

1. Outline of the Project		
Country name: Federative Republic of Brazil		Project name: Strengthening the Agricultural Technical Support System to Small-Scale Farmers in Tocantins State Project
Fields: Agriculture		Assistance type: Technical cooperation project
Supervising office: Field Crop-Based Farming Area Team I, Rural Development Department		Monetary amount of cooperation (at time of evaluation): 220 million yen
Period of cooperation	R/D: February 14, 2003 Extension period: 3 years (April 1, 2003, to March 31, 2006)	Counterpart organizations: Institute of Rural Development in the State of Tocantins (RURALTINS), Brazilian Agricultural Research Corporation (Embrapa), Foundation University of Tocantins State (UNITINS)
		Cooperating organizations in Japan: Ministry of Agriculture, Forestry, and Fisheries; Hokkaido
		Other associated cooperation:
<p>1-1 Background and outline of the Project</p> <p>The Government of the Federative Republic of Brazil (hereinafter “Brazil”) is focusing its attention on the high potential for agricultural productivity in the Cerrado region, which covers 200 million ha and accounts for roughly 25% of the country’s territory. It has therefore implemented various development projects for the purpose of increasing agricultural productivity in the region, and, as a result, Brazilian research institutes have gained the ability to engage in technical development on their own. However, technical extension to farmers has been insufficient. Only a few activities for large- and medium-scale farmers have been executed by nursery or fertilizer companies in cooperation with testing/research institutions, and no functional extension system for farmers exists. In particular, no technical assistance is being provided to micro and small-scale farmers who cannot access information on their own. Thus, lack of improvement among farmers means that the economic gap among them continues to expand.</p> <p>Given these circumstances, Brazil submitted a request to Japan for a project for</p>		

technical development and extension that is matched to Tocantins, a state that stands at the forefront of Cerrado development and which has a high percentage of small-scale farmers (60%). In response, Japan dispatched a preliminary evaluation team and held meetings with the Brazilian side on current conditions and problem analyses in the region. Japan then held project implementation meetings that led to the commencement of a three-year project, beginning in April 2003, intended to strengthen the agricultural technical support system for small-scale and micro farmers based on collaboration with technical R&D institutions, extension institutions, and universities.

1-2 Description of cooperation

- (1) Overall Goal: An agricultural technical support system for small-scale farmers is established in Tocantins State
- (2) Project Purpose: The agricultural support system for small-scale farmers is established through reference farms in pilot areas in Tocantins State.

(2) Outputs of the Project

- 1) The capability of extensionists is enhanced.
- 2) Farmers' associations are strengthened.
- 3) Agricultural technologies that meet farmers' needs are developed.
- 4) The methodology for extending agricultural technology and information is improved.

(4) Inputs (in November 2005, 1 real = 53.8 yen)

Japanese side

Dispatch of long-term experts:	3 experts
Dispatch of short-term experts:	6 experts
Training of C/Ps in Japan	17 C/Ps
Provision of equipment and materials:	870,000 reais (approx. 46,806,000 yen)
Assumption of local costs:	37,781,000 yen

Brazilian side

Allocation of C/Ps:	23 C/Ps
Provision of land and facilities (Central Office, Pium Office, Natividade Office)	
Assumption of local costs:	1,275,800 reais (approx. 68,638,000 yen)

2. Outline of the Evaluation Team

Members	1) Team leader: Kazuo Nagai 2) Agricultural extension: Tsuyoshi Seino 3) Planning management: Hiromi Nai Evaluation and analysis: Takayoshi Itoigawa	Managing Director, JICA Tsukuba Director, Technology Extension Division, Hokkaido Prefectural Donan Agricultural Experiment Station Field Crop-Based Farming Area Team I, Group II, Rural Development Department, JICA International Project Department, Chuo Kaihatsu Corporation
Evaluation period	Sunday, November 6, to Friday, November 25, 2005,	Evaluation type: Final evaluation

3. Outline of Evaluation Results

3-1 Confirmation of achievements

- Achievement of the Project Purpose: By April 2004, the number of farm households to which the Project pilot (local) offices provide service is 165 in Pium and 91 in Natividade. Thus, this indicator has been met.
- Expectation of achieving the Overall Goal: The regions scheduled for extension by FY2009 are listed in the FORTER Project multi-year plan” that was prepared by the state government and RURALTINS. According to the plan, the FORTER system will be applied at 40 local offices in the state, including Pium and Natividade. A budget for FY2006 has already been guaranteed. Training of extensionists for regions to become extension bases in the future has already begun at both the Pium and Natividade Offices as part of this plan.

