

## Summary

Evaluation conducted by: OPMAC Corporation

<b>1. Outline of the Project</b>	
<b>Country:</b> Federative Republic of Brazil	<b>Project Title:</b> Strengthening of the Agricultural Technical Support System to Small-Scale Farmers in Tocantins State Project
<b>Issue/Sector:</b> Agriculture	<b>Cooperation Scheme:</b> Technical Cooperation Project
<b>Division in charge:</b> Field Crop Based Farming Area, Team I, Rural Development Department (Field Corp Based Framing Area Division 1 (Latin America and the Carribbean), Rural Development Department)	<b>Total Cost:</b> 280 million yen
<b>Period of Cooperation</b>	April 1, 2003 to March 31 ,2006
	<p><b>Partner Country's Implementing Organization:</b>            Institute of Rural Development in State of Tocantins (RURALTINS)            Cerrados Agricultural Research Center, Brazilian Agricultural Resea rch Corporation (EMBRAPA-CPAC)            Federal University of Tocantins (UNITINS)</p> <p><b>Supporting Organization in Japan:</b>            Ministry of Agriculture, Forestry and Fisheries            Hokkaido Prefecture</p>
<b>Related Cooperation</b>	None in particular
<p><b>1-1. Background of the Project</b></p> <p>The Government of Brazil has been paying strong attention to the massive potential of agricultural production in the Cerrado Region covering 200 million hectares of land which accounts for approximately 25% of the total national land. The Brazilian agricultural research institutes obtained the capacity to carry out agricultural technology development through the various projects to develop the Region in order to maximize grain production.</p> <p>However, the extension of these techniques to farmers has been less than satisfactory. Even though a part of medium and large-scale farmers have received technical assistance from nurseries run by fertiliser companies working in tandem with a research institute, there is no functional extension system in place at present. In particular, no technical assistance is available for micro and small-scale farmers who lack of access to useful information. As a result, the economic gap between wealthy and poor farmers has been rapidly deteriorating because those poor small-scale farmers could not improve their productivity.</p> <p>Under these circumstances, the Government of Brazil requested the Government of Japan to implement a project for the development and extension of new farming techniques for small-scale farmers in the State of Tocantins, which is at the forefront of the Cerrado Development initiative, with the large share of the small-scale farmers of 60% in the total. In response to this request, the Government of Japan dispatched ex-ante evaluation missions to assess the proposal for the Project. After the consultation, the two governments signed the R/D in 2003 and the three year Project commenced in April, 2003 for the purpose of establishing an agricultural technical extension system with the cooperation of a technical research institute, an extension institute and a university to provide assistance for micro and small-scale farmers in the pilot areas.</p> <p><b>1-2. Project Overview</b></p> <p>The technical cooperation Project was implemented in order to establish an agricultural technical support system for small-scale farmers in the municipalities of Pium and Natividade in the</p>	

State of Tocantins under the cooperation among the Brazilian Agricultural Research Corporation, University of Tocantins, and Institute of Rural Development in State of Tocantins, which are organizations in charge of agricultural research, education and research, and agricultural extension, respectively.

**(1) Overall Goal**

An agricultural technical support system to small scale farmers is established in Tocantins State.

**(2) Project Purpose**

The agricultural technical support system to small scale farmers is established through reference farms in Pilot areas in Tocantins State.

**(3) Outputs**

- 1) Capability of extensionists is enhanced
- 2) Farmer's associations are strengthened.
- 3) Agricultural technologies, which meet farmers' needs, are developed.
- 4) The methodology for extending agricultural technology and information is improved.

**(4) Inputs (as of the Project's termination)**

**Japanese side:**

Long-term Expert: 3 persons	Equipment: 38 million Yen
Short-term Expert: 6 persons	Local cost: 32 million Yen
Trainees received: 17 persons	Other (Dispatch of Study Mission): 11 million Yen
	<b><u>Total: 280 million Yen</u></b>

**Brazilian side:**

Counterpart: 23 persons	Local cost: 13 million Reais,
Land and facilities: Project office in RURALTINS head office, Pium regional office, and Natividade regional office	(equivalent to approx. 67 million Yen)

**2. Evaluation Team**

<b>Members of Evaluation Team</b>	General Manager/Evaluation Design and Management: Mitsue Mishima, Consultant, OPMAC Corporation Evaluation and Analysis: Hisami Nakamura, Consultant, OPMAC Corporation Evaluation of Agriculture/Rural Development: Kiyoko Hitsuda, Consultant, Japan Development Service	
<b>Period of Evaluation</b>	24 November, 2008 to 24 April 2009 (Field survey: 17 January, 2009 to 27 January, 2009)	<b>Type of Evaluation</b> : Ex-post Evaluation

**3. Project Performance**

**3-1. Performance of Project Purpose**

This ex-post evaluation has found that the Project did not lead to the establishment of an extension system for the agricultural techniques researched and demonstrated by the participatory farming techniques utilizing "reference farms". It is, therefore, judged that the Project Purpose was not fully achieved.

