

## Summary

**Evaluation conducted by:** Atau Kishinami  
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<b>1. Outline of the Project</b>	
<b>Country:</b> Republic of Panama	<b>Project title:</b> Panama Canal Watershed Conservation Project
<b>Issue/Sector:</b> Environment	<b>Cooperation scheme :</b> Technical Cooperation Project
<b>Division in charge:</b> Forest Conservation Team II, Group I, Global Environment Department	<b>Total cost :</b> 548 million yen
<b>Period of Cooperation</b>	1 October 2000 - 30 September 2005
<b>Related Cooperation</b>	Triple C Project (International Fund for Agricultural Development, IFAD)
<p><b>1-1. Background of the Project</b></p> <p>Since the 1950s, the Panama Canal Watershed has experienced deforestation caused by, among others, expanding farmland and pastureland, burning and subsequent extensive pasturage, clearing for slash-and-burn farming, and overexploitation. Forest degradation including forest decline, soil degradation, soil erosion and loss of biodiversity is a major environmental concern high on the development agenda for Panama. There is concern about the negative effect of the declining capacity for water source conservation/recharging caused by forest degradation on navigation through the Panama Canal in the dry season. El Niño in 1997 raised the sense of crisis concerning environmental conservation and canal navigation in the dry season.</p> <p>These circumstances prompted the Government of Panama to establish a law concerning land use planning in the canal watershed in 1997. Among other targets, this law calls for reducing the proportion of pasture from 39% in 1995 to 2% and increasing that of afforested land from 0.5% in 1995 to 23% for the purpose of forest conservation and appropriate land use. To achieve these targets, the National Environment Authority (ANAM), which was reorganized from the former National Natural Resources Authority in 1998, formulated administrative guidelines on the relevant policy issues. The guidelines include 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 Government of Panama requested the Government of Japan to extend technical cooperation aimed at transferring techniques for sustainable forest management, including agroforestry.</p> <p><b>1-2. Project Overview</b></p> <p><b>(1) Overall Goal</b> Land use of the western watershed of the Panama Canal is improved to be more suitable for watershed conservation.</p> <p><b>(2) Project Purpose</b> Members of the farmers' groups assisted by the Project practice participatory activities that contribute to watershed conservation in a sustainable manner.</p> <p><b>(3) Outputs</b></p> <ol style="list-style-type: none"> <li>1) Members of the farmers' groups assisted by the Project acquire practical knowledge and technical skills in land use suitable for watershed conservation.</li> <li>2) Farmers' groups are strengthened to carry out participatory activities sustainably that contribute to watershed conservation.</li> <li>3) Project personnel acquire knowledge and experience to carry out their extension work.</li> <li>4) Understanding of watershed conservation and its importance are promoted among the participants in the environmental education programs.</li> </ol>	

