CIAT counterpart personnel and the extension workers of the NGOs is almost established.

3-4-2 Indirect Impacts

(1) Institutional Impacts

CIAT has recognized the importance of extension activities on the basis of the Project experience. In addition, close cooperation between CIAT and the NGOs was being built to establish the dissemination system of the rice seeds in the pilot area.

(2) Economical Impacts

As compared with selling price of consuming rice (Bs.1/kg), selling prices of certified seeds were higher: around Bs. 2.5/kg for varieties of slash-and-burn cultivation and Bs.3.0/kg for varieties of mechanized cultivation. Thus, it was recognized that rice seed producers got better cash income.

(3) Cultural and Social Impacts

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.

(4) Environmental Impacts

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.

3-5 Sustainability

3-5-1 Institutional aspect

(1) Political Support

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.

(2) Cooperation with the NGOs

The NGOs play an important role for transferring technologies to small-scale farmers in the pilot area, through coordination links of the Project. In the same way, CIAT also recognizes the importance of the NGO activities in diffusion system. With such close cooperation between CIAT and the NGOs, the diffusion system seems to contribute to further development.

3-5-2 Financial aspect

(1) Financial Source for Necessary Expenses

With financial difficulties, project budget of the Bolivian side was tight. The expenditures occasionally could not be guaranteed timely for conducting planned activities. It is required to secure sufficient budget for necessary activities.

(2) Own Financial Resources

CIAT earns self-income from their technical services though 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.

(3) Utilization of External Fund

CIAT is going to conduct a project on research, production and diffusion for rice cultivation financed by Prefecture of Santa Cruz (455 thousand US dollars in total) from August 2005 to December 2009 in four rice cultivation areas including Yapacaní area. In addition, CIAT is conducting a development program of rice cultivation financed by FDTA-TH (100 thousand US dollars in total). Receiving such external fund for projects and programs will contribute to auto-sustainability of the Project activities.

3-5-3 Technical aspect

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.

4. CONCLUSIONS AND RECOMMENDATIONS

4-1Conclusions

Based on the series of discussions with officials concerned and counterparts as well as field

survey, the Joint Evaluation Committee has concluded:

(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.

4-2 Recommendations

For further sustainable development of the Project, the Bolivian side and the Japanese side shared the following 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.

4-3 Lessons drawn from the Project

(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.

ANNEX1 Project Design Matrix for Evaluation (PDMe)

Project Name: the Project for the Dissemination of High-Quality Rice Seeds for Small-Scale Farmers in Bolivia

Term of Cooperation: 2000.8.1 - 2005.7.31

Pilot Area: Yapacani municipality, Target Group: Small-Scale Rice Farmers

Preparation of PDMe: Japanese-Bolivian Joint Evaluation Committee 2005.2.14

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumptions
(Overall Goal) The rice productivity of small-scale farmers is increased in the selected pilot area.	The rice yield in the pilot area is increased between 2.2-2.5 t/ha at slash and burn field and between 3.0-3.3 t/ha at machinery field within five years after the end of the project.	Survey	1. Both the central and prefectural governments continue to attach high priority to the food security through increase of rice production.
(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.	40% of small-scale rice farmers in the pilot area plant recommended rice varieties with high quality.	Survey	1. CIAT continues its technical service in the pilot area. 2. Abnormal weather patterns do not occur and unexpected diseases and pests do not occur.
(Outputs) 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. High-yield and high-quality rice seeds for the dissemination are cultivated by rice seed growers in the pilot area. 4. High-yield and high-quality rice seeds are disseminated with the improved rice cultivation technologies in the pilot area.	1-1. Passport data of 700 varieties/lines are prepared through the evaluation of rice gene-resources from the viewpoints of drought-resistant, disease and pest resistant and quality especially. 1-2. The yield of selected rice varieties with drought-resistant, disease and pest-resistant and high-quality increases by 20% in comparison with traditional rice varieties such as "Dorado". 2-1. The rice seed multiplication technologies in dry season are developed, then the foundation stock seeds and certified seeds at CIAT will be possible to produce twice a year and 30 tons in total. 2-2. Technical manuals for rice seed growers are prepared by the production and services department of the CIAT. 2-3. CIAT staffs learn post-harvest technologies for rice seeds. 3-1. Extension workers of the technology transfer department of the CIAT and NGOs learn technologies required of rice production as an instructor. 3-2. 30 farmers will be brought up as rice seed growers through the training of DISAPA. 4-1. Demonstration farm in the farmer's field is set up in 50 rice producing communities in the pilot area. 4-2. 40% of small-scale rice farmers in the pilot area receive technical guidance through the extension workers of the technology transfer department of the CIAT and NGOs. 4-3. Technical manuals for small-scale rice farmers are prepared by the technology transfer department of the CIAT. 4-4. More small-scale rice farmers in the pilot area acknowledge the recommended varieties through the activity of public information. 4-5. NGOs apply the revolving fund to disseminate the high-yield and high-quality rice seeds.	Records of CIAT Report of farmers' cooperatives and/or NGOs Products of DISAPA	1. Small-scale rice farmers in the pilot area understand the objectives of the Project and cooperate with CIAT. 2. The Seed Center in Yapacaní operates normally.

