

## Summary of Terminal Evaluation

### 1. Outline of the Project

Country: Republic of Panama

Project Title: Panama Canal Watershed Conservation Project (PROCCAPA)

Issue/Sector: Natural Environment Conservation - Forest Resources Management /  
Afforestation

Cooperation Scheme: Technical Cooperation Project

Division in Charge: Forestry and Nature Conservation Team II, Group I, Global  
Environment Department

Total Cost (as of June 2005): 463,000,000 yen

Period of Cooperation: 1 October 2000 - 30 September 2005

Partner Country's Implementing Organization(s): National Environment Authority  
(ANAM)

Target Area: 16 communities in the western sector of the Upper Panama Canal  
Watershed (El Cacao Commune, Capira District, Panama Province)

Supporting Organization(s) in Japan: Ministry of Agriculture, Forestry and Fisheries;  
Forestry Agency

Beneficiaries: 18 farmers' groups (or some 250 people in total) in the target area; and  
the counterparts, including officials and officers at ANAM, and extension workers at  
the local branch of ANAM.

Related Cooperation: Triple C Project (IFAD); Participatory Community Development  
and Integrated Management of the Alhajuella Lake Subwatershed (JICA; the new project  
requested for 2006)

## 1-1 Background to the Project

Since 1950s, the Panama Canal Watershed has been experiencing deforestation for a number of factors, including expanding farmland and pasture, burning and subsequent extensive pasturage, clearing associated with slash-and-burn farming, and overexploitation. Forest degradation as exemplified by forest decline, soil degradation, soil erosion, the loss of biodiversity, is a major environmental concern high on the development agenda for Panama. There are concerns that a fall in the capacity for water source conservation/recharging as a result of forest degradation is affecting navigation along the Panama Canal. El Nino in 1997 raised concern about environmental conservation and canal navigation during the dry season. These circumstances prompted the Panamanian government in 1997 to establish a law concerning land use planning in the canal watershed. Among other targets, this law called for reducing the proportion of pasture from 39 percent in 1995 to 2 percent and increasing that of afforested land from 0.5 percent in 1995 to 23 percent for the purpose of forest conservation and appropriate land use. To achieve these targets, the National Environment Authority (ANAM), which was reorganized from the National Natural Resources Authority in 1998, formulated administrative guidelines on the relevant policy issues. The guidelines included a plan to promote participatory forest management whereby farmers in the watershed would understand the importance of forest conservation and practice appropriate land use. Against this background, the Panamanian government requested Japan to extend technical cooperation aimed at transferring techniques for sustainable forest management, including agroforestry.

## 1-2 Project Overview

(1) Overall Goal: Land use of the western watershed of the Panama Canal is improved to be more suitable for watershed conservation.

(2) Project Purpose: Members of the farmers' groups assisted by the Project practice participatory activities that contribute to watershed conservation in a sustainable manner.

(3) Outputs

1) Members of the farmers' groups assisted by the Project acquire practical knowledge and technical skills on land use suitable for watershed conservation.

2) Farmers' groups are strengthened to carry out participatory activities that contribute to watershed conservation.

3) Project Personnel acquire knowledge and experience to carry out their extension work

4) Understanding on watershed conservation and its importance are promoted among the participants of the environmental education programs.

(4) Inputs (As of June 2005)

<Japanese side>

1) Long-term experts: 6 experts

(2 Chief advisors/Silviculture experts; 2 experts in Agroforestry; and 2 Project coordinators)

2) Short-term experts: 11 experts

(2 experts in Tropical agriculture, 3 in Participatory development, 1 in Tropical fruits cultivation , 1 in the PCM method, 1 in Soil diagnosis, 1 in Fruit growing, and 2 in Participatory watershed management)

3) Training

13 persons in total, plus one person planned. (1 in Watershed conservation, 1 in Forestry [Joint training], 2 in Silviculture, 6 in Organic farming, 1 in Participatory development, and 2 in Watershed management)

,

4) Equipment:

Equipment: 378,205.94 US dollars in total (Farm tractors, Pickup trucks, Four-wheel-drive vehicles, Thermostats, Hullers, Cultivators, Power generators, Pumps, Audiovisual equipment, Personal computers, etc.