*FORTER: Strengthening Rural Extension

- Achievement of the Outputs: Project activities moved forward dramatically in the time after the mid-term evaluation (October 2004). However, there are a few indicators for which achievement is thought to be difficult. In addition to a delay in launching the Project in the first fiscal year, reasons for the lack of achievement include the following:
 - 1) PRONAF financing is not being provided in a timely manner.
 - 2) Farmers lack the infrastructure, facilities, and materials and equipment needed for introduction of new technologies.
 - 3) A number of target communities are in remote areas located several hours from their local offices. This makes appropriate follow up by the Project

difficult.

4) Natural disasters and poor weather conditions

- Inputs: For the most part, inputs from both Japan and Brazil have been implemented according to plan and have been put to favorable use in Project activities. Items requiring special mention are provided below:
 - 1) The following inputs were delayed for several months following the start date of the Project:
 - Dispatch of long-term experts and arrival of some machinery and equipment from Japan
 - Allocation of C/Ps and preparation of offices, facilities, etc., by Brazil
 - 2) Based on a decision by the Joint Coordination Committee in June 2006, two Embrapa researchers that had been assigned to local offices were transferred to the Embrapa Tocantins branch in Palmas, and UNITINS researchers (two researchers) were reassigned to UNITINS in Palmas. In response, the extensionist framework was revised at two pilot sites (Pium and Natividade), with an additional extensionist assigned to each office. This resulted in stronger office frameworks.
 - 3) Japan dispatched an additional long-term expert (agricultural extension) from March 2005.
 - 4) The head of the Embrapa Tocantins branch was replaced in April 2005.

3-2 Outline of evaluation results

(1) Relevance

- Although Brazil already possesses sophisticated agricultural technologies, these technologies are not being extended to small-scale farmers, and thus small farms have been left out of development. Because improving agricultural productivity is an essential part of bringing affluence to small-scale farmers who are being left out of development, the needs of the target group (small-scale farmers) for this Project were high.
- The Federal Government of Brazil has established a “Hunger Zero” policy, and has hammered out a plan to strengthen support for small-scale farmers as part of this policy. Moreover, the Multi-Year Plan 2004 to 2007 of Tocantins State mentions improvement of agricultural productivity as a priority issue. Therefore, the Project remains consistent with Brazilian policy.
- One of the priority items of Japan’s cooperation policy for Brazil is correction of

economic disparities among regions. This policy places particular emphasis on development of the northeastern and northern regions of the country. Thus, implementation of a project that supports poor small-scale farmers in Tocantins, which is located in Brazil's northeast, is in conformity with the Japanese government's cooperation policy.

(2) Effectiveness

- The series of Outputs that were established for the Project Purpose—i.e., enhancement of extensionists' capability, organization of farmers, development of technologies that meet farmers' needs, and improvement of extension methodology—form a three-pronged approach (extension, research [technology], and farmers) to achievement of the Project Purpose. All of these are essential if the Project Purpose is to be achieved, and thus establishment of the Outputs is deemed appropriate.
- Through the Project activities, the extensionists assigned as C/Ps for the Project are improving their abilities and self-confidence in providing guidance to farmers. Researchers and extensionists have taken considerable time to discuss activity plans, needs surveys, activity performance, and evaluation of the demonstration unit and verification unit in order to share information. Consequently, mutual collaboration in extension and research has been steadily reinforced.
- Based on the above, it is thought that the Project Outputs are being achieved for the most part. Because extension institutions, research institutions, and farmers are each increasing their capacities and will work together going forward, it is expected that the Project's goal of establishing an extension system will be largely achieved.

(3) Effectiveness

- Activities during the first fiscal year did not proceed very smoothly because of delays in implementation of inputs by both Japan (expert dispatches, some machinery and equipment) and Brazil (allocation of C/Ps, preparation of offices and facilities), insufficient shared recognition of the Project among concerned institutions, inadequate coordination of vehicle use, and other factors.
- Inputs by Japan after the first fiscal year were effective in terms of achieving the Outputs. In particular, the dispatch of a third long-term expert significantly improved Project progress. The inputs from Brazil were also appropriate for the most part. Moreover, the introduction of a demonstration farm made it possible for farmers to obtain technologies in a concentrated and practical manner, thereby

contributing to efficient technical extension.

- The fact that farmers could not obtain PRONAF financing in a timely manner had a major negative impact on achievement of the Outputs, as it affected farmers' adoption of technologies. However, because the 20-reais plot system was introduced, it is expected that the Outputs will be largely achieved by the end of the Project. Although the Project did not get off to such an efficient start, the team found that its efficiency was restored during the Project Period through such responses and innovations as the 20-reais plot system and the demonstration farm.