(Project Activities) 1-1. Collecting and evaluating rice gene-resources 1-2. Introducing and selecting high-yield and high-quality rice varieties and lines with drought-tolerance and disease- and pest-resistance 2-1. Developing and improving the technology of breeder's stock seeds and foundation stock seeds on paddy fields 2-2. Improving rice seed production technologies on upland rice fields (CIAT Saavedra) 2-3. Improving pre- and post-harvest technologies for high-quality rice seed production (CIAT Saavedra) 2.4. Conducting technical training for operators of the Seed Center en Yapacaní. 3-1. Conducting technical training for the potential rice seed growers. 3.2. Supporting the organization and operation of the Seed Center in Yapacaní. 4-1. Demonstrating and disseminating recommended rice varieties with the improved cultivation technologies 4-2. Conducting technical training for extension workers of farmers' cooperatives and NGOs	(Input) <BOLIVIAN SIDE> 1. Bolivian counterpart personnel; 1-1. Project Director, 1-2. Project Manager, 1-3. Counterpart personnel for Japanese Experts, 1-4. Administrative and other staff to support the Project activities 2. Physical facilities; 2-1. Buildings, facilities, experimentation fields, and other space for the Project, 2-2. Space for machinery and equipment, 2-3. Electricity, water and communication facilities, 2-4. Other land, buildings and facilities necessary for the Project 3. Operating expenses; 1) Travel costs of counterpart personnel for Field Study and Supervision, 2) Budget for research and extension activities <JAPANESE SIDE> 1. Japanese experts; 1-1. Chief Advisor, 1-2. Coordinator, 1-3. Rice Selection, 1-4. Rice Seed Production, 1-5. Agricultural Technology Extension, Experts of CETABOL, Short-term experts (if necessary) 2. Technical Training of Bolivian counterpart personnel 3. Equipment and Machinery 4. Operating expenses	1. Economic and social conditions remain stable in the pilot area. 2. Farmers' cooperatives and non-governmental organizations cooperate with the Project. 3. Customs formalities do not hinder the delivery of equipment. 4. Security for project activities in the pilot area is ensured. (Preconditions) 1. The relevant research facilities including experimental fields in the main site and sub-site are improved in a timely manner and properly administered by the Bolivian side. 2. Sufficient budget is allocated to the project activities. 3. A sufficient number of CIAT's counterpart personnel including those who receive training in Japan will be steadily assigned to the project.

ANNEX 2 Dispatch of Japanese Experts

Name of Expert	Specialty	Period of Dispatch	Post before Dispatch
Suguru AOYAMA	Chief Advisor	2000.8.1～2003.7.31	JICA
Shinji SEKIGUCHI	Coordinator/Baseline survey	2000.8.1～2003.7.31	Primera Co.,ltd
Tadao KON	Rice Varity Selection	2000.8.1～2002.7.31	Agricultural Ministry
Toyozo TANAKA	Seed production	2000.8.1～2003.7.31	JICA Expert
Sadayoshi TAKEUCHI	Extension	2000.8.1～2005.7.31	Oochi agriculture Cooperative
Masatoshi ISHIHARA	Rice Varity Selection	2002.9.8～2005.7.31	Agricultural Research Center of Ibaraki Prefecture
Kozo TOSHIMITSU	Chief Advisor	2003.7.15 ～2005.7.31	JICA
Yasuo OSUGI	Coordinator/Baseline survey	2003.7.25～2005.7.31	JICA Expert
Hirotaka KONAGAYA	Seed production	2004.1.5～2005.7.31	Life Work Kokusai Kyoryoku
Mitsuru KAWAGUCHI	Post Harvest	2001.4.10～2001.6.9	Miyazaki Prefecture
Masatoshi ISHIHARA	Evaluation for drought tolerance of Upland rice in reproductive stage	2001.5.31～2001.7.30	Agricultural Research Center of Ibaraki Prefecture
Masaaki YAMADA	Data Analysis of Baseline Survey	2001.8.15～2001.9.24	Tokyo Agriculture industry Univ.
Masafumi IKENO	Farmer's organization	2002.10.18 ～2002.12.1	KRI corporation.
Osamu HORINO	Blast disease	2002.3.12 ～2002.5.24	Kyoto Prefectural University
Teruhisa AOKI	Post Harvest Management	2003.4.06 ～2003.5.31	TASK Co., Ltd.
Masafumi IKENO	Association of Seed Production Farmer	2003.10.02 ～2003.11.18	KRI corporation.
Teruhisa AOKI	Post Harvest Management	2004.2.08 ～2004. 5.08	TASK Co., Ltd.

Ayumi FUKUO (JOCV Rural Development Extension Worker, Term 2003 May-2005 April) was assigned at CIAT Yapacani Office as a member of the Project.

