The Philippines

Forestry Sector Project

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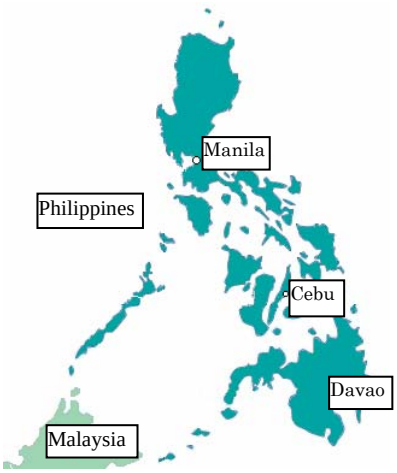
Field Survey: September-November 2005

1. Project Profile and Japan's ODA Loan



Map of project area

People's Organization Members Heading Out for a Day of Plantation Maintenance (Maasin Subproject)

1.1 Background

In the Philippines, forests have been seriously degraded due to excessive logging over the past several decades. From 1934 to 1990, forest cover declined from 17 million hectares (or 57% of the country's land area) to 6 million hectares (21%). The principal causes of forest depletion include logging of primary forests for export, and slash-and-burn agriculture on deforested land. These practices have brought environmental destruction, including soil erosion, reduction of land productivity, flooding, and extinction of some species of plants.

Until the 1970s, the forestry sector's contribution to GNP stood at approximately 2.5% thanks to production of lumber, rattan, and bamboo, but because of extensive forest destruction, this figure had dropped to 1.3% by 1990. Meanwhile, forestry has continued to contribute approximately US$372 million to exports, employs 300,000 workers, and supports the income of approximately 1.2 million households.

Since the latter half of the 1970s, a variety of reforestation projects has been undertaken for protecting forest resources and the re-greening of denuded land. In 1986, the Philippine government launched the National Forestation Program (NFP), which specified the objectives, the implementing entity, and the method of forestation up until 2000. This project was carried out against this background.

1.2 Objective

The objective of this project was to expand the forest cover and to improve household income by implementing Survey, Mapping and Planning for the regional development, Community Organizing, Comprehensive Site Development such as reforestation and so on in the whole of the Philippines, and thereby contributes to improving the environment and alleviating poverty in these areas.

1.3 Borrower/Executing Agency

Government of the Republic of the Philippines/Department of Environment and Natural Resources

1.4 Outline of Loan Agreement

Loan Amount Disbursed Amount	9,294 million yen[1] 5,761 million yen
Exchange of Notes Loan Agreement	August 1993 August 1993
Terms and Conditions - Interest Rate - Repayment Period - Grace Period - Procurement	 3.0% p.a. 20 years 10 years General Untied
Final Disbursement Date	December 2003
Consulting Services	ASSOCIATES IN RURAL DEVELOPMENT（US）, Orient Integrated Development Consultants, Inc.（Philippines）, PK II Engineers（Philippines）, Nippon Koei
Feasibility Study (F/S) etc.	1988: Philippine Government（F/S） 1998: JBIC Interim Monitoring Survey 2002: JBIC Interim Monitoring Survey

2. Evaluation Result

2.1 Relevance

2.1.1 Relevance at the time of appraisal

As part of a national strategic initiative, the Medium-Term Philippine Development Plan (1993-1998) underway at the time of the appraisal emphasized the importance of sustainable development incorporating conservation of biodiversity and conservation-minded use of ecosystem resources. This plan set a target of protecting 5.8 million

[1] In April 2001, the loan agreement was amended, reducing the loan amount to 6,638 million yen.

hectares of forest land and 57,750 hectares in the area covered by Community-Based Forestry Management (CBFM)[2]. In addition, the 1990 Master Plan for Forestry Development (MPFD), which served as the development guideline for the forestry sector, set a target 1.3 million hectares of tree plantation and 44,000 hectares of mangrove plantation. This project sought the restoration of 80,000 hectares of forest green cover through the planting of trees nationwide, and was a matter of high priority for giving concrete shape to the above national policies and sector programs.

2.1.2 Relevance at the time of evaluation

The MTPDP (2004-2010) underway at the time of the ex-post evaluation positioned conservation of biodiversity and conservation-minded use of ecosystem resources as a national objective. In order to achieve this objective, priority would be given to the reforestation of 130,000 hectares of watershed forest at 140 sites where urgent reforestation was required. The abovementioned MPFD was revised in 2003, setting forestation in areas where CBFM would be implemented as an ongoing objective. This project carried out the forestation of 69,571 hectares of watershed forests and mangroves, and thereby contributed to forest regeneration and improvement, ecosystem protection, and economic vitalization. This project was in keeping with the policies and measures described above and thus were highly relevant even at the time of the ex-post evaluation.