<b>(4) Inputs (as of completion of the Project)</b>			
<b>Japanese side:</b>			
<b>Long-term experts</b> 6 pers.	} 341 million yen	<b>Equipment</b>	47 million yen
<b>Short-term experts</b> 14 pers.		<b>Local cost</b>	96 million yen
<b>Trainees received</b> 13 pers.		21 million yen	<b>Others</b>
		<b>Total</b> 548 million yen	
<b>Panamanian side:</b>			
<b>Counterparts</b> 11	<b>Land and facilities:</b> Project Office (La Chorrera), Sub-center (El Cacao)		
<b>Local cost:</b> US\$ 834,100 (97,000,000 yen)	<b>Others</b>	N/A	
<b>2. Evaluation Team</b>			
<b>Member of Evaluation Team</b>	Rural Development Study: Atau Kishinami, Permanent Expert, International Development Associates, Ltd.		
<b>Period of Evaluation</b>	12 - 26 January 2009	<b>Type of Evaluation :</b> Ex-post	
<b>3. Project Performance</b>			
<b>3-1. Performance of Project Purpose</b>			
The Project Purpose has been achieved since the members of the farmers' groups who took part in the Project have sustained activities contributing to watershed conservation.			
Current status of Indicator 1: At the time of the Terminal Evaluation, 78% of the members of the 18 farmers' groups practiced the techniques concerning watershed conservation. Similar use of the transferred techniques was confirmed in January 2009.			
Current status of Indicator 2: At the time of the Terminal Evaluation, all the 18 farmers' groups practiced no less than five watershed conservation techniques in their group plots. Similar use of the transferred techniques was confirmed in January 2009.			
<b>3-2. Achievement related to Overall Goal</b>			
Progress is assumed to have been made, to a certain extent, in achieving the Overall Goal (the area in which agroforestry as provided by Law No. 21 is practiced will occupy 10 % of the upper reaches of the watershed by 2011 and the proportion of the area under land use in accordance with laws and regulations will increase by 14% by 2011) from the following findings:			
1) A total of some 80 farmers' groups including three new groups in El Cacao Commune are studying the techniques transferred in this Project through the Centre for Sustainable Environmental Development (CEDESAM). The number of farmers' groups and farmers (including those participating in the activities of another project implemented by JICA, "Participatory Community Development and Integrated Management of the Alhajuela Lake Subwatershed") practicing the transferred techniques is increasing.			
2) Since the 80 farmers' groups mentioned above are located in various parts of Panama, the transferred techniques have been introduced to areas outside El Cacao Commune.			
Projects of ANAM and the Panama Canal Authority (ACP) have contributed to achieving the Overall Goal of the Project. Data from ACP show that implementation of ten projects in the 10 years from 1998 resulted in an increase of 947 ha of environmental recuperation and afforested areas.			
<b>3-3. Follow-up of the Recommendations by Terminal Evaluation Study</b>			
In response to the recommendations in the Terminal Evaluation, various organizations involved in the Project have implemented the following activities:			
1) ANAM is using experienced extension workers from CEDESAM to monitor the activities of the farmers' groups assisted by this Project and has set aside the budget to provide extension services for new training courses. Some 40 extension workers had been trained by the end of 2008.			
2) ANAM has set aside the budget to provide training including OJT to new extension workers in order to cope with the areal extension of the PROCCAPA approach. At present, four extension workers are taking the training course for extension workers.			
3) ACP, together with ANAM, is supporting watershed conservation activities including agroforestry in areas including El Cacao Commune.			
4) ANAM has made arrangements with organizations such as the Natura Foundation and the Association			

for the Conservation of Nature (ANCON) through CEDESAM so that farmers' organizations and groups can obtain funds to maintain and expand their activities from those organizations.

- 5) JICA has implemented "Participatory Community Development and Integrated Management of the Alhajuela Lake Subwatershed" since September 2006 using the experience from this Project including the participatory approach for mobilization of people and technical guidance with the intention of extending and expanding the PROCCAPA approach.
- 6) ANAM is implementing theoretical and practical training for extension workers and farmers using CEDESAM in accordance with the annual (action) plans.

#### **4. Results of Evaluation**

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

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

The relevance of the Project was high. The Panama Canal is recognized as an important national asset in the policy of the country. Law No. 21 which has been enforced prescribes a reduction in the proportion of pastureland to 2% and an increase in the proportion of afforested area and forest conservation area to 23% and 40%, respectively, by 2020 as the targets of conservation, development and appropriate land use of the canal watershed. This policy on watershed conservation, as well as rural development and poverty reduction, was consistent with the relevant master plans (such as the National Development Plan) of the Government of Panama. Environmental conservation and narrowing of the income gap were consistent with the priority areas in JICA's "Plan for Country-specific Implementation of Programs" for Panama. Moreover, since the beneficiary farmers highly regarded the watershed conservation activities for livelihood improvement, the Project was also consistent with the needs of the farmers.

###### **(2) Effectiveness**

The effectiveness of the Project was high. The Project Purpose had been achieved at the time of the Terminal Evaluation. This study has also confirmed that the farmers' groups have continued implementing the activities. The four Project Outputs were established appropriately so all of them contributed to the achievement of the Project Purpose.