At the time of the terminal evaluation for the Project, the Project Purpose was considered to have been achieved because of the achievement of the verifiable indicators in the Project Design Matrix (PDM). However, these indicators were not appropriate to directly judge the attainment of the Project Purpose and their achievement does not automatically mean that the Project Purpose was achieved. In other words, the "agricultural technical support system" should have been clearly defined along with the judgment criteria in the form of quantifiable indicators to confirm the establishment of such a system. In this ex-post evaluation, it is defined as "a system to extend

highly applicable farming techniques to meet the actual needs of farmers which are developed through the cooperation of research and testing institutions for small-scale farmers via farmers' associations", based on the actual approach and activities relating to the agricultural technical support system. Whether or not an extension system is established can only be determined when the organizational and financial feasibility of sustainable extension activities is verified as well as the applicability of the developed techniques. However, the Project did not conduct those assessments.

At the time of the terminal evaluation, an evaluator of agricultural extension commented that there have been still many problems and the system has been still incomplete while the overall shape of the extension system has begun to emerge. In addition, it was pointed that many proposals had been made for the introduction of farming techniques but these techniques had not yet taken root in the Project area". While the Project made efforts to enhance the capability of the extension workers supporting the extension system, their enhanced capability is not yet fully sufficient for the planning, execution and improvement of extension activities without the assistance of an expert.

### **3-2. Achievement Related to Overall Goal**

At the time of the ex-post evaluation, the overall goal has not been achieved.

In regard to the state government plan, even though the actual progress has been somewhat slower than originally planned, the policy of adopting the FORTER system (Fortalecimento do Sistema de Apoio de Tecnologia Agrícola Voltada para os Pequenos Produtores do Estado do Tocantins), which is the agricultural technical support system implemented under the Project, has been maintained with the result that a FORTER extension station had been established in seven municipalities by the time of the ex-post evaluation. However, as already mentioned, the extension system has not been fully established in either the project period or post-Project period so far. Moreover, UNITINS, which acted as the counterpart (C/P) in the research field, has withdrawn its commitment since the end of the Project. No new reference farms hailed as the means of extension have been established in the post-project period. To make matters worse, all of those established under the Project have stopped functioning, resulting in the complete absence of facilities relating to the FORTER system which was intended to link extension activities to research and demonstration activities. Some of the newly established FORTER extension stations have made progress in organizing local farmers but the number of farmers' associations and purpose-based groups is showing a declining trend in the pilot areas, indicating a weakening of the organizational set-up for extension.

### **3-3. Follow-up of the Recommendations by Terminal Evaluation Study**

The terminal evaluation report recommended the recruitment of new human resources at the RURALTINS Headquarters by the time of the completion of the Project for promotion of the FORTER system, but this recommendation has not yet been implemented. Also, other recommendations regarding the strengthening of farmers' organizations, extension and research for further development in the post-project period have not been carried out. Although a FORTER office has been established at the RURALTINS' Headquarters and two former C/P staffs have been assigned, they cannot be specifically devoted on the planning and promotion of FORTER-related activities since they hold other positions.

## **4. Results of Evaluation**

### **4-1. Summary of Evaluation Results**

#### **(1) Relevance**

The relevance of the Project is judged to be inadequate because of the following reasons.

In regard to the consistency of the Project Purpose with the needs of the target group, the needs of small-scale farmers in the target areas were only surveyed halfway through the project period. The fact indicates that the Project was not implemented on the basis of a clear understanding of the local needs. In addition, from the aspect of extension activities, it is physically difficult to manage activities in the two different municipalities which are geographically separated and have different development conditions. Since it requires a certain period of time to establish a proper understanding on the Project by traditional communities, it was not realistic to conduct the

FORTER activities in the spatially-spreaded areas in a short period of time.