ANNEX 3 Acceptance of Counterpart Personnel in Japan

Name of counterpart	Period of training	Training course	Contents	Place of training	Post before training	Present Post
Cezar SAMUR	2000.9.10～9.26	Seed Production	Rice production in IBARAKI	Ibaraki agricultural Center	Director of CIAT	Consultant
Roger TABOADA	2001.2.25～3.10	Seed Production	Upland Rice Breeding	Ibaraki biotechnology Institute	Chief of Research sec.	ASPAR
Pablo ANDRADE	2001.5.7～7.21	Agricultural Extension Planning and Management	Agricultural extension Method	IFIC	Chief of Extension sec.	Consultant
Juana VIRUEZ	2001.7.9～9.15	Rice Variety Selection	Rice Variety Selection	Ibaraki Biotechnology Institute	Engineer of Breeding	Engineer of breeding
Lorgio DOMINGUEZ	2001.9.19～10.20	Rice Post Harvest	Post harvest practice	Tsukuba international center	Engineer of Seed production	Engineer of SC Prefecture
Antonio CUELLAR	2002.5.8～7.23	Agricultural Extension Planning and Management	Agricultural extension Method	IFIC	Engineer of Extension	Chief of Extension
Jose Luiz LLANOS	2002.6.11～7.30	Planning and evaluation Method for Agricultural Development Project	Plan and evaluation for agricultural development	Tokyo agricultural industrial Univ.	Chief of Plan div.	Chief of Plan div.
Emilio CHILENO	2002.6.18～9.6	Rice cultivate practice	Rice cultivate practice	Miyazaki agricultural research center	Director of Yapacani CRI	Director of Yapacani CRI
Victor HUGO	2002.7.9～9.13	Upland rice breeding	Administration of Breeding field	Ibaraki Biotechnology Institute	Technical assistant of Breeding	Technical assistant of Breeding
Mario ZANKIZ	2002.9.3～10.19	Storage going and out control management for rice	Seed Storage control	Miyazaki agricultural research center	Engineer of Seed production	Engineer of seed production
Willam Holters Amelunge	2003.5.6～7.19	Agricultural Extension Planning and Management	Agricultural extension Method	IFIC	Engineer of Extension	Engineer of Extension
Edwin VACA Parada	2003.6.9～9.11	Seed Production	Rice Seed Production in Paddy field	Ibaraki agricultural Center	Engineer of Seed Production	Engineer of Seed Production
Ramiro FERNANDEZ VARGAS	2003.7.11～8.14	Extension	Cooperation NGO extension worker training	Ibaraki agricultural Center Ochi cooperative	Farmer	Farmer
Hugo LOPEZ LCON	ditto	ditto	ditto	ditto	NGO extension worker	Extension worker
David ARTIN CAHUANA MOLLO	ditto	ditto	ditto	ditto	ditto	Ditto
Juan Cruz COAQUIRA	ditto	ditto	ditto	ditto	ditto	Seed Plant Manager

Rene SANCHEZ ALBORNOZ	ditto	ditto	ditto	ditto	ditto	Own business
Enoc CRUZ TRUJILLO	ditto	ditto	ditto	ditto	ditto	Extension worker
Jose Dario CHAVEZ CHAVEZ,	ditto	ditto	ditto	ditto	ditto	ditto
Carballo PEREYRA Gustavo	2004.8.25 ～9.12	Management	Agricultural Research Management	Ibaraki agricultural Center	Director of CIAT	Director of CIAT
Jorge Rene GUZMAN ARNEZ	2004.3.2 ～2007.3.31	Long-term trainee	Master course	Tsukuba University	Engineer of Breeding	Engineer of Breeding
Enoc Sejas Colque	2004.6.14～9.17	Seed Production	Rice Seed Production Paddy field	Miyazaki Agricultural research center	Engineer of Breeding	Engineer of Breeding
Freddy Ledesma Aguilera	2004.7.11～10.29	Rice Variety Selection	The various characteristic test Techniques in rice variety selection	Ibaraki agricultural Center	Chief of Rice Variety Selection	Chief of Rice Variety Selection
Sandoro Karin Chamon Salces	2004.10.11～10.31	Seed Production	Quality control system on rice Seed	Ibaraki agricultural Center	Chief of Seed Production	Chief of Seed Production