#### 5) Local cost

Total local cost: 831,741.76 US dollars

<Panamanian side>

#### 1) Counterparts:

1 Project director, 1 Project manager, 1 Administrator, 1 expert in Agroforestry, 1 expert in Silviculture, 1 expert in Participatory development, and 5 Extension workers

#### 2) Land and facilities

- Project office (La Chorrera)

Office space: 81 sq. m.

- Subcenter (El Cacao)

Land: 11,910 sq. m. (Subcenter premises: 4,510 sq. m.; Demonstration farm: 7,400 sq. m.)

- Facilities: 1 Seminar room, 2 Offices, Accommodations (4 rooms), 1 Dining room, 1 Nursery, 3 warehouses, and 1 Demonstration farm

#### 3) Local cost (FY2000- FY2004)

Labor costs: 595,723 US dollars

Operating costs: 238,377 US dollars

Total: 834,100 US dollars

## 2. Terminal Evaluation Team

### Members of Evaluation Team

1. Team Leader: Yukihide KATSUTA      Director, Group I, Global Environment Department, JICA

2. Participatory Development: Kenichi ISHIDA Research Associate, Department of Marine Science, Ocean Research Institute, The University of Tokyo
3. Forestation/Agroforestry: Shin MORISAKI Chief, Training Unit, International Forestry Cooperation Office, Planning Division, Private Forest Department, Forestry Agency, Ministry of Agriculture, Forestry and Fisheries
4. Evaluation Management: Kazuo SHIONO Special Advisor, Forestry and Nature Conservation Team II, Group I, Global Environment Department, JICA
5. Evaluation Analysis: Noriko FURUTANI Researcher, Global Link Management, Inc.

Period of Evaluation

3 June - 2 July 2005

Type of Evaluation: Terminal Evaluation

### 3. Results of Evaluation

#### 3-1 Achievement Level

[Project Purpose]

The Project Purpose has been achieved. Members of the farmers' groups assisted by the Project have been practicing participatory activities that contribute to watershed conservation in a sustainable manner.

- Indicator 1 achieved: Some 78 percent of the members of the 18 farmers' groups now practice techniques that contribute to watershed conservation (contour cropping, alley cropping, terrace cultivation, paddy cultivation, the use of organic fertilizers, etc.).
- Indicator 2 achieved: All the 18 farmers' groups now practice no less than five techniques for watershed conservation (contour cropping, alley cropping, terrace cultivation, paddy cultivation, the use of community nurseries, the preparation of organic compost, etc.) in their group plots.

- APRODECA (Farmers' Association of the Upper Panama Canal Watershed), which has been established by members of farmers' groups themselves, is now providing support to local farmers.

[Outputs]

[1] Members of the farmers' groups assisted by the Project have acquired practical knowledge and technical skills on land use suitable for watershed conservation.

The performance level has surpassed a number of target indicators, including (i) 80 percent or more of those trained have acquired enough knowledge and technical skills; (ii) 95 percent or more of those trained practice what they have learned; (iii) 95 percent or more of those trained have shared what they have learned; and (iv) 30 percent or more of those trained are women.

[2] Farmers' groups have been strengthened to carry out participatory activities that contribute to watershed conservation.

- The Project achieved six of the seven indicators for Output 2, including those for the capacity for managing activities (including the holding of regular meetings) and technical skills. The other indicator (an increase in operating funds) has been partly achieved.

[3] The counterparts have acquired enough knowledge and experience to carry out their extension work, including providing participatory training in watershed conservation.

- The farmers' groups say they are satisfied with the extension services provided by the project staff to assist their activities. Manuals, guidelines and a case study book have been prepared and put to use.

[4] Participants in the environmental education programs have deepened their understanding of watershed conservation and its importance.

- Environmental education activities for watershed conservation, including workshops, environmental lectures, and a drawing competition, were conducted. As a result, most

of the participants (including primary and middle school students and adults) showed their interest in watershed/environmental conservation.

#### [Overall Goal]

At the time of this evaluation, little data was available that indicated the achievement of the Overall Goal. However, considering the consistency among different factors in the PDM and the activities by individual farmers' groups, it is likely that the overall goal will be achieved over time if the Panamanian government builds on this project and promotes participatory watershed conservation activities.

### 3-2 Implementation Process

Based on the recommendations by the Mid-term Evaluation Team, this Termination Evaluation Team has characterized APRODECA as the agent for support after the completion of the Project. The team has also signed Minutes of Meeting to that effect. APRODECA is a voluntary association of farm producers that has been established by the target groups of the original project plan (18 farmers' groups, to which one group was added later).