###### **(3) Efficiency**

The efficiency of the Project was high. The Inputs from both the Japanese and Panamanian sides were essential and sufficient in terms of quality, quantity and timing to yield the expected Outputs. The use of PRA (participatory rural appraisal) to identify the needs of the farmers in the Project Area and the introduction of techniques which were appropriate to address their needs resulted in a model project with relatively low input which could easily be introduced to other areas. The appropriateness of the techniques has been proven by the fact that the farmers continue their activities based on the techniques transferred in this Project and the transferred techniques have been introduced to other areas. Thus, it is concluded that the Project Outputs have been achieved.

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

The impact of the Project is observed to a certain extent. It is assumed that progress has been made in achieving the Overall Goal as described in 3-2 above. The basis of this assumption is the fact that some 80 farmers' groups are studying the techniques transferred in this Project through CEDESAM and the number of farmers' groups and farmers practicing the transferred technology is increasing. The following are unexpected positive impacts.

- 1) The farmers' groups are expanding their activities with funds obtained from NGOs such as the Natura Foundation and ANCON. One of the groups has obtained funds for multiple projects including a project involving agroforestry from the Natura Foundation.
  - 2) An association of agricultural producers, the Farmers' Association of the Upper Panama Canal Watershed (APRODECA), has diversified its activities and implemented farmers' needs studies and dispatch of lecturers to training courses held in Colon and Los Santos.
  - 3) The activities of the farmers' groups continue to be reported by the mass media.
- No significant unexpected negative impact has been observed.

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

The overall sustainability of the Project is relatively high since the impact of the Project is being sustained.

###### **1) Administrative aspects**

The sustainability of the Project at the policy and institutional levels is relatively high.

ANAM has prepared annual plans consisting of action plans and budgets and supported the farmers' groups with extension and monitoring activities and by implementing training courses and

research/studies on conservation of natural resources and improvement of the environmental culture. ANAM is planning to continue preparing annual plans and implementing activities in accordance with the plans. The establishment of a distribution route for agricultural produce from production to sales, strongly demanded by farmers, has been unsatisfactory.

Watershed conservation remains important for Panama. ANAM is promoting technology transfers in areas other than El Cacao Commune. As mentioned above, a new project which utilizes the lessons learned from this Project is being implemented. ANAM has begun investigation into the possibility of providing land rights to farmers with the Inter-institutional Commission of the Canal Watershed (CICH) and the Ministry of Agricultural Development (MIDA). These observations have led to the conclusion that the sustainability of the Project in future is fairly high.

2) Institutional and financial aspects

The sustainability of the Project at the organizational and financial levels is mediocre. Many of the farmers' groups have maintained and expanded their activities with financial assistance from the Natura Foundation, ANCON and other organizations. However, there are a few groups whose collective decision-making mechanism is not working properly and in which such problems as i) decline in membership, ii) insufficient funds and iii) lack of marketing strategy for sales of agricultural produce are noted.

Extension workers from ANAM and the 18 farmers' groups are jointly implementing extension activities to other farmers' groups. They receive visitors from other groups and other areas and provide them with training and opportunities to practice the actual farming activities. Their budget is ensured by the annual plan mentioned above. Although APRODECA has implemented training in areas other than El Cacao, it suffers from a shortage of funds and its activities are stagnant because its current executives do not regard the process of decision-making among the members as important and do not make any active efforts to obtain project funds. Unless it overcomes these problems, it does not seem likely to have high sustainability in future.

3) Technical aspects

The project is considered to have relatively high sustainability at the technical level. As observed in the Terminal Evaluation, the 18 farmers' groups continue to practice the knowledge and techniques they learned in this Project and are transferring the techniques to other farmers' groups at present. Meanwhile, ANAM continues to support farmers through monitoring activities and by providing new training courses (on strengthening group organization, greenhouses, etc.) on demand. ANAM is responsible for all the provided machinery and equipment and lends them to farmers. All malfunctioning machinery and equipment have so far been repaired in the Project Area.

Some extension workers resigned after the conclusion of the Project. Three extension workers trained in this Project have been deployed for extension of the PROCCAPA approach in accordance with the annual plans prepared by ANAM since the conclusion of the Project. The aforementioned indicate that the Project will have relatively high sustainability in future.