2.2 Efficiency

2.2.1 Outputs

At the time of the appraisal, it was decided that this project would implement: 1) Survey, Mapping and Planning (SMP), 2) Community Organizing (CO), 3) Comprehensive Site Development (CSD), 4) Monitoring and Evaluation (M&E), 5) Equipment Procurement, and 6) Consulting Services. In response to the proposal of the JBIC Interim Monitoring Survey[3] conducted in 1998 during implementation of this project, further components were added, including 7) infrastructure development

[2] In the Philippines, forests have been a priority issue in diplomatic policies and political agendas for more than 15 years. At the Earth Summit (UNCED) held in 1992, the Philippines announced the "Philippine Agenda 21" and pledged it would conduct sustainable development. In 1987, the Department of Environment and Natural Resources (DENR) announced the "Philippine Strategy for Sustainable Development (PSSD) (1987-1996) upon official decision by the Philippine National Assembly and the President which aimed for development through sustainable use of forests, cultivated land, coasts, and freshwater ecosystems. Since then, national policies and sector policies have been enacted in harmony with PSSD. Furthermore, the Philippine Agenda 21 (PA21) was launched as a successor to PSSD, which was completed in 1996. The MTPDP incorporates the content of PA21.

[3] This survey examined assistance measures for enhancing income through strengthening people's organization, and thereby improving forest operation and maintenance.

projects, 8) training, workshops and seminars, and 9) surveys. Items 1) through 9) were implemented at 36 subprojects throughout the Philippines.

Table 1. Comparison of Planned and Actual Project Outputs

Item	Plan	Actual
1 Survey, Mapping and Planning (SMP)	100,000ha	111,593ha
2 Community Organizing (CO)		
・ Loan I Site	75,000ha	8,523ha
・ New Site	90,000ha	68,614ha
3 Comprehensive Site Development (CSD)	80,000ha	69,571ha
4 Monitoring & Evaluation (M&E)	80,000ha	58,086ha
5 Equipment Procurement	Transport equipment, communications equipment, etc.	Establishment of Subproject Site Management Office (SUSIMO) and related office equipment
6 Consulting Services	95.7 man-month	246 man-months
7 Infrastructure Development	No plan	See section "vii) Infrastructure Development Project" below
8 Training, Workshops, Seminars, etc.	No plan	223 sessions
9 Surveys	No plan	Implementation of research on "Dynamics of Soil Factors and Minor Vegetation Applied with Roundup and Weed Ban Herbicide in Mangium Plantation and its Effect on Plantation Growth"

(1) Survey, Mapping and Planning (SMP)

This work was performed on 111,593ha as opposed to the initially-planned 100,000ha, a 12% increase. SMP was implemented by Non-Governmental Organizations (NGOs). However, the problems described below were observed in some of the subprojects.

- There were many cases where a capable applicant would be proposed at the time of a bid, but someone far less capable would do the actual work.

- At several subprojects, it was reported that due to poor location survey accuracy done by some NGOs, the Department of Environment and Natural Resources (DENR) had to survey again after completion of CSD.

(2) Community Organizing (CO)

CO was undertaken at two sites: one at a 75,000ha site (Loan I Site) where the subprojects were implemented through joint financing with ADB, and another at a new 90,000-hectare site for this project. As a result of this, People's Organizations (POs) were formed to play a role for regeneration, operation and management, and conservation of forests. For the former site, it was scheduled to be implemented in the first phase of this project, but a delay in selection of the consultant led to a delay in the selection of the NGO to be in charge of CO[4], and as a result, work was performed on only 8,523ha, corresponding to 11% of the planned area[5].

With respect to the new site, the area of the land suitable for afforestation was severely restricted as a result of SMP, and the afforestation area initially planned was reduced[6]. In consequence, the CO conducted area was reduced to 68,614 hectares, corresponding to 76% of the initially planned.

(3) Comprehensive Site Development (CSD)

CSD consisted of protection against of soil erosion control, afforestation, and agroforestry. As a result of SMP, the 80,000 hectares planned at the time of the appraisal was reduced to 69,571 hectares due to a decrease in the land suitable for afforestation[7].

(4) Monitoring and Evaluation (M&E)[8]

Because the reforestation area was reduced and the actual CSD conducted area was 69,571 hectares, M&E was performed on 58,086 hectares, as opposed to the 80,000

[4] Under initial plans, NGOs were to implement CO. Following implementation of the JBIC Interim Monitoring Survey, the Subproject Site Management Office (SUSIMO; see 2.5.2) performed CO as directed by this survey.

[5] A lack of interest in CO by NGOs at the Loan I Site was one reason that actual afforestation area was reduced.

[6] In addition, there were a fair number of cases where the planned size of the reforestation area had to be reduced because the NGO entrusted with CO lacked skills for organizing the community.

[7] However, in most CSD except for the Loan I Site, forests were managed through community participation, which proved useful in raising the awareness of participants concerning protection of the natural environment.

[8] This work was also entrusted to NGOs, and their performance generally rated as high. This is probably because the level of technology in this field in the Philippines is basically high and NGOs which universities and public research institutions are main bodies conducted M&E.

hectares planned at the time of the appraisal. In addition, some projects whose area for implementation of CSD was large were surveyed through sampling due to lack of time.

(5) Equipment Procurement

At the time of the appraisal, the procurement of equipment such as heavy machinery, transport equipment, and communications equipment for use in forest operation and maintenance was planned and procured as planned. In response to the 2002 JBIC Interim Monitoring Survey, Subproject Site Management Offices (SUSIMO) were established in order to strengthen support for POs (to be described in 2.5.2). As a result, the SUSIMO offices, office equipment, transportation equipment such as a motorbikes and boats, computers, and wireless communications equipment were added.