ANNEX 4. Provision of Machinery and Equipment by Japanese side

No.		Name	Spec	Maker	Price	Qty.	Section	Actual condition	Remarks
1	2000.9.1	CHAIN SAW	MOD. 036WQ.	STIHL	US$940	1	PRODUCCION/TRANSFERENCIA	A	
2	2000.11.10	AIR CONDITIONER	SOLO FRIO, TIPO SPLIT DE 24.000 BTU	TOSHIBA	US$1,685	1	INVESTIGACION	A	
3	2000.11.10	AIR CONDITIONER	SOLO FRIO, TIPO VENTANA DE 24.000 BTU.	TOSHIBA	US$2,180	2	INVESTIGACION	A	
4	2000.11.10	AIR CONDITIONER	SOLO FRIO, TIPO VENTANA DE 24.000 BTU.	TOSHIBA	US$4,356	4	PRODUCCION	A	
5	2001.2.1	PERSONNEL COMPUTER	PRESARIO 5BW143	COMPAQ	US$3,786	1	CIAT-SANTA CRUZ	A	
6	2001.2.1	PERSONNEL COMPUTER	PRESARIO 7476	COMPAQ	US$2,600	1	INVESTIGACION	A	
7	2001.2.1	PERSONNEL COMPUTER	PRESARIO 7476	COMPAQ	US$2,600	1	PRODUCCION	A	
8	2001.2.1	PERSONNEL COMPUTER	PRESARIO 7476	COMPAQ	US$2,600	1	TRANSFERENCIA	A	
9	2001.2.1	LASER PRINTER	Laser Jet 4050N	Hewlett Packard	US$3,606	1	CIAT-SANTA CRUZ	A	
10	2001.2.1	WEED CUTTER	RDA-110, 1.10m ANCHO DE CORTE.	LAVRALE	US$1,397	1	PRODUCCION	A	
11	2001.1.25	COPY MACHINE	NP7210	CANON	US$6,831	2	INVESTIGACION/PRODUCCION	A	
12	2001.1.25	FAX	L-300	CANON	US$883	1	INVESTIGACION/PRODUCCION	A	
13	2001.1.25	COPY MACHINE	Digital GP-335	CANON	US$7,740	1	CIAT-SANTA CRUZ	A	
14	2001.2.1	WEED CUTTER		STHIL	US$1,278	1	PRODUCCION	A	
15	2000.12.15	GRAIN SELECTOR	SIEVE FOR RICE GASOLINE 3.5 HP	HONDA	US$990	1	TRANSFERENCIA	A	
16	2000.12.15	GRAIN SELECTOR	SIEVE FOR RICE GASOLINE 3.5 HP	HONDA	US$990	1	PDA	A	
17	2000.12.15	GRAIN SELECTOR	SIEVE FOR RICE GASOLINE 3.5 HP	HONDA	US$990	1	CEPY	A	
18	2000.12.15	GRAIN SELECTOR	SIEVE FOR RICE GASOLINE 3.5 HP	HONDA	US$990	1	CEPAC	A	
19	2000.12.15	GRAIN SELECTOR	SIEVE FOR RICE GASOLINE 3.5 HP	HONDA	US$990	1	FENCA	A	
20	2000.12.15	GRAIN SELECTOR	SIEVE FOR RICE GASOLINE 3.5 HP	HONDA	US$990	1	HAMY	A	
21	2001.1.13	RICE MATING DEVICE	702 Remodeling type, main		US$1,420	1	INVESTIGACION		
22	2001.1.13	TRACTOR	DIESEL MODEL:GT21BM ENGINE No. 6569 SERIAL No. 20669 ROTARY FOR TRACTOR MODEL: RL140T(RF1) SERIAL No.: 16268	KUBOTA	US$26,400	1	INVESTIGACION	A	
23	2001.1.13	SAMPLING HULLER	No.08401301 MODEL: H-25M		US$1,480	2	INVESTIGACION	A	

24	2001.1.13	RICE POLISHER	No.08401301 MODEL: SR-405E		US$1,108	1	INVESTIGACION	A	
25	2001.1.13	BALANCE	AB104-S, main body	METORA	US$2,267	1			
26	2001.1.13	DESICATOR	12L/DIA CAPACIDAD: 4.5 L	OMAS	US$1,107	1	PRODUCCION	A	
27	2001.5.31	WAGON CAR 4x4	COLOR: Burgundy/Beige MOTOR No. TB45-041588 CHASIS No. JN1TBSY61Z0520060 MODEL: TGNSLEFY61ERAWFBKB	NISSAN	US$29,900	1	CIAT-SANTA CRUZ	A	
28	2001.5.31	DOUBLE CABIN TRACK	Double cabin 4×4 new COLOR: DARK GREEN MOTOR No, KA24-949807M CHASIS No. 3N6CD13Y2ZK003381 MODEL: CBFULDFD21EWL	NISSAN	US$15,500	1	PRODUCCION	A	
29	2001.5.31	DOUBLE CABIN TRACK	Double cabin 4×4 new COLOR: WHITE MOTOR No, KA24-951393M CHASIS No. 3N6CD13Y8ZK003403 MODEL: CBFULDFD21EWL	NISSAN	$15,500.00	1	TRANSFERENCIA	A	
30	2001.5.31	DOUBLE CABIN TRACK	Double cabin 4×4 new COLOR: RED MOTOR No. KA24-949797M CHASIS No. 3N6CD13Y7ZK003375	NISSAN	US$15,500	1	INVESTIGACION	A	
31	2001.9.4	MOTOR BIKE	clolor: White model:2001 Code : CIAT-16-01-0129 chasis: 9C2JD17301R630512 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO FEDERACION	A	
32	2001.9.4	MOTOR BIKE	color: WHITE model: 2001 Code: CIAT-16-01-0145 chasis: 9C2JD17301R630522 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO AGAYAP	A	
33	2001.9.4	MOTOR BIKE	color: BLACK model :2001 Code: CIAT-16-01-0146 chasis: 9C2JD17301R630493 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO ORS	A	