From the policy aspect, the Government of Brazil has been mentioned enhancement of support for small-scale farmers as part of its zero hunger campaign. Meanwhile, since reduction of regional disparities is one of the priority issues of Japan's ODA for Brazil is, it is essential for Japan's ODA to support the development of the Northeast and North Regions. Because of the development priorities of the two governments, it can be considered that the Project Purpose is relevant to the policies of the both government of Japan and Brazil.

In terms of appropriateness of the project approach, it was not adequate to implement the Project by the approach of EBRAPA-CPAC, a leading national research institute in Brazil, as the principal implementing body, which aimed to verify applicability of their own rural development system through research activities in the Project since the aim of EMBRAPA-CPAC was not consistent with the Project Purpose of "establishing an extension system linked to research in the State of Tocantins". While it was appropriate to select RURALTINS as a C/P organization because of their function of extension services, there was a room to consider rational to select UNITINS, a research and educational institute of the state, whether their organizational capacity was adequate to conduct the research and demonstration of farming techniques for extension to small-scales farmers.

## **(2) Effectiveness**

The Project Purpose and the Outputs were not sufficiently achieved. As resulting from (i) the ambiguous causal relationship between the Project Purpose and its outputs and (ii) inappropriate important assumptions in the Project Design Matrix (PDM), the overall effectiveness of the Project is judged to be low.

The Project aimed at establishing an agricultural technical support system using "reference farms" but the relevant outputs to the "reference farms" were not clearly identified. Moreover, even though extension linked to research was a principal theme of the Project, the planned outputs did not include "strengthening of the capacity of UNITINS researchers", who could be responsible for research and demonstration.

In regard to the important assumptions, the "provision of farming techniques suitable for small-scale farmers by the EMBRAPA and RURALTINS" should have been the ones at the activity level. However, it is not an appropriate important assumption because this assumption is precisely the purpose of the Project itself. Regarding the situation of the target group of small-scale farmers, possible methods to obtain the funds and materials required for the introduction of new farming techniques by small-scale farmers should have been examined to include into the scope of the Project in order to ensure sustainable extension of new farming techniques. The effectiveness of the Project was damaged by a wrong precondition (availability of sufficient/adequate loans for farmers) and the important assumptions (provision of tractor rental, fertilizer supply and other services by the state government for farmers).

Concerning the important assumption for the capacity building of extension workers (continued motivation of extension workers), there remained an external risk of harm to the effectiveness of the Project since capacity building could not be achieved unless this condition was met.

## **(3) Efficiency**

The terminal evaluation report pointed out that the efficiency of the Project had recovered at the end of the Period though it had been low at the initial stage of the Project due to the delay of the project activities. In this ex-post evaluation, however, the efficiency of the Project is judged to be low since the conversion from inputs to outputs and the cost-benefit performance are limited because of the insufficient achievement of the Project Purpose and the Outputs.

In regard to the adequacy of the inputs, the inputs were not sufficient quantitatively and qualitatively in order to produce the planned outputs and to achieve the Project Purpose. Firstly, the project period of three years was not long enough to achieve the stated Project purpose. To make matters worse, more than one year was used to harmonize the opinions on the project approach on the Brazilian side and Japanese side. The resulting shortening of the actual Project implementation period meant that the inputs and activities were insufficient to produce the Outputs and to attain the Project Purpose. The assignment of C/Ps of the EMBRAPA and UNITINS, which were responsible for the research and demonstration of participatory farming techniques, only one year of their field works in the first year of the Project was not sufficient to establish the linkage

between R&D and extension activities. Meanwhile, the additional input of Japanese extension experts only took place in the final year of the Project. The timing of such input was late and the input amount was insufficient. The organization of local farmers was an important output for the successful achievement of the project purpose but no expert was assigned to teach the participatory method of organizing farmers to the extension workers. The training of C/Ps of extension workers in Japan was concentrated in the final year of the Project and the training effects were questionable from the viewpoint of achieving the intended output. There were also inadequate inputs (to meteorological observation stations and cassava flour mills) in terms of the causal relationship between such inputs and the intended outputs of the Project. These inputs reduced the efficiency of the Project.

#### **(4) Impacts**

The Project has brought about limited impacts.