(6) Consulting services

The 1998 JBIC Interim Monitoring Survey proposed the introduction of income enhancement programs to allow the activities of POs to proceed on a continuous basis and the introduction of infrastructure development projects to support these activities. In response, an infrastructure development project, provision of equipment to SUSIMO offices, various training sessions, and implementation of a number of surveys concerning afforestation were added. As a result, consulting services were increased from 95.5 man-months as initially planned to 246 man-months.

(7) Infrastructure development projects

Infrastructure development projects were implemented by companies approved by the executing agency based on the proposals submitted by POs. At the time of the appraisal, the plan for infrastructure development included the construction of woodland paths, firebreaks, etc., as part of CSD. In response to the 1998 JBIC Interim Monitoring Survey, however, this project was introduced to support income enhancement programs to increase the income for POs and to facilitate operation and maintenance of reforestation sites. The major outputs for infrastructure development projects were as follows.

- Road rehabilitation: total of 103.3km (27 subprojects)
- Water systems: 27 locations (9 subprojects)
- Bridges: 16 locations (13 subprojects)
- Drying yards: 7 locations (7 subprojects)
- Causeway and wharves: 7 locations (6 subprojects)

- Paved footpaths: 19.4km (4 subprojects)
- River bank rehabilitation: 6 locations (6 subprojects)

At the nine subprojects where the field survey was conducted, these infrastructure development projects had been completed as planned, and it was confirmed that this infrastructure is currently being used effectively.

(8) Training, workshops, seminars

Although this component was not planned at the time of the appraisal, in response to recommendations of the 1998 and 2002 JBIC Interim Monitoring Surveys, a total of 223 training sessions, seminars and workshops were conducted in order to activate POs. Most of these activities were related to income enhancement programs, and practical training was generally provided, such as the manufacture of processed goods using by-products (construction materials using bamboo, mats using cogon grass), raising of tilapia, and dressmaking and handicrafts as side work for married women[9].

These trainings were considered to increase senses of forest conservation and ownership. Aforementioned infrastructure developments were deemed to provide physical incentives for maintaining and increasing of such senses and ownerships.

(9) Surveys

These surveys were based on the recommendations of the 1998 JBIC Interim Monitoring Survey, and were designed to verify the factors that affected survival rates in afforestation projects from an interdisciplinary viewpoint[10].

2.2.2 Project period

Under the initial plan, a period of 65 months was scheduled, from August 1993 to December 1998, but the actual period was 148 months up to December 2003. This delay was primarily due to the unexpected additional time needed to select consultants at the start of the project and the inability to work because of natural disasters that occurred between 1997 and 1999 (typhoons, drying)[11]. In 2001, DENR established

[9] However, almost none of the subprojects left an official record or minutes of training or seminars.
[10] Dynamics of Soil Factors and Minor Vegetation Applied with Roundup and Weed Ban Herbicide in Mangium Plantation and its Effect on Plantation Growth
[11] Due to El Nino, a prolonged dry period retarded growth of forestation, leading to fires and drought damage. Consequently, the survival rate declined, and considerable work was required for replanting, which also caused delays. In addition to natural disasters, another cause of delay was the executing agency's organizational problems (e.g., personnel shortages, which caused work delays and delays in decision-making).

SUSIMO for each subproject[12], and set out to strengthen POs and support income enhancement programs, while assisting the lives of residents. These efforts facilitated the operation and maintenance of reforestation sites and the management of activities by POs, thereby reducing further delays.

2.2.3 Project cost

The actual project cost came to 6, 835 million yen as opposed to the 12,392 million yen initially planned[13]. The principal reasons for this reduction in project cost were the devaluation of the local currency (peso) due to the 1997-1998 Asian currency crisis, and shrinkage of CSD areas (from 80,000ha to 69,571ha)[14].

2.3 Effectiveness

2.3.1 Expansion of forest cover through the project

2.3.1.1 Forest cover area and survival rate

The initial plan aimed to plant 80,000ha, the actual total area of both watershed forest and mangrove forest was 69,571ha, 87% of the initial plan. As for survival rates, the initial plan called for a 70% survival rate over three years, but the actual survival rate as of 2004 was an average of 84% for watershed forest and 86% for mangrove forest, both surpassing the initially planned target.

2.3.1.2 Total forest cover area

In this project, approximately 70,000 hectors were planted. The forest area provided by this project during the period from 1997-2003 when afforestation through this project began accounted for 30% of that of all the Philippines. This corresponds to 58% of all land forested during that period by foreign aid.

[12] Later, as POs matured, SUSIMO offices were reorganized or closed, and in many cases, one SUSIMO office oversaw several subprojects.

[13] In April 2001, the loan agreement was amended, with the loan amount reduced to 6,638 million yen and project cost set at 8,850 million yen (see footnote 1).

[14] CSD include i) soil erosion control, ii) afforestation, and iii) agroforestry.

Table 3.Degree of Project Contribution to Afforestation

	Area (ha)	Percentage out of newly planted area (%)	Percentage out of planted area using foreign aid (%)
Total forest coverage nationwide in 2003 (ha)	10,247,400ha	-	-
Area newly planted from 1997 to 2003 (ha)	231,140ha	100%	-
－Portion implemented by the government	181,423ha	78%	-
－Portion implemented using foreign aid	120,882ha	52%	100%
－Portion conducted through this project	69,571ha	30%	58%

Note: The above figures include mangrove forest areas
Source: Created by the external evaluator based on statistics from the executing agency.