34	2001.9.4	MOTOR BIKE	color: BLACK model :2001 Code: CIAT-16-01-0142 chasis: 9C2JD17301R630494 accesorios: Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO HAMY	A	
35	2001.9.4	MOTOR BIKE	color: RED MODEL:2001 Code: CIAT-16-01-0144 chasis: 9C2JD17301R630529 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO PDA	A	
36	2001.9.4	MOTOR BIKE	color: RED Model :2001 Code: CIAT-16-01-0143 chasis: 9C2JD17301R630546 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO CEPAC	A	
37	2001.9.4	MOTOR BIKE	color: RED Model :2001 Code : CIAT-16-01-0116 chasis: 9C2JD17301R630544 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/ONG		Stolen 5/Jan 2002
38	2001.9.4	MOTOR BIKE	color: RED MODEL :2001 Code : CIAT-16-01-0114 chasis: 9C2JD17301R630545 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA	A	
39	2001.9.4	MOTOR BIKE	color: WHITE modelo:2001 Code: CIAT-16-01-0147 chasis: 9C2JD17301R630511 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO FENCA	A	
40	2001.9.4	MOTOR BIKE	color: WHITE Model :2001 Code CIAT-16-01-0115 chasis: 9C2JD17301R630511 Accessories : Tool Box	HONDA XLR-125	US$3,543	1	TRANSFERENCIA/NGO CEPY	A	
41	2001.9.19	DIGITAL CAMERA	photo PC 3000Z, smartmedia, card	EPSON	US$1,177	1	CIAT-SANTA CRUZ	A	
42	2002.3.25	SOUND SET	Poder, microfono, TV, consola, conpac disc.	PANASONIC	US$3,316	2	TRANSFERENCIA/CENTRO DE CAPACITACION DE YAPACANI	A	
43	2002.3.25	COLOR LASER PRINTER	HP COLOR 4550N	LASER JET	US$3,764	1	CIAT-SANTA CRUZ	A	
44	2002.3.25	PC	Satellite 1750	TOSHIBA	US$2,413	1	TRANSFERENCIA/COMUNICACIO	A	
45	2002.3.25	MULTIMEDIA	LV-7325(220V/50HZ)	CANON	US$3,977	1	TRANSFERENCIA	A	
46	2002.3.25	MICROSCOPE	MLW JUNIOR LAB T		US$1,700	1	INVESTIGACION	A	
47	2002.3.25	UNIVERSAL OVEN	UM 500 56X48X40 108 LTS		US$1,582	1	INVESTIGACION	A	
48	2002.3.25	COPY MACHINE	NP7210	CANON	US$3,395	1	CIAT-SANTA CRUZ/INVESTIGACION	A	
49	2002.5.14	JEEP	type : Jeep model: Jimmy Year: 2001 color: Green motor No.52618 chasis 100971 placa ET	SUZUKI	US$11,920	1	TRANSFERENCIA	A	

ANNEX 5 Provision of Local Cost by Japanese side

US$ (1 $ =120JPY)

Fiscal year	2000	2001	2002	2003	2004
Operation cost	48,525	73,350	49,275	43,508	41,267
Application cost	26,800	76,867	67,792	92,892	40,033
Infrastructure construction cost	16,008	318,867	—	16,450	4,642
Equipment procured in Japan	71,117	36,292	29,167	57,658	0
Equipment procured in Bolivia	160,100	380,208	—	8,800	0
Equipment use for Expert	44,317	10,858	9,833	13,725	0

ANNEX 6. Budget Allocated for the Project by Bolivian side

(US$)

Type of cost	2000 (August - December)	2001 (January- December)	2002 (January - December)	2003 (January - December)	2004 (January - October)	Total
Personnel	105.442	174.997	167.948	277.850	166.454	892.691
Operative costs	9.501	44.063	72.181	89.631	38.118	253.494
Fixed Assets	0	16.793	0	0	0	16.793
Total	**114.943**	**235.853**	**240.129**	**367.481**	**204.572**	**1.162.978**

- Costs in 2000 were with prefecture source
- Personnel and operatives costs in 2001 were with funds from prefecture and public investment, while fixed assets were purchased investment source
- Costs in 2002, 2003, 2004 were with prefecture source

List of land, buildings and facilities provided by Bolivian Side

Facilities	Santa Cruz	Saavedra	Yapacaní	San Pedro	Other
Infrastructure	-1 office	-1 office -1 deposit -1 laboratory -2 green houses	-1 office -1 deposit	office	
Land		-11 hectares with irrigation system -6 hectares for upland production	-2 hectares in the CRI -3 hectares in farmer fields	-5 hectares well of water	-3 hectares in farmer fields (Canandoa, Hardeman, Colonia San Juan de Yapacaní, Yapacaní faja norte, San Julían)
Machinery		-2 tractors -2 threshers			