In the second half of the project process, more stress was placed on capacity building of APRODECA. This is a major feature in the implementation process of the Project.

ANAM, the C/P organization in Panama, failed to assign a few of the planned counterparts due in part to limited budget allocations.

### 3-3 Summary of Evaluation Results

#### (1) Relevance

The Evaluation Team considers the Project highly relevant for a number of factors. First, the Project is consistent with the strategic program of the Panamanian government that covers watershed conservation, rural development, and poverty reduction. The

Panama Canal is a national property of strategic importance for the government, and Law No. 21 prescribes conservation, development, and appropriate land use in the canal watershed. Second, environmental conservation and the reduction of income disparities are in conformity with the JICA Country Program for Panama. Third, the Project is relevant to the needs of Panamanian farmers, its beneficiaries.

## (2) Effectiveness

All the four Outputs have contributed to the achievement of the Project Purpose. Major contributing factors in these outputs are shown below:

- *Group organization strategy (corresponding to Output 2).* This strategy has proved highly effective, producing many positive effectives. For example, members who had received training transferred their learned skills and knowledge to other members. They worked together in individual farms, and they conducted exchange and collaboration activities.
- *Environmental education (corresponding to Output 4).* This activity has significantly raise public awareness about the importance of general environmental conservation for generations to come.
- *Technology transfer relevant to the needs of farmers (corresponding to Outputs 1 and 3).* Because the farmers themselves selected and prioritized techniques to be introduced through PRA (Participatory Rural Appraisal), they showed enormous absorptive capacity of technology.

## (3) Efficiency

The inputs from both the Japanese and Panamanian sides were largely relevant and adequate to produce the expected outputs. They were also efficient judging from a high-level of empowerment of farmers and emerging changes in their livelihoods.

## (4) Impact



Unintended positive effects of the Project can be summarized as follows:

- The most significant of all the unintended positive effects is that the farmers organized APRODECA an association of farm producers by the farmers and for the farmers.
- The Project was extensively reported by the media, including TV and radio stations, and major newspapers in Panama.
- Project personnel, including extension workers, were encouraged and inspired by the farmers who challenged themselves to improve their livelihoods in the Project despite many difficulties.
- Watershed conservation activities are being organized and practiced that involve farmers who are not the members of the groups assisted by PROCCAPA (the Panama Canal Watershed Conservation Project).

No major negative effects have been observed.

At the time of this evaluation, the likelihood of the Overall Goal being attained was not high in light of the achievement level with regard to one of the intended positive effects, namely, the Important Assumption: “The Panamanian government continuously promotes participatory watershed conservation, making use of the achievement of the Project.” Regarding this assumption, the Evaluation Team could not confirm the Panamanian government’s commitment to providing extensive support so as to achieve the Overall Goal. Nevertheless, the Evaluation Team has observed a few positive developments as shown below:

- ANAM has properly appreciated the project outputs, studied an appropriate post-project framework, and formulated a plan to build on these outputs.
- In the bulletin of the Panama Canal Authority (ACP), the administrator of ACP and other government officials all agreed that the experience in the Project should be put to good use in other parts of the canal watershed. The ACP administrator was quoted as saying that ACP was looking into applying this model to other regions.
- The Panamanian government is considering granting land certificates to small farmers involved in the Project through CICH (Inter-institutional Commission of the Canal Watershed).

## (5) Sustainability

The sustainability of the farmers' groups--the target groups of the Project--is considered quite high. On the other hand, the expansive sustainability, or the prospect of the project outcomes being extended to other areas, is conditional. Some obstacles stand in the way of the possible extension of the PROCCAPA approach to the whole watershed toward attaining the Overall Goal.

In relation to the former type of sustainability, the farmers have significantly improved their skills and knowledge and put them into practice through the farmers' groups or a cooperative and collaborative mechanism. It has been confirmed that positive changes to their livelihoods increased their self-confidence and aspirations, which in turn placed the groups on a path toward maturity. The sustainability of the farmers' groups has also been enhanced by the prospect that APRODECA, a mutual-help association of farmers, will continue support toward the farmers' groups.