2.3.2 Household income

2.3.2.1 Trend in household income

At the time of the appraisal and during project implementation, data on household income concerning all subprojects was available, but because there was no data available at the time of the evaluation, a beneficiary survey which focused on six subprojects was performed in this ex-post evaluation[15]. The results are given below.

[Watershed Subprojects]

Agricultural income:

Because agroforestry was not practiced prior to project implementation, agroforestry-derived income at four of the subprojects was zero. After project implementation, agroforestry-derived income increased at the four locations, though there were differences in income between subprojects. Assuming that households had roughly the same household structure with largely identical cultivation areas, the average annual income generated from agroforestry at the Maasin and Catubig subprojects was 15,394 pesos as opposed to 9,413 pesos in the Balog-balog and Mariveles subprojects, a difference of approximately 6,000 pesos.

Farming-related income:

Farming-related income consists of daily allowances from charcoal production and operation and maintenance of plantations, and earnings from income enhancement

[15] This survey targeted 80 beneficiaries of four watershed site subprojects, in Maasin, Catubig, Balog-balog and Mariveles, and 38 beneficiaries of two mangrove planting sites, in Capalonga and Palonpong.

projects. Prior to project implementation, the average annual amount of such income at four subprojects was 2,200 pesos, and no particular difference between projects was seen. At the time of the evaluation, the annual farming-related income earned was 1,700-3,500 pesos. The breakdown is as follows.

- Average income from charcoal production at all subprojects was approximately 1,400 pesos/year.
- Daily allowances earned from operation and maintenance work came to 100-400 pesos/year. There was a difference of approximately 300 pesos/year depending on the subproject.
- Income from income enhancement programs came to 200-1,800 pesos/year, with a difference of slightly less than 1,600 pesos/year depending on the subproject.

In total, farming-related income at the time of evaluation amounted to 3,600 pesos per year for the Maasin and Catubig subprojects, 1,700 pesos per year for the Balog-balog and Mariveles subprojects, a difference of 1,900 pesos per year. In addition, income from the two latter projects was lower than before project implementation.

Cutting weeds below planted trees
(Catubig)

Mangrove four years after planting
(Palonpong)

Since no data on household income was collected other than project areas, it could not prove the attribution of the project outcome, though the above figures indicate that total agricultural income and farming-related income directed affected by this project is higher than before project implementation (an increase of 8,900-16,700 pesos per year), and show that this project brought increased income to the watershed site subprojects. In addition, average household income including money sent home and earnings from work performed elsewhere came to 68,000 pesos a year for four subprojects before project implementation, but at the time of the evaluation, this

income had increased to 94,000 pesos per year for Balog-balog and Mariveles and to 102,000 pesos per year for Maasin and Catubig.

Comparing Maasin/Catubig and Balog-balog/Mariveles reveals a disparity in income derived from agroforestry and income enhancement projects, with a difference in average household income of approximately 8,000 pesos. As to what accounts for this difference, in Maasin and Catubig which have better access to bigger markets residents' rate of participation in PO exceeds 70% and earnings from income enhancement programs have increased. In Balog-balog and Mariveles, on the other hand, residents' participation in PO is low and earnings from income enhancement projects are small. Thus, in subprojects where PO activity is high, income enhancement programs tend to succeed, and the resulting earnings can be used as capital to pay daily allowances for operation and maintenance work for reforestation. By contrast, in subprojects where PO activity is low, it is not possible to raise that kind of capital, so PO members' sense of solidarity is low and they basically do not cooperate in operation and maintenance for reforestation work. According to interviews performed in the beneficiary survey, the failure of income enhancement programs is the main underlying cause of the lack of PO activity, particularly the projects' failure in micro-lending to PO members. This is because PO can not ensure and manage money for operation and management properly.

[Mangrove subprojects]

Fishing income:

Thanks to the increase in fish catches and by-products due to mangrove afforestation, income has increased from 27,800 pesos a year before project implementation to 39,500 pesos a year at the time of the evaluation, a gain of 11,700 pesos a year. No major difference in annual fishing income could be seen between the Capalonga and Palonpong subprojects when household size and structure were the same.

Fishing-related income:

Fishing-related income consists of daily allowances from selling seafood and mangrove conservation activities, and income from income enhancement programs involving small water utilities and small-scale retail store operations. At the time of the evaluation, this fishing-related income amounted to 18,700 pesos a year, an increase of about 13,900 pesos from the 4,800 pesos earned a year before the project.

Since no data on household income was collected other than project areas, it could not prove the attribution of the project outcome, though these figures show that the

total amount of fishing income and fishing-related income is higher than before project implementation (an increase of 25,600 pesos/year), and that income from mangrove reforestation area subprojects that were assisted by this project has increased.

Average household income of mangrove reforestation area subprojects, including income from money sent home and from work performed elsewhere, had reached 70,000 pesos a year at the time of the evaluation. One reason why the household income of the typical beneficiary of watershed reforestation areas is generally higher than that of the typical beneficiary of mangrove reforestation areas is that it takes time for mangrove plantations to yield an increase in the protection of fishing resources and a concomitant increase in fish catches. Another is that for beneficiaries in watershed subprojects, the farming area per household increased through the introduction of agroforestry.