ANNEX 7 Allocation of Counterpart Personnel

C/P Name of the counterpart	Speciality	Position	Remarks	Present Post
Gustavo Pereyra	Agronomy	Project Director	Since October, 2002	Project Director
César Samur R.	Agronomy-Pastures	Project Director	From August, 2000 to October 2002	Private consultant
Róger Taboada	Agronomy-vegetable production	Research coordinator	From August, 2000 to October 2003	ASPAR´s Manager
René Guzmán	Agronomy	Principal researcher	Since August, 2000	Studying in Japan
Victor Callaú	Agronomy	Auxiliary	Since August, 2000	Auxiliary
Juana Viruez	Agronomy	Researcher	Since August, 2000	Researcher
Freddy Ledezma	Agronomy	Research Coordinator	Since October, 2003	Research Coordinator
Karin Chamón	Economist	Seed production coordinator	Since October, 2002	Seed production coordinator
Mario Zankis	Agronomy	Seed production coordinator	From August, 2000 to October, 2002	Researcher
Edgar Iturricha	Agronomy	Senior Researcher	Since August, 2000	Senior Research
Adolfo Justiniano	Agronomy	Auxiliary	From August, 2000 to November, 2002	Working in a private company
Lorgio Domínguez	Agronomy	Senior Researcher	From August, 2000 to November, 2002	Working in a private company
Edwin Vaca	Agronomy	Researcher	Since December, 2000	Seed plant responsible
José Luis Escóbar	Agronomy-production system	Technology transfer coordinator	From May, 2002 to November, 2002	Working in CIAT as Export crops leader
Willian Holters	Agronomy	Senior extension worker	Since August, 2000	Senior extension worker
Luis Antonio Cuellar	Agronomy-production system	Technology transfer coordinator	Since August, 2000	Technology transfer coordinator
Luis Rivero	Agronomy	Junior extension worker	From August, 2000 to November, 2002	Working in a rice project financed by FDTA-TH
María Luisa Toledo	Design	Designer	From August, 2000 to November, 2002	Working in a private company
Wildo Aban	Radio and Television	Technician	From August, 2000 to October, 2003	Working in a private company
Emilio Chileno	Agronomy	Senior extension worker	Since August, 2000	Senior extension worker

Enoc Sejas	Agronomy	Junior extension worker	Since April, 2003	Junior extension worker
Demetrio Llanos	Extension worker	Junior extension worker	Since July 2003	Junior extension worker
Alina Groppa	Design	Designer	Since February, 2003	Designer
Maikol Gomez	Radio and television	Technician	Since February, 2004	Technician
Hernán Rosado	Manager	Financial manager	Since August, 2000	Financial manager
José Luis Llanos	Agronomy-project planning	Project coordinator	Since August, 2000	Project coordinator
Bruno Solíz	Agronomy-agriculture economy	Economist	From August, 2000 to October, 2002	Working in a project on environment
Yenny Castrillo	Secretary	Secretary	Since June, 2002	Secretary

ANNEX 8 Attainment of Activities in Plan of Operation (PO)

Plan of Activities		Object of achievement	Progress and Results	Achievement	Reason of delay	Future Plan
Items	Activities					
1. High-yield and high-quality rice varieties and lines for small-scale rice farmers are selected.	1.1 Collecting and evaluating rice gene-resources.	To make and keep passport data of 700 varieties/lines.	It was kept 1221 line and varieties which have well characteristics on: high plant, yield, maturity time, grain quality, drought tolerance, and blast disease and pest resistance.	4		Construct Data base to continue with the introduction and evaluation of specific characteristics of material.
	1.1.1 Collecting, keeping and multiplying rice gene-resources	100-200 varieties/lines per year	Evaluation of 2382 varieties and line which were introduced in the last 5 years (average by year:476)	4		600 variety and line are in multiplying process to renewal seed to be stored for the next four years.
	1.1.2. Evaluating rice gene-resource		It be evaluating drought tolerance on varieties and line which are:	4		It is putting on major emphasis to work over reproductive growth stages.

	1.1.2.1. Drought tolerance	Emergence, growing an reproduction stages	Study of germination and rooting using pods with filter. At 7 leaf stage starting drought treatment for space of 1 week to 10 days. To studies of resistance and recovery: 15 days before flowering until maturity stage. All this activities within green house.	4		This process is continuing.
	1.1.2.2. Disease and pest resistance	Blast disease, brown spot and leaf scald Stem borer	We are preparing the best condition to blast disease apparition. Nitrogen fertilizer is applied to induce blast disease apparition. However resistance evaluation of Helmintosporium, Rinchosporium and worm bore are carried out on field.	3	Difficult to maintain high humid condition.	
	1.1.2.3. Quality	Translucency and cooking quality	We are evaluating with CIAT Colombia methodology the following variables: White core, cooking quality, jillyedly temperature, (%) peeled and (%) polished.	4		

	1.2. Introducing and selecting high-yield and high-quality rice varieties and lines with drought tolerance and disease and pest resistance.	To select 4 recommended varieties	Were selected and recommended the following varieties for manual system: Cheruje(2002), Jacuu(2002), Tapeque(2003). For Mecanized system: Paititi(2003) and Amboro(2003).	4		
	1.2.1. Introducing, evaluating and selecting recommended rice varieties	500-600 lines/year.	Until this date, were introduced 2216 line out of them were evaluated and selected 5 varieties as was mentioned above. Promise line were selected for Manual system: SR99343 Mechanized system: VF99284.	4		Studies on sowing data, level and date fertilizer are carried out. These results will be included in the recommendation of promise line management.
	1.2.2. Keeping and multiplication of breeder's stock seed.	400 Kg/cultivation season	10 varieties at genetic seed level are multiplying under irrigation condition. It is to be used in agronomist studies and breeding, storing and submitted to production component. Production (kg) of genetics seed by season: Summer 2000/01 (616), 2001/02 (539), 2002/03 (450), 2003/04 (900)	4		This season it is producing genetic seed corresponding to 10 variety and 6 promise line.