The expansive sustainability, on the other hand, will not be high unless ANAM, the counterpart organization, works toward extending the project outcomes. Although the technical sustainability of ANAM will be high as long as the human resources developed in the Project will be put to effective use, the expansive sustainability will be ensured if APRODECA is placed in a proper position to support farmers outside the western watershed of the Panama Canal and if coordination is improved between the farmers' association on one hand, and CICH, NGOs and other organizations with funds to support them on the other.

### 3-4 Contributing and Inhibiting Factors

The following factors are considered to have contributed to the positive effects of the Project:

#### (1) Concerning the project plan

The project design rested on accurate assessment of the needs of the farmers through PRA and proposal of appropriate techniques based on such assessment.

## (2) Concerning the implementation process

- The group organization strategy has worked, resulting in the development of mechanisms for extension and mutual help.
- The farmers and the project personnel, the intervenient, has built and nurtured strong relationship of trust.
- The PDM providing coordination between APRODECA and PROCCAPA has effectively supported sustainable activities by the farmers.

## 3-5 Conclusion

The Project has fully achieved its purpose. The farmers' groups have been empowered sufficiently; they have organized a self-help association. The project design based on the farmers' needs, as well as the group organization strategy, has proved effective, nurturing a relationship of trust between the project personnel and the farmers. This trusting relationship has contributed to the achievement of the Project Purpose. In that sense, the sustainability of the farmers' groups is high. At the moment, however, the impact and sustainability of the Project is not high in the context of expanding the project outcomes toward the attainment of the Overall Goal. Additional conditions have to be met.

## 3-6 Recommendations

### Measures to be taken by the Project before its completion

During the project period, the following measures should be taken to ensure that ANAM will take full ownership of the ongoing activities after this technical cooperation project is completed:

- Make necessary arrangements to build the capacity of APRODECA so as to bolster the activities of the farmers' groups for the purpose of maintaining and building on the project outcomes.

- Secure funds necessary for taking the step described above. To this end, ANAM should secure sufficient allocations from its budget or the budget of other agencies concerned.
- Improve coordination with other agencies concerned.

#### Measures to be taken after the project completion

After the completion of the project, the following measures should be taken to build on the project outputs and disseminate the RPOCCAPA approach to other parts of the western watershed of the Panama Canal:

- ANAM should monitor the activities of the groups assisted by RPOCCAPA. It should also secure the budget to take advantage of the extension workers whose capacity has been improved by the Project so that extension services will be continued. These measures are necessary to ensure the sustainability of these groups.
- ANAM should secure the budget to provide OJT and other training to newly recruited extension workers. This budget is necessary to support the plan that is being prepared to ensure the expansive sustainability of the Project, or the dissemination of the PROCCAPA approach.
- CICH should establish a stronger coordination system for participatory watershed conservation by involving and coordinating other donors and agencies concerned, so that experiences and lessons learned in this sector will be better shared.
- ANAM should encourage other agencies concerned to allocate the budget for supporting APRODECA and other organizations of farmers. It should also encourage project implementing agencies to secure budget allocations for extending participatory watershed conservation.
- JICA should provide additional advice on the activities mentioned above to ANAM and other agencies concerned so that the PROCCAPA approach will be promoted and extended.

- ANAM should realize a plan to take advantage of its Center for Sustainable Development (CEDESOC) in researching and developing training programs for newly recruited extension workers, as well as farmers, who play an important role in ensuring the sustainability of PROCCAPA and other similar projects.

### 3-7 Lessons Learned

The PROCCAPA approach of participatory watershed conservation is characterized by its group organization strategy, trusting relationship among the stakeholders, and an emphasis on the learning process. In relation to these characteristics, the following lessons have been learned:

- The group organization strategy, which rests on the organizing and effective use of a group, is effective in disseminating new techniques among farmers and promoting mutual-aid.
- The trusting relationships between farmers and the intervenient is highly instrumental in participatory development/
- In evaluating a participatory project, a special emphasis should be placed on the extent to which the farmers have been empowered and how.
- The “learning process” is important for the empowerment of local people. It may seem counterproductive in the short-term, but it is a process of continuous improvement toward a higher level of their empowerment.
- Gradual reduction of intentional intervention by the intervenient will foster ownership by farmers.

If there is a significant gap between the Project Purpose and the Overall Goal in the Project Design Matrix, the process from the former to the latter may have to be integrated into the project process itself, rather than being left dependent solely on the Important Assumptions.