2.3.2.2 Job creation

At the time of the appraisal, the aim was to create 300,000 jobs within the Philippines' entire forest sector, and to bolster 1.2 million household incomes. During the project, 6.578 million man-days of work were created through CSD, infrastructure development, and income enhancement programs.

At the time of the evaluation, no figures were available concerning job creation in the Philippines' forest sector as a whole. According to a beneficiary survey (of PO members and non-members), very few afforestation-related jobs had been created after the completion of this project.

Operation and maintenance work decreased as the trees that had been planted grew, and out of a principle of fairness, the government was determined to avoid projects being conducted in the same areas. Thus job creation after the completion of afforestation project is hoped to be done by self efforts by community organizations.

2.3.3 Economic internal rate of return (EIRR)

Economic internal rate of return (EIRR) was calculated based on the following:

Project life: 20 years

Cost: Planting costs (saplings and wages), operation and maintenance costs, infrastructure development costs

Benefits: Sales of adult trees, sales of forestry and agriculture products, use of timber from thinned forests as fuel

EIRR for each of the 36 subprojects at the time of the appraisal ranged from 12-22%. In addition, EIRR for the subprojects as a whole was 18%[16].

Costs and benefits over time were calculated based on the results of interviews conducted for six subprojects for which a beneficiary survey was performed at the time of the ex-post evaluation. As a result, EIRR for the six subprojects ranged from 14-25% and averaged 19%.

The reason why EIRR was higher at the time of the ex-post evaluation than at the time of the appraisal was mainly because of the increase in the international price of lumber. Since the average price exceeds capital opportunity costs[17] in the Philippines, it could be said that this project was relevant from a national economic standpoint.

2.4 Impact

2.4.1 Improvements to the environment

Beneficiary surveys were conducted for nine subprojects[18] involving 175 people through interviews and group discussions. The results are given in the following table.

Table 4. Beneficiary Survey Concerning Improvements to the Environment

Improvements to the environment expected at time of appraisal	Results of beneficiary survey at time of evaluation	Number of subprojects that responded to survey (n=9)
1. Prevention of soil erosion	・ No valid responses	-
2. Reduction in flooding	・ Number of instances of flood damage fell from two to three times a year to one to two times a year.	3
3. Watershed protection	・ In seven subprojects, wells no longer dried up during dry seasons.	7

[16] At the SMP stage, it was intended to calculate EIRR for each subproject, but of the 36 subprojects, EIRR was calculated for only six. Moreover, because the method of weighing benefits was not equivalent, it was decided that comparing these on a one-to-one basis was not significant. Therefore, at the time of the ex-post evaluation EIRR was recalculated both for the time of the appraisal and the time of evaluation. In this calculation, however, the price ascertained locally by interviews was used for the international price of mature trees, which constitutes a benefit, and then was simplified (because mature trees are basically distributed only within the area, the price is defined as [local price=international price]). For this reason, a higher EIRR was calculated when the subprojects cultivated many high-priced woods (e.g. oak and mahogany), and when the projects introduced trees (bamboo, cogon) with which took a short time to reach the harvesting stage but took a long time to harvest over a large area.

[17] At present, this figure is 14% according to the National Economic Development Agency (NEDA), and at times 15% is used.

[18] For the names of the subprojects, see “Table _ Names of Subprojects for which Beneficiary Surveys Were Conducted” at the end of this report.

4. Habitat Improvements for wild plants and animals	・ In all mangrove reforested areas, the variety of fish increased. ・ Up to the present time, negative influences on the ecosystem through this project have not been observed.	29
5. Reduction in timber culling on remaining natural forest	・ The number of arrests for illegal logging has declined to less than three cases per year for all subprojects surveyed.	9
6. Improvements in scenery	・ No valid responses	-

Source: Beneficiary survey by external evaluator (9 subprojects, sample of 175 people)

As forests and mangroves grow, improvements to the environment probably will become more evident. This may be particularly true for improvements for which this survey did not receive a significant number of responses, i.e., "prevention of soil erosion" and "improvements in scenery." Beneficiaries will probably become more aware of these improvements as planted trees and shrubs grow. Therefore, one can say that the project fulfilled its intended role in improving the environment[19].

Forestation work performed by PO (Mariveles)

Bamboo planted on a river bank to control flooding and prevent soil erosion (Maasin)

2.4.2 Total forest cover area

Approximately 70,000 hectares were planted through this project. A comparison of the Philippines' total forest cover area (Degradation/conservation area) [20] in 1993 prior

[19] In mangrove reforestation areas, mangroves are useful as a buffer against high waves due to typhoons that strike coastal residential areas.

[20] (Degradation/conservation area) = (forest area) + (other wooded land) – (plantations). When measuring nationwide vegetation area, the Normalized Difference Vegetation Index (NDVI) employing satellite images is used. Here, "forest" refers to an area where tree height is above a certain level, as distinguished from "other wooded land" where there are no tall trees but where some types of low trees are cultivated. Those places where forestation has recently been completed are classified as "other

to implementation of this project and in 2005 at the time of the ex-post evaluation indicates a reduction of approximately 680,000ha. Based on total forest coverage in 1993, the actual forest expansion rate through this project was 0.71% (the plan at the time of the appraisal was 0.82%). In addition, based on total forest coverage in 2005, 0.97% was supplied by this project[21].

