

Chapter V Evaluation of PS

1 Method of evaluation

Evaluations of PS were made twice, as an intermediate evaluation (carried out in November 1999) and a final evaluation (carried out in May 2000). For both of these evaluations, from the viewpoint of the purpose of the investigation with villagers' participation, local villagers were gathered with the Watershed Management Committee as the central figure in each village where PS was conducted, and an evaluation meeting with villagers participating was held with NGO as a facilitator. Participation in the evaluation meeting of the villagers' participation was requested of villagers, regardless of whether they were participants or non-participants in execution of a PS project. At the meeting, they were asked to judge the achieved point of projects, satisfaction with projects, problems accompanying execution of projects and methods of improvement and other matters, based on a specified index, and also to express their opinions freely. Regarding the results of the evaluation meeting with villagers' participation, three parties, the Ministry of Water and Forests, NGO and JICA, discussed and made comprehensive appraisal. In addition, evaluation was supplemented in the following ways:

- ① On-the-spot inspection: We visited the site with key informants such as officials of the Ministry of Water and Forests, members of NGO and the investigation team of JICA and representatives of villagers, and observed conditions of the execution.
 - ② Interview: Investigation by hearing from the Watershed Management Committee and villagers.
 - ③ Data and materials: Supplemented with data and materials of local regular reports.
- The main points of items, contents, indexes and the method of investigation of PS evaluations are as shown in Annex 72.

Table V-1 shows the number of participants in evaluation meetings classified by men and women and the ratio of women.

Regarding the total number of participants in evaluation meetings, Analamihoatra had 50 participants the largest number, while Ambohimanjaka had 13, the smallest. With percentages of women's participation examined, however, Ambohimanjaka, which had the smallest number of participants, had 46%, the highest percentage, and Analamihoatra, which had the largest number of participants, had just 4%, the lowest percentage. The result is that percentages of women's participation in three villages excluding Analamihoatra range from about 30% to about 40%; Analamihoatra showed an extremely low percentage. While it is possible to consider that the number of woman participants was small by accident due to the influence of the determined date of the evaluation meeting, it cannot be neglected to consider that Analamihoatra is an area where the power and influence of male elders is strong, and a

local male-centric society, which is peculiar to inland farm villages, has been formed. Women remained almost silent at evaluation meetings except in Angodongodona. In this village, a woman who had not received a distribution of seedlings expressed her dissatisfaction, while a woman who did not participate in any projects said that she hoped the projects would continue. No positive statements were heard from women participating in evaluation meetings in the other three villages. Though it is considered that this is related to the fact that the absolute number of women was large in Angodongodona, women's voices were not strong in the survey area as a whole.

Table V-1 Number of participants in evaluation meetings classified by sexes and the ratio of women

| Fokontany | Number of participants | | | Ratio of women |
|-----------------|------------------------|-----|-------|----------------|
| | Total | Men | Women | % |
| Andrefanivorona | 14 | 8 | 6 | 43 |
| Ambohimanjaka | 13 | 7 | 6 | 46 |
| Angodongodona | 42 | 27 | 15 | 36 |
| Analamihotra | 50 | 48 | 2 | 4 |
| Total | 119 | 90 | 29 | 24 |

2 Result of evaluation

2-1 Degree of achievement of projects and actual results

The actual results of projects including the record of execution of each project, the spread of technique, the degree of achievement of technique and villagers' response are as shown in Chapter IV. The actual results are estimated below from the degree of achievement of projects, the state of held technical lecture classes and so on.

(1) Degree of achievement of projects

Table V-2 shows the degree of achievement of projects by fokontany by classifying into those of high degree and those of low degree. Judgement of the high or low degree of achievement was based on the result of PS projects presence of a technical lecture class by means of demonstration described later, difference between the project plan and the result of execution, the extent of satisfaction with the project, etc. Distinctive features of them are as follows.