*PRONAF financing=*Programa Nacional de Apoio a Agricultura Familiar*: Support plan for family-farming agriculture. It is a financing program for small-scale farming households. Although the amount of financing it can provide is low, the program offers favorable interest rates and payment conditions. Although the program offers no-collateral borrowing, borrowers must enter a public organization.

*20-reais plot: Through this system, even farmers that do not qualify for financing receive 20 reais (approximately 1,000 yen) that they can invest. Using equipment and supplies covered by this money, the farmers seek to set up small-scale trial farms on part of their own farms (roughly 200 m²) on which they introduce new technologies. In this way, the farmers can see for themselves the new technologies, compare them with conventional planting, and confirm the results with low financing.

(4) Impact

- The Multi-Year Plan 2004 to 2007 of Tocantins State includes activities to expand the extension system to other areas in the state. It is thought that, if the new agricultural technical support system that was established through the Project (FORTER system) is extended to other regions in the state, the Overall Goal of spreading the system to the entire state will be achieved.
- Other impacts include a change in behavior among the extensionists. They improved their abilities to transfer technology, have a better understanding of their role in the process, and have a greater sense of mission regarding support for small-scale farmers. Moreover, farmers are showing increasing confidence in the extensionists, and they recognize the extensionists as important partners who help them with everything from obtaining PRONAF financing to technical guidance. This can be said to have a significant impact on small-scale farmers, who have been neglected by the government for many years.

(5) Sustainability

- The state government places emphasis on expansion projects for small-scale farmers, and has established expansion of the FORTER system as policy. Plans call for the formulation of a “FORTER project expansion plan” together with RURALTINS, and application of the FORTER system in 40 local offices, including those in Natividade and Pium. The FY2006 budget for implementing these plans has already been secured.
- The continuity of the agricultural technical support system depends on cooperation between research and extension institutions. The role of UNITINS, which is an organization of Tocantins State, will become increasingly important after termination of the Project. If the role of UNITINS in technical development and technical capacity development of extensionists as the research institution for the FORTER system is reinforced, the Project’s organizational sustainability should improve.
- The Project seeks to develop the capacities of extensionists with regard to basic technologies for crop cultivation and reinforcement of farmers’ organizations. In order to ensure technical sustainability, it will be important to further improve the technical capacities of extensionists in areas that include introduction of optimum technologies for regions of varying characteristics and reinforcement of farmers’ organizations. Moreover, development of the technical development organization (UNITINS) will be required due to the need to promote technical development to address farmers’ demands for increasingly sophisticated technologies in the future.

3-3 Factors contributing to emergence of effects (factors pertaining to planning content, factors pertaining to the implementation process)

- In April and May of 2004, the Japanese experts and concerned institutions sought to form a consensus through intensive discussions. These discussions resulted in agreements on the Project implementation structure, the decision-making process, and other items and led to an improvement in Project progress.
- Sequential discussions were held through meetings on various topics, and these discussions improved communication among the concerned institutions.
- Dispatch of a third Japanese long-term expert, concentrated and practical acquirement of technologies by farmers through the opening of a demonstration farm, and provision of opportunities for farmers that do not qualify for PRONAF financing to experience new technologies through introduction of the 20-reais plot

system helped restore Project efficiency.

3-4 Problem areas and factors leading to problems (factors pertaining to planning content, factors pertaining to the implementation process)

- At the Project's beginning, people concerned had various views of what the Project should achieve.
- Farmers could not receive the PRONAF financing needed to introduce technologies in a timely manner. Consequently, farmers lacked funds to purchase necessary equipment and materials when needed and to introduce technologies proposed by the Project.

3-5 Conclusion

Due to inconsistencies in basic understanding and awareness among the research institutions and extension institutions with regard to the direction the Project should take, activities during the first year of the Project and their outputs were poor. However, discussions among the concerned parties led to the implementation of effective measures, which in turn led to improved cooperation by both sides and better activity progress from the second year on. These developments improved Project outputs. In particular, activities to extend agricultural technologies improved remarkably in the second year due to the introduction of methods for supporting farming households, including farm management guidance, establishment of the demonstration unit, and organization of interest groups. Thus, the team feels that, if the Project's current level of activity is maintained, the Project Purpose should be attainable by the end of the Project Period. Accordingly, the Joint Evaluation Committee decided to conclude the Project in March 2006 in accordance with the R/D.

Moreover, although the purpose of the Project is to strengthen the agricultural technical support system, the farmers' associations that were organized during the Project (associations, interest groups, etc.) can do more than simply be recipients of agricultural technology; they can also become organizations that take the lead in rural development. The institutions involved in the Project have recognized this point, and therefore it is expected that action for social development will be implemented in line with expansion of the FORTER system.