Table . Breakdown of Forest Cover: Actual 1993 Figures

	1993	2005
Total Land Area (ha)	29,817,000	29,817,000
Total Forest Area (ha)	9,786,500	7,162,000
Primary Forest Cover (ha)	829,000	829,000
Other Wooded Land (ha)	2,548,600	3,611,000
Plantations (ha)	1,501,600	620,000
Total Degradation/Conservation (ha)	10,833,500	10,153,000

Source: Created by the external evaluator from executing agency statistics and public data

2.4.2 Stimulation of the local economy

Not only did this project directly improve income and contribute to environmental protection; it also had a major economic effect through its relationship with the local economy mediated by income enhancement programs and the consumption behavior of beneficiaries. The project thereby improved the economic status of beneficiaries and provided opportunities to build a livelihood.

wooded land" because tree height is low. "Primary forest" refers to areas where high trees grow in profusion without changes in tree height over a certain period (it is thought that in the Philippines the area of national parks is used as it is as the area of primary forest). "Plantation" refers to low-tree areas where trees have been planted at equally-spaced intervals. As of 2005, the plantations, agroforestry, and mixed mature forest provided by this project were classified in various ways depending on tree height and mixed planting conditions, but it is certain that as a whole these have been classified under the category of "Degradation/conservation area."

[21] (Degradation/conservation area) = (forest area) + (other wooded land) – (plantations). When measuring nationwide vegetation area, the Normalized Difference Vegetation Index (NDVI) employing satellite images is used. Here, "forest" refers to an area where tree height is above a certain level, as distinguished from "other wooded land" where there are no tall trees but where some types of low trees are cultivated. Those places where forestation has recently been completed are classified as "other wooded land" because tree height is low. "Primary forest" refers to areas where high trees grow in profusion without changes in tree height over a certain period (it is thought that in the Philippines the area of national parks is used as it is as the area of primary forest). "Plantation" refers to low-tree areas where trees have been planted at equally-spaced intervals. As of 2005, the plantations, agroforestry, and mixed mature forest provided by this project were classified in various ways depending on tree height and mixed planting conditions, but it is certain that as a whole these have been classified under the category of "Degradation/conservation area."

A comparison of gross regional domestic product (GDRP) by the Region in 1993 and 2003 reveals that in the remaining 14 Regions after the Region X is excluded, GRDP increased. Looking at the country as a whole, GDRP grew from 734 million pesos in 1993 to 1,081 million in 2003, a 43.3% increase.

With regard to the Philippines' national goal of alleviating poverty, reductions in the poverty rate have been seen in all Regions, with the Philippines' overall poverty rate declining 24.9 points from 45.3% in 1991 to 20.4% in 2000.

Considering the above analysis of household income and EIRR, although it does not express the extent of contribution specifically and clearly, it is deemed that this project has played a role in the improvement of the local economy.

2.4.4 Improvements in living environments and impact of social aspects

The observed results of improvements in living environments included 1) reductions in travel time and increased access to public facilities thanks to the development of roads and bridges (in all nine subprojects), 2) strengthening of community networks through development of drying yards [22] (in two of nine subprojects).

Through organizing POs, the opportunities of people's participation have increased. It was observed that most of POs which were conducted the site survey hold a general meeting once a month and occasional meetings for gropes formed in the PO. Women's groups implemented income enhancement programs by themselves. PO directors are generally selected through a election, and total 12 female directors were active in 9 subprojects conducted site surveys (as of February 2006).

In addition, 172 of the 175 people interviewed in the beneficiary survey reported that the importance of nature conservation has taken root among beneficiaries employed in afforestation projects (most were residents of subprojects).

2.5 Sustainability

2.5.1 Technical capacity

DENR provides an average of two technical training sessions per year for SUSIMO staff and PO directors through the DENR's Provincial Environment and Natural Resources Office (PENRO) and Community Environment and Natural Resources Office (CENRO). Technical assistance has been continuously provided.

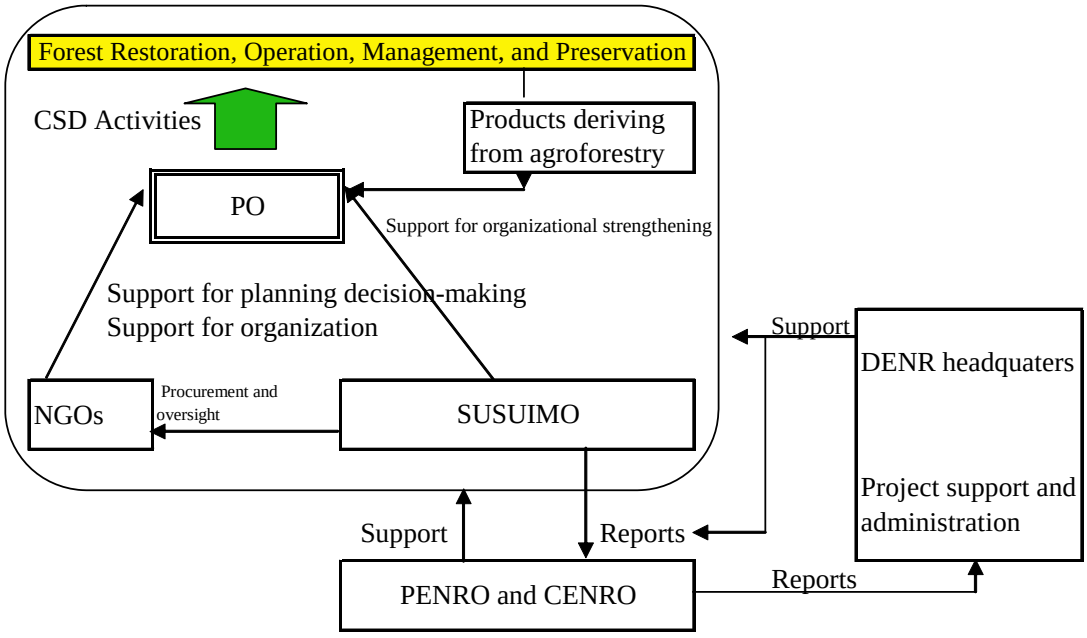
This project has served to foster SUSIMO's community organizing capabilities. Operating techniques for SMP activities were accumulated within the DENR. For each