- Achievement of the overall goal: The impacts of the Project towards the achievement of the overall goal were insufficient because the overall goal was not attained.
- Capacity building of the C/P organization: While the capability of the C/P staff members of the RURALTINS to manage extension activities improved as a result of the Project, their capability to verify appropriate techniques pursued by the FORTER system and to establish an extension through the dissemination of these techniques was not strengthened.
- Small-scale farmers (target group): The level of capacity building achieved greatly differed from one area to another. In some areas, local farmers learned how to run their association, widening the scope of activities of the association (to include joint purchasing, socializing, joint project implementation and other activities). In other areas, the association became defunct. The farming techniques introduced under the Project have been partially adopted by those associations with certain capital or financial resources.
- Policy and institutional set-up: Although the state government of Tocantins has included the systematic establishment of extension stations as key bases for FORTER activities in its multiple year plan, no progress has been made because of the lack of concrete measures to allocate the necessary manpower, budget, and so forth.
- Society and culture: In some villages, the association is used for social purposes to enrich the social lives of its members. Meanwhile, a gap has been emerging between those who can adapt to the new techniques and those who cannot, causing friction in some villages.

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

The sustainability of the outcomes of the Project is limited.

At the end of the Project, the EMBRAPA-CPAC and UNITINS, which had been responsible for the research and demonstration of farming techniques under the Project, withdrew from the Project-related activities and none of the reference farms introduced under the Project have been operating anymore. Because of this, there is no viable link between research and extension using reference farms which was promoted by the FORTER system. Although it was planned to increase the number of FORTER extension stations, no concrete measures have been put in place to establish a system and to allocate budget in order to implement the necessary activities. No one at the RURALTINS is currently responsible for FORTER activities. Nevertheless, there is a hint of sustainability since some of the techniques of which the viability was demonstrated by the Project are now partially employed by small-scale farmers.

### **4-2 Factors Promoting the Project**

#### **(1) Impacts**

Even though the overall goal of the Project was not achieved, some of the activities did have an impact on the RURALTINS and small and medium-scale farmers in the pilot areas. For these people, the Project was the first experience of directly receiving external guidance on the systematic management of an organization and modern farming techniques. The high level of effectiveness of the farming techniques demonstrated at the reference farms strongly stimulated those farmers who had been affordable to adopt those techniques.

## **(2) Sustainability**

Even though the sustainability is limited in general, some of the activities introduced by the Project have been sustained in several communities in the pilot areas. Some of the farming techniques introduced by the FORTER system and farmers' association have taken root in some communities, primarily because of land ownership above a certain level and the accumulation of capital which can be used in these communities. The old settlements with strong villager unity had a base to conduct joint work and such a base has contributed to the sustaining and further development of the association's activities. In the traditional, more closed communities, the devoted activities of extension workers (former C/Ps) born in such a community have gained the trust of local farmers, resulting in the continuation of various activities.

### **4-3. Factors Inhibiting the Project**

#### **(1) Impacts**

The inappropriate project design in order to achieve the overall goal hampered other positive impacts by the Project.

- Adequacy of the project design: While the research and demonstration work required a certain period of time to achieve appropriate results, the original plan was over-ambitious in that it intended establishment of a technical support system in which the research and demonstration results provide the basis for extension in three years. In regard to the FORTER system, although its activities were supposed to be conducted with the collaboration of the EMBRAPA, UNITINS and RURALTINS, such a collaboration system was not yet functioning during the project implementation period.
- Limited scope of the project activities: The FORTER activities actually took place in only a small number of villages in the two pilot areas because of many constraints, including the lack of infrastructure, shortage of researchers and extension workers, closeness of the rural community originating from the social and cultural background and insufficient financial capacity of the farmers to adopt the new techniques. It was unrealistic to rely on the results of the Project at very limited sites in order to establish a state-wide "system".

#### **(2) Sustainability**

For the continuous advancement of the FORTER activities, it was essential to build the capacity of the UNITINS (state research institute) and the RURALTINS (state extension organization) during the project period to establish a strong collaborative relationship to continue the activities in the post-Project period. The failure to establish such a system damaged the sustainability of the FORTER system.

#### **(3) Effectiveness and Efficiency**

The effectiveness and efficiency of the Project suffered from the facts that the planned outputs lacked a clear logical relation to the Project purpose, that the activities were not planned in line with the Project purpose and that a firmly established Project implementation system was absent.

- Adequacy of the Project approach: The survey to gather necessary data for the technical research and demonstration by the EMBRAPA took centre stage and essential activities aimed at "establishing a technical support system" were not necessarily prioritised. Meanwhile, the Japanese side assumed that it would provide training on the researched and demonstrated techniques by researchers for extension workers so that extension workers could provide technical guidance for farmers. This assumption was unworkable as the researchers, extension workers and farmers had not achieved the necessary level of knowledge and skills.
- Adequacy of the preparations for Project implementation: The coordination and collaboration between the Japanese side and the Brazilian C/P organizations (EMBRAPA, a federal organization, and RURALTINS and UNITINS, state organizations) were not exactly smooth and, therefore, a reliable system to implement the Project was not fully established.