Items and Activities		Object of achievement	Progress and results	Achievement	Reason of delay	Future plan
Items	Activities					
2. The rice seed multiplication technologies for small-scale rice farmers are developed and improved.		Improvement of the seed production technologies for the center institute Saavedra and seed producer in Yapacani region	Establishment of the technical system for the double cropping, mechanical transplant cultivation and the newly introduced post-harvest machines was done.	3	The advance has been going on belong to the schedule ,so that the plan will be completed by the end of the project.	Diffusion of the seed cultivation technologies for the small scale farmers will be done.
	2-1 Developing and improving the technologies of breeder's stock seeds and foundation stock seeds on paddy fields	The foundation stock seeds and certified seeds at CIAT will be possible to produce twice a year and 30tons in total.	Establishment of the technical system for the double cropping and mechanical transplant cultivation management was done. As the result, 28t (2001), 35t (2002), 41t (2003) and 40t (2004) of products were recorded with CIAT own seed.	4		
	2-1-1 Planning of seed production	Seed production plan	To improve seed production planning, the meeting is organized between three sections in each May and September in year.	4		
	2-1-2 Receiving breeder's stock seed	400Kg/cultivation season	The quantity of the received seed is increasing as 380kg (2001), 400kg (2002), 480kg (2003) and 480kg (2004).	4		
	2-1-3 Preparation and planting	9.5ha	9.2 ha (2001), 11.8 ha (2002), 12.8 ha (2003) and 14.8 ha (2004) of lowland field were transplanted.	4		
	2-1-4 Cultivation management	Report	The cultivation management report is presented each month.	4		
	2-1-5 Harvest	4t/ha	The yeild were 4.1t (2001), 4.0t (2002), 4.1t (2003) and 4.0t (2004).	4	The average yield is varied by the cultivated varieties. When the slash-and-burn cultivation variety was occupied in big area, then the yield should be low.	
	2-2 Improving rice seed production technologies on upland-rice field	Technical manuals for rice seed growers are made	The first edition of the technical manual (text), and the study on the optimum harvest time were published. The report on the methods of conservation is making now.	3	The advance has been going on belong to the schedule, so that the plan will be completed by the end of the project	The report on the methods of conservation will be presented in January.

	2-2-1 Experiment of rice seed cultivation methods	Seeding density, fertilization and optimum harvest time	Seeding density, fertilization experiments were covered by the extension section. The trial of the optimum period of harvest for rice seed production in upland condition is conducted. (Yapacani) For improve seeding technology, seeder test is conducted. (Yapacani)	3	The advance has been going on belong to the schedule, so that the plan will be completed by the end of the project	The results of experiments will use for the seed producers training. Seeder test will finish in December 2004 and will be reported soon.
	2-2-2 Texts preparation for training course	Texts for seed selection, sowing, weed ,fertilizer ,pest and disease control, harvest and post harvest method	The technical manual for seed producers has been published. Now the text of harvest and post-harvest technology for seed producers is prepared.	3	The advance has been going on belong to the schedule, so that the plan will be completed by the end of the project	The text will be done in January and published in April.
	2-3 Improving pre-and post-harvest technologies for high quality rice seed production	To process 60t/year of rice grains for seeds with more than 80% germination	Regulation of the newly introduced processing machines and facilities for the optimum use was done (Saavedra). The prototype of manual threshing machine "Senbakoki" was made and starts capability test. (Saavedra-Yapacani)	3	The advance has been going on belong to the schedule, so that the plan will be completed by the end of the project	Cost down of machine should be necessary for small scale farmers. The machine will demonstrate at the field day of Yapacani.
	2-3-1Receiving grain for rice seed production	60t/year	38t (2001), 110t (2002), 65t (2003) and 52 t (2004)	3	To avoid the problem of contamination seed abandon of receiving farmer's seed from 2004. Total varieties x categories is increasing as 7 in 2001, 21 in 2002, 50 in 2003 and 2004.	With the yield of 4 t/ha and 16 ha cultivated area will achieve 60t/year.
	2-3-2 Drying grain for seed production	Moisture content 13%	The technic to control at 13% of grain moisture was established.	4		
	2-3-3 Processing	More than 80% germination. No other crops, red rice and weed seed. Less than 0.05grain/Kg of other varieties	The processed seed shows always more than 90% of germination, and other regulations are reaching at normal level also.	4		

	2-3-4 Packing and preservation	1150 packs of 40Kg for storage a year	716 packs (2001), 2191 (2002), 1224 (2003) and 988 (2004) were stored.	3	The amount of receiving grain was decreased due to having preoccupation of seed contamination in the seed producers' materials.	The amount of seed in 2004/05 should be increased according to cultivated area expanding. The objective should be achieved.
	2-3-5 Report on certified seed	Report	The report is presented biweekly.	4		
	2-4 Conduct the technical training for the operators of Yapacani seed center.	Training for a responsible person in Yapacani seed center.	Training for a responsible person in Yapacani seed center was done. Interchange of operators between Saavedra and Yapacani seed center was done.	3	The know-how of seed drying must be improved.	The seed dryer will be used more positively for maintain a higher germinavility.
	2-4-1 Practical training and prepare its guide	Prepare of the flow chart on seed processing work, of the guide on each machine's function and operation.	The materials for presentation is preparing.	3	Observed a low germination, and a contamination of red rice, weeds and other crops seed.	It will be prepared up to January and used for the training.