[22] In addition to drying unhulled rice, drying yards (concrete yards) are used for assemblies, basketball tournaments and the like.

subproject, the technology needed to carry out forest regeneration, operation and maintenance, and conservation is being accumulated and there are no problems in this regard.

2.5.2 Operation and maintenance system

The operation and maintenance of subprojects continues to be conducted by POs and SUSIMO with support from SUSIMO. SUSIMO was established in 2001 by DENR Administrative Order No.2000-65 (August 2000), which set the guidelines for establishing local management offices and managing forest sector projects. SUSIMO has 203 employees at the time of the evaluation[23] and is in charge of assisting subproject POs. Thanks to the establishment of SUSIMO, a 24-hour full-time support system has been established which PENRO or CENRO could not, and this has enabled response to the PO's needs[24]. These systems facilitated technical support for and communication of procedural matters to POs, and improved sustainability.



[23]In order to become a SUSIMO staff, people must earn a college degree in forestry or community development and have at least one year's practical experience in community guidance for forest and mangrove development so that when they are hired by SUSIMO, they have knowledge and experience of community organizing.

[24] SUSIMO provides POs with technical guidance for forest operation and maintenance and income enhancement programs. The numbers of subprojects that SUSIMO handles are two to four subprojects for each member of staff, and on an area basis, this often comes to over 10,000ha per member of staff. In this project, POs were organized with the assistance of NGOs. While receiving assistance from NGOs and SUSIMO on the technical and administrative fronts, institutional and financial aspects were strengthened and thereby expected to contribute reforestation, operation and maintenance and conservation. To some extent, (about half of the nine POs visited at the time of the evaluation), this approach was successful.

2.5.3 Financial status

Since 2003, operation and maintenance funds have been allocated from DENR through PENRO and CENRO. As the personnel costs for SUSIMO employees have been kept in check (SUSIMO salaries have basically not risen in years[25]), people are just barely managing to get operation and maintenance for plantation conservation done.[26] However, according to the DENR, damage from typhoons and landslides on Leyte Island urged the government to recognize the urgency of reforestation projects, and steps are being taken to implement reforestation projects through special budgetary provisions. As a result, the budget for reforestation projects in 2006 is much higher than it was the previous year (as of February 2006).

According to an interview survey of SUSIMO, when privately-owned forests are included in subprojects, it is common for the land owners not to contribute to operation and maintenance costs (in both of the two projects surveyed). Even so, in places where PO activities are being properly carried out, people conduct the operation and maintenance work while receiving no salary for it. In such subprojects, financial concerns remain regarding operation and maintenance.

2.5.4 Operation and maintenance status[27]

In the majority of subproject areas, trees and shrubs are growing to the extent that there is not much need for operation and maintenance. In many subprojects, agroforestry harvesting can begin in another one or two years. The quality and amount of operation and maintenance on forests implemented by POs depends on PO organizational capabilities and the performance level of agroforestry[28].

Of the infrastructure development projects introduced to support income enhancement programs, the majority of roads have been transferred to local government units (LGUs), and operation and maintenance of these roads is likewise

[25] Regular SUSIMO employees receive a yearly salary of 169,000 pesos (3,000 pesos a month plus a one month bonus), but payment of salaries is sometimes late.

[26] At a hearing with a SUSIMO regarding one SUSIMO-managed project that was surveyed, it was learned that although CENRO was requested to provide a 240,000-peso budget for equipment and materials, gasoline, and travel expenses, only 40,000 pesos was allocated. However, this SUSIMO claimed that with this subproject, its budget acquisition ratio was higher than with other subprojects.

[27] Operation and maintenance for watershed forests principally consists of spot cultivation, complementary planting, fertilizing, and patrols and is very laborious during the four-year period after planting. For mangrove forests, operation and maintenance consists mainly of removing barnacles, supplementary planting and patrols, and work must be performed frequently during the three-year period after planting.

[28] The principal factors behind the variation in the quality and amount of forest operation and maintenance by POs include 1) establishing standards and compliance within POs, 2) leadership of the POs, 3) degree of success of the PO's income enhancement projects, and 4) the size of proceeds from agroforestry and reforestation (including bamboo).

being implemented by them. However, here and there one sees cases where management is for the most part not being conducted on account of insufficient funds. Management of drying yards by the PO is proceeding well.