In the Tsiazompaniry zone, there are more projects with a high degree of achievement than in the Mantasoa zone. Projects whose degree of achievement is higher in the Tsiazompaniry zone and lower in the Mantasoa zone are afforestation of eucalyptus or other trees and technique to improve charcoal making. A project whose degree of achievement is low commonly in both districts is agroforestry. Improvement of eucalyptus coppice forest was demanded by villagers

in the planning stage. However, in the stage of execution, in addition to being busy with farm work, villagers were reluctant to use handsaws. As a result, needs of execution decreased relatively and the project was not carried out.

Table V-2 Degree of achievement of projects

| Fokontany | Project with a high degree of achievement | Project with a low degree of achievement |
|-----------------|--|---|
| Andrefanivorona | Planting of fruit trees, production of compost | Agroforestry, afforestation with eucalyptus or other trees, improvement of eucalyptus coppice forest, improvement of charcoal-making technique |
| Ambohimanjaka | Production of compost | Planting of fruit trees, agroforestry, afforestation with eucalyptus or others, improvement of eucalyptus coppice forest, improvement of charcoal-making technique, fish farming in rice fields |
| Angodongodona | Production of compost, afforestation with eucalyptus or others, improvement of charcoal-making technique | Planting of fruit trees, agroforestry, improvement of eucalyptus coppice forest, fish farming in rice fields |
| Analamihoatra | Production of compost, afforestation with eucalyptus or others, ZODAFARB, small scale hydraulic power generation | Planting of fruit trees, agroforestry |

(2) Conducting the technical lecture class

For all projects under the project plan of the PS, it was planned that a technical lecture class would be conducted for villagers who wanted to participate. The villagers who had attended the class would, as key farmers, spread the acquired technique to surrounding villagers.

The situation of conducting technical lecture classes is shown in Table V-3.

Technical lecture classes were conducted, as planned in 4 villages where production of compost and afforestation with eucalyptus or others had been planned, in 3 villages where improvement of charcoal-making technique had been planned, and in 2 villages where fish farming in rice fields had been planned. For planting of fruit trees, classes were conducted in 3 villages (except Angodongodona Village). A lecture on agroforestry regarding hedge laying was given in Analamihoatra.

On the other hand, the subject of the technical lecture class not conducted in the 4 villages in common is agroforestry. Because execution of the project was delayed due to NGO's lack of experience in management, a technical lecture class by means of demonstration could not be conducted although seeds and explanatory brochures had been distributed. Though improvement of eucalyptus coppice forest had been planned in 3 villages (except Analamihoatra), because villagers' needs decreased as mentioned above, no classes were conducted. In Angodongodona, communications between villagers and NGO were not good, and no technical lecture classes in the production of fruit trees were conducted.

In technical lecture classes in the production of compost conducted in all of 4 fokontanys, demonstration was made at several farming houses in each fokontany and hamlet.

Table V-3 Conducting the technical lecture class

| Fokontany | Conducted technical lecture class | Not conducted technical lecture class |
|-----------------|--|---|
| Andrefanivorona | Planting of fruit trees, production of compost, afforestation with eucalyptus or others, improvement of charcoal-making technique | Agroforestry, improvement of eucalyptus coppice forest |
| Ambohimanjaka | Planting of fruit trees, production of compost, afforestation with eucalyptus or others, fish farming in rice fields, improvement of charcoal-making technique | Agroforestry, improvement of eucalyptus coppice forest |
| Angodongodona | Production of compost, afforestation with eucalyptus or others, fish farming in rice fields, improvement of charcoal-making technique | Agroforestry, improvement of eucalyptus coppice forest Planting of fruit trees |
| Analamihoatra | Planting of fruit trees, production of compost, agroforestry (hedge), afforestation with eucalyptus or others | Agroforestry (fodder) |

The number of lecture classes conducted for the project of compost production and the state of attendants in each fokontany are as shown in Table V-4. The distinctive features are as follows:

- ① Twenty lecture classes were conducted in 4 fokontanys. The average number of attendants per class was 7.
- ② The total number of attendants was large in Ambohimanjaka because the number of lecture classes held was large. Comparing the average number of