3-6 Recommendations

1. Items that should be implemented prior to completion of the Project

- (1) The development of human resources within the RURALTINS Central Office to lead the FORTER project following completion of the Project is an important issue that needs to be addressed during the remaining Project Period. Furthermore, the recruitment of new human resources, including pilot local office extensionists that were engaged in new systems, should be considered.
- (2) The equipment provided to the Project should also be utilized for expansion of the FORTER system after termination of the Project. Therefore, it is recommended that a memorandum on the use of the equipment should be exchanged by the institutions involved and JICA.

2. Expansion program after termination of the Project

(1) Steady expansion of the program to other regions

The framework for the FORTER system—consisting of organization of farmers; methods for validation, demonstration, and transfer of technology; etc.—is supposed to be established by the end of the Project. However, the associations and interest groups that were organized within the associations have not developed to the point that they can initiate activities autonomously without the guidance of the extensionists. Thus, fostering of organization leaders will be important in efforts to further develop these farmers' groups. Moreover, it will be important to develop human resources having a wide perspective through formation of regional leadership networks, information exchanges and interchanges pertaining to organizational activities, and training visits to advanced agricultural regions. In general, the economic impact of the introduction of new crops and/or technologies by farmers should always be evaluated by extensionists themselves in order to further improve extension activities. In this Project, plans call for this process to be handled at the interest-group level following completion of the Project. Although future expansion to other regions should be pursued in accordance with the expansion plan prepared by RURALTINS and SEAGRO (which continues to 2009), in the interest of ensuring steady expansion progress, it is recommended that the FORTER system first be steadily implemented in the pilot regions (Pium and Natividade) based on sufficient understanding of current conditions.

Because many Joint Evaluation Committee members on both the Japanese and Brazilian sides mentioned this point, the committee proposed that the Project reexamine the expansion program.

(2) Establishment of a FORTER promotion department within RURALTINS

As was mentioned in item (1) above, efforts to establish the FORTER system in the pilot regions will be essential following the completion of the Project. Consequently, continuous instruction from the RURALTINS Central Office to both pilot local offices and their extensionists will be indispensable. Moreover, the pilot local offices will take the role of fostering extensionists in other local offices where introduction of the FORTER system is planned.

Therefore, it will be necessary to establish a FORTER Coordinating Office within RURALTINS to take the place of the current Project Central Office as a “control tower” for promoting FORTER after the Project Period. This office will have the following responsibilities:

- 1) Implementation of the FORTER multi-year plan prepared by RURALTINS and SEAGRO
- 2) Promotion of FORTER establishment in the pilot areas (Pium and Natividade)
- 3) Planning and implementation of training for extensionists in newly expanded areas
- 4) Cooperation and coordination with research institutions (Embrapa, UNITINS)

(3) Strengthening of agricultural technologies development in Tocantins State is required for the independence of small-scale farmers

Small-farm agriculture in Tocantins State comes mainly in the forms of basic crops obtained through slash-and-burn subsistence agriculture and extensive livestock production. Thus, the Project was able to establish the FORTER system through application of conventional agricultural technologies that already existed in the area. However, further development of small-scale farmers will require reinforcement of farmers’ associations, technical development that fits with the natural and socioeconomic environments of Tocantins State, and farmers’ entry into the market economy by, among other steps, securing competitiveness through market surveys.

Although RURALTINS already depends on Embrapa for development of individual advanced technologies, the presence of UNITINS will become increasingly important as a partner of RURALTINS in the areas of regional rural development and support for small-scale farmers. Thus, strengthening of UNITINS holds the key to successful expansion of RURALTINS’s operations in the future.

In addition to development of agricultural technologies, specific roles for UNITINS could include the following:

- Development of crops and production methods having significance for small-scale farmers in Tocantins State
- Examination of methods for selling and distributing agricultural products, and study of how regional small-scale farmers should look in the future.

3-7 Lessons learned

Technical cooperation and system financing

In the Project, targeted farmers' ability to receive PRONAF financing is established as a precondition. However, many problems that involved farmers' inability to receive financing at appropriate times emerged. Such problems arose because farmers were unable to receive new loans due to their failure to put together necessary documents or the existence of remaining debts, banks were slow in processing, or sudden changes were made to necessary documents or application deadlines. The existence of these problems had a significant and negative impact on extension of Project outputs in the area of adoption of new agricultural technologies by farmers. Therefore, while it is thought appropriate to utilize systems for providing financing to small-scale farmers in order to promote project outputs should such systems exist, if these systems are to be used in project preconditions, efforts must be made to fully ascertain actual circumstances surrounding the systems beforehand.

The team rates highly the Project's idea of providing 20-reais plots to farmers that cannot obtain PRONAF financing. Among other possible measures is the introduction of a revolving fund system. For example, the Project could purchase lime and distributed it to farmers, who would later pay for the lime after the harvest.