3. Feedback

3.1 Lessons Learned

- Based on the results of the beneficiary survey, the success of income enhancement programs improved beneficiaries' incomes and strengthened organizing capacities of POs. This in turn led to a trend towards proper forest operation and maintenance activities. It is hoped that income enhancement components will be introduced into reforestation projects. In order to implement a good income enhancement project, it would be effective to use NGOs that possess business expertise and have contacts with private companies, and employ experts to support making a plan and to assess it.
- There were cases that products were fairly distributed and money for work were properly compensated because a prior agreement for distribution of products was not prepared and people's organization was not organized after the implementation of agroforestry. It is hoped to prepare a code of people's organization with residents before project implantation.
- At the time of the appraisal, it was agreed with the implementation system and implementation and operational procedure for the project. At the stage of the project implementation, more detailed guideline became be necessary. The DENR, based on the results of the JBIC Interim Monitoring Survey, established SUSIMO to support POs, and in so doing the project was able to make progress. It is hoped a system and procedures will be developed for implementing projects in the form of guidelines or manuals at the planning stage of reforestation project.
- In the project, the cases were observed that it was led to delay in schedule and increase in the project due to poor performance of some NGOs which were entrusted SMP and CO. On the other hand, some NGOs have contacts with the private sector, possess business expertise, and have experience of implementing income improvement programs. It is hoped their strengths will be made sure of when working with NGOs. Their role would include collaboration with customers, negotiations on sales prices, and quality control of products, for instance.

3.2 Recommendations

- In irrigation projects and agrarian reform infrastructure support projects which are operated and maintained by people's organizations in the Philippines, local offices begin to organize residents approximately one year before such projects start, so

that it can form beneficiary organizations having organizational strength before the project begins. Some projects have employed a scheme where the government does not start the project until those organizations can formulate and gain approval on their own operation and maintenance plan on a sustainable basis. It is hoped that the DENR will employ these good practices when they implement reforestation projects which utilize people's organization.

- Through this project, surveying and mapping capabilities were fostered within the DENR itself. Through the creation of SUSIMO, capabilities for ascertaining beneficiaries' needs and for organizing communities were developed. It is hoped that, in order to assure efficiency in time and financial aspects, in the chain of activities from surveying (S) to mapping (M) to planning (P), DENR directly manages S and M, with P being implemented primarily by SUSIMO in each area.

Comparison of Original and Actual Scope

Item	Plan	Actual
(1) Outputs		
1) Survey, Mapping and Planning (SMP)	100,000ha	111,593ha
2) Community Organizing （CO）		
2-1 Loan I Site	75,000ha	8,523ha
2-2 New Site	90,000ha	68,614ha
3) Comprehensive Site Development (CSD)	80,000ha	69,571ha
4) Monitoring and Evaluation (M&E)	80,000ha	58,086ha
5) Equipment Procurement		
5-1 Computers, generators, communications equipment	Complete set	Complete set
5-2 Local offices and necessary office equipment and materials	-	Complete set
6) Consulting Services	95.7 man-months	246 man-months
7) Infrastructure Development	-	Complete set
8) Training, Seminars, etc.	-	223 sessions
9) Surveys	-	One research
(2) Project period		
Loan agreement	August 1993	August 1993
Selection of consultants	September 1993-August 1994	September 1993-April 1995
Survey, Mapping and Planning (SMP)	May 1994-December 1996	December 1994-July 1997
Community Organizing (CO)	September 1994-December 1997	October 1996-November 2000
Comprehensive Site Development （CSD）	October 1994-December 1998	December 1996-June 2003
Monitoring and Evaluation (M&E)	October 1994-December 1998	December 1999-December 2003
(3) Project cost		
Foreign currency	222 million yen	365 million yen
Local currency	1,217 million yen （2,434 million pesos）	6,470 million yen （3,235 million pesos）
Total	12,392 million yen	6,835 million yen
ODA Loan Portion	9,294 million yen	5,761 million
Exchange rate	P1=5.0 yen	P1=2.0 yen

Subprojects investigated through the beneficiary study

Section	Subproject name	Sample collection method	No. of samples	Sample characteristics	Degree of PO activity
Reservoir Area Subprojects					
	Maasin	Random (PO president's recommendations)	PO members : 10 PO non-members : 10	・ Conducted a study of household incomes	High
	Catubig	Group interviews	20	・ Conducted a study of household incomes	High
	Balog-balog	Random (PO president's recommendations)	PO members : 10 PO non-members : 10	・ Conducted a study of household incomes	Low
	Mariveles	Group interviews	20	・ Conducted a study of household incomes	Low
	Lamut	Group interviews	18		Low
	Dumayop	Group interviews	19		High
	Umingan	Random (PO president's recommendations)	PO members : 10 PO non-members : 10		Low
Mangrove Cultivation Area Subprojects					
	Capalonga	Random (PO president's recommendations)	PO members : 10 PO non-members : 10	・ Conducted a study of household incomes	High
	Palonpong	Group interviews	18	・ Conducted a study of household incomes	High
Total			175		

When conducting beneficiary surveys of subprojects in this ex-post evaluation, DENR was requested to select nine subprojects and decide based on its own opinion which were successful or unsuccessful. Upon actually observing the sites, the status of the project did not necessarily coincide with the opinions of DENR.