- Adequacy of the preliminary study in the target areas: As the preliminary study on the target groups was insufficient, an approach which corresponded to the actual needs of each group was not adopted.

#### **4-4. Conclusions**

The Project could not achieve its purpose, i.e. the establishment of an agricultural technical support system, and there were problems with the relevance, effectiveness and efficiency of the project approach. On the other hand, the Project produced some positive outputs, including the grouping of farmers in associations, strengthening of these associations, research and demonstration of farming techniques using reference farms established with the participatory approach and the display of these techniques at demonstration fields. The successful grouping of farmers and modern farming techniques demonstrated under the Project did have a strong impact on the stakeholders of the Project in the State of Tocantins. It is remarkable that farmers were organized, albeit on a small scale, and modern farming techniques were introduced in Natividade, a community with many traditional small-scale farmers who are conservative and suspicious of any efforts to organize them and to introduce new farming techniques.

However, at the time of the ex-post evaluation, the FORTER system as an output of the Project was virtually not functioning, making it necessary to re-examine the technical support and extension system for small-scale farmers in the State of Tocantins. Based on these observations, it is judged that the arrangements under the Project to establish a system to ensure sustainability were not sufficient.

#### **4-5. Recommendations**

(Recommendations for the JICA)

None in particular.

(Recommendations for the Brazilian Side)

- Analysis of actual examples of the success and failure of the FORTER activities using farmers' associations is essential so that the lessons learned from this analysis can be used for future activities.
- Extension workers of the RURALTINS are needed to obtain participatory development techniques so that they can implement the capacity development of farmers to enhance the capacity of farmers for their self-reliant rural development activities.
- A mechanism should be developed where the UNITINS on being presented with problems by extension workers of the RURALTINS working in the field conducts technical research and development to solve the said problems.

#### **4-6. Lessons Learned**

(Lessons for the JICA)

- Use of clearly defined terms: It is essential to discuss about project components between the Japanese and Brazilian side at the stage of project preparation and to prepare project documents by well-defined terms which never lead misunderstanding mutually.
- Selection of a feasible approach: If the main purpose was the establishment of an "extension" system, the main priority should have been the creation of a system where the necessary techniques could be developed through close collaboration of the three parties, i.e. researchers, extension workers and farmers. It is not necessary to rush towards the development of "new farming techniques" within a limited period.
- Formulation and planning of a Project based on the evaluation results of the outputs of earlier projects: The planning of the Project respected the leadership role of the EMBRAPA-CPAC in view of the long history of JICA's cooperation with them. However, review of past cooperation projects with CPAC should have been conducted to start with to determine a suitable type of assistance to ensure appropriate Project contents.

- Long-term assistance program for the target areas: The formulation of a long-term assistance program which suits the actual conditions of the target areas based on a thorough preliminary study is necessary with a view to implementing the actual assistance in stages.
- Establishment of a project implementation system to suit the purpose: There should have been a preliminary analysis of the role to be played by the EMBRAPA-CPAC, a research organization, in connection with the needs of the target group and the project framework. The use of the UNITIS, an educational research organization, for research on practical farming techniques at the front line of the extension work is questionable. The Project was implemented without a system to organizationally support the research work of the UNITIS. Consequently, it was difficult to obtain sustainability in the technical field. The project implementation system should have been much more appropriate and sustainable in order to achieve the purpose of the Project.
- Periodic follow-up activities: It is expected for the JICA to conduct periodic follow-up attendance in the post-Project period in order to mitigate the negative impacts of the reshuffle of personnel at the C/P organizations to enhance the sustainability of the Project-related activities. This kind of attendance should be able to solve any controversial points between the JICA and C/P organizations, achieving positive learning effects for all of the stakeholders.

(Lessons for the Brazilian Side)

- Lessons for the EMBRAPA-CPAC: Even if the emphasis was placed on research, the EMBRAPA-CPAC should have adopted an approach which would convince the people concerned that the target groups would benefit in the Project period.
- Lessons for the RURALTINS: The RURALTINS should develop the capability to formulate and implement its own projects to deal with the issues in its field of responsibility even if international cooperation is required in some aspects.