Items and Activities		Object of achievement	Progress and results	Achievement	Reason of delay	Future plan
Items	Activities					
3. High-yield and high-quality rice seed (guarantid seed) for dissemination are cultivated by rice seed growers in the pilot area	3.1 To train rice seed producers who have possibilities of cultivation					
	3.1.1Settig up technical training on the rice cultivation and rice seed production for extension workers of CIAT and NGO's	Extension workers of CIAT and NGO's learn the necessary competencies to be trainers on the rice cultivation and rice seed production	The trainings have held many times every year for them (about 15 technicians) by experts of JICA and CIATetc,.moreover more 10 technicians of them could recive training in Japan	3	2 organization (Federation and HAMY) have changed technicians during 2004	Until April/2005 training courses on rice crop management and methodologies for extension will be carried out
	3.1.2 Conducting practical training courses for rice seed growers	To train 30 rice farmers who will be brought up as rice seed growers by the training courses of DISAPA	In 2003-04 season, 43 farmers have produced 147 tons guaranteed rice seed in the pilot area	4		
	3.1.3 Establishing rice seed cirulation system by NGO's and supporting it	30 tons per year of the certified rice seed	The rice seed growers produced in 2001-02,32 tons; 2002-03,60 tons and in 2003-04,147 tons through the revolving fund of 260000 Bs administrated by 8 associated organizations and their seeds were sold in the pilot area	4		
	3.2 Supporting the organization and operation of the seed plant in Yapacani (UBSY)					
	3.2.1 Supporting the legal and organized consolidation of theUBSY	Supporting the elaboration of the rules related to administration and operation of the UBSY	At January 2004,the board of directos was organized and a contract was drawn for the administration of the UBSY. Now it is being mada preparations for incorporation of the UBSY.	3	The center has just run from January of this year.Time is short.	Supporting the preparations for incorporation and the consolidation of organization
	3.2.2 Supporting the management and processing of rice seed of the UBSY	Supporting the management activities and the processing of rice seed of the UBSY	During the 2003-04 season, 50 farmers processed 183 tons of rice seed in the UBSY	2	Shortage of operating fund, because the center can not take the charge until Sept	Supporting the analysis of running cost and advice about the reduction in it

Items and Activities		Object of achievement	Progress and results	Achievement	Reason of delay	Future plan
Items	Activities					
4. High-Yield and High-Quality rice seeds are disseminated with the improved rice cutivation technologies in the pilot area.	4.1. Demonstrating and disseminating recommended rice varieties with the improved cultivation technologies.					
	4.1.1 Setting up demonstration farms for dissemination recommended varieties and cultivating techniques.	CIAT Yapacani Experimental Station and 50 communities in the pilot area	71 demonstration farms were established in 58 communities and in the CRI-Yapacani demonstrative trials on various experiments were done every years by the technicians of the CIAT	4		
	4.1.2 Extension workers of CIAT and associated organizations conduce technical support for small scale rice farmers	40 % of small scale rice farmers in the pilot area	About 2000 (70 %) small scale farmers have participated of events such as 9 technical travels around of the demonstrative trials; 78 training visits for communities; 4 demonstrative days in CIAT Yapacani; 14 courses on rice production etc,.	4		
	4.1.3 Drawing up teaching material on recommended varieties and cultivating techniques.	Manual on rice production for small scale rice farmers	2 technical manuals were drawn up, one is for small scale rice farmers,other is for extension workers.	4		

	4.1.4 Broadcasting recommended varieties and techniques by mass media and printed matters.	TV and radio-spot, texts, pamphlets and posters.	It is prepared 10 television spots 11 radial jingles, 7 pamphlets, 4 agriculture calendars, 2 folders, 2 technical manuals, 1document with	4		
	4.1.5 Supporting financially the rice seed producers	Dissemination of recommended varieties by the associated organizations through the revolving fund	The seed were disseminated in the pilot area through the revolving fund of 260000 Bs for a loan administrated by 8 associated organizations	4		
	4.2 Conducting technical training for extension workers of farmers cooperatives and NGO's.					
	4.2.1 Conducting technical training for extension workers of farmers cooperatives and NGO's.	10 times per year	Technicians of associated organizations have participated in 48 institutional coordinating meetings, 22 training courses and 18 workshops. 7 among them could recive a training course for a month in Japan	3	2 organization (Federation and HAMY) have changed technicians during 2004	Until April/2005 training courses on rice crop management and methodologies for extension will be carried out

ANNEX 9 Organization chart