#### **4-2. Factors that have promoted the Project**

##### **(1) Impact**

- 1) The Terminal Evaluation pointed out, with regard to realization of the Impact, that a mechanism which would allow the Panamanian side to maintain and develop the Project activities on its own after the conclusion of the Project had not been sufficiently established. However, the techniques have been transferred to areas outside El Cacao Commune as a result of the activities implemented by ANAM in accordance with the annual plans prepared independently by ANAM.
- 2) CEDESOC used to provide theoretical training on matters related to forestry. Since CEDESOC was brought under the Environmental Culture Promotion Department and became CEDESAM in 2006, CEDESAM has provided both theoretical and practical training on a variety of subjects including agroforestry, soil and water conservation, community activities and group management to a greater number of farmers (including those outside El Cacao Commune).

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

- 1) The farmers' groups have acquired ways to obtain funds from the Natura Foundation, ANCON, etc. independently and are using the funds to implement various projects on their own initiative.
- 2) The annual plans prepared by ANAM present activity-based budgetary allocation, which is used as the basis of acquisition of the budget.

3) The same factor as mentioned in “(1) Impact” above.

#### **4-3. Factors that have inhibited the Project**

##### **(1) Impact**

The activities of APRODECA seem to be on a decline as the visits to farmers have become less frequent because of problems such as insufficient budget..

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

- 1) Several extension workers resigned during the Project period.
- 2) The same factor as mentioned in “(1) Impact” above.

##### **(3) Others**

The launch of a large-scale private project in Panama City in 2007 resulted in the migration of farmers to Panama City. This migration resulted in a significant decline in membership in one farmers’ group (Vista Alegre).

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

Some 200 farmers belonging to the 21 farmers’ groups in El Cacao Commune continue to practice the various techniques transferred in this Project. Some groups have expanded their activities by obtaining new funds. In addition, the farmers are transferring the techniques to other farmers and farmers’ groups on their own. On the basis of these facts, it is concluded that the Project Purpose has been fully achieved. Of the Five Evaluation Criteria, the Project has high relevance, effectiveness and efficiency. It has relatively high impact and requires activities aimed at areal extension. Although the overall sustainability of the Project is considered relatively high, sustainability at the organizational and financial levels is not considered high. However, although it is assumed that the indicators of the Overall Goal described in PDM have not been achieved, steady progress toward achieving the Overall Goal has been observed as CEDESAM and various groups are engaged in transfer of the techniques of this Project and ANAM is training extension workers.

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

- 1) ANAM shall continue to monitor the activities of the farmers’ groups assisted by this Project using CEDESAM and ensure the budget for areal extension of the activities.
- 2) The activities of some of the farmers’ groups seem stagnant compared with others because of the lack of knowledge of how to apply for financial assistance from NGOs. It is desirable for CEDESAM to coordinate with various NGOs to implement training courses on application procedures and conditions for financial assistance.
- 3) CICH began an investigation into the possibility of providing farmers with land rights in cooperation with ANAM and MIDA in 2007. It is desirable for the provision of land rights to be realized in the near future.
- 4) ANAM/CEDESAM shall resume regular meetings with APRODECA to formulate measures to strengthen the organization of APRODECA.
- 5) PROCCAPA has made great achievements in transferring production techniques. ANAM, as an administrative organ, shall establish a business cycle including marketing strategies such as a distribution route for produce from production to sale in cooperation with other organizations.

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

- 1) Since the direct beneficiaries of this Project were the residents in the Project area who were members of the 18 farmers’ groups, the Project did not provide sufficient support for establishment of a mechanism to enable Panamanian administrative organs to maintain and develop the Project activities independently after its conclusion. Therefore, future projects of a nature similar to this Project should be designed with particular consideration given to such issues as establishment of a system which will enable the counterparts to maintain and develop the project activities independently after its conclusion and incorporation of such establishment into the PDM.
- 2) The use of the participatory approach in such activities as formation of farmers’ organizations and technical guidance between them contributed to the highly successful implementation of the Project, which is proven by the fact that the farmers’ groups are practicing production activities which are friendly to watershed conservation independently and continuously. This participatory approach is applicable to projects of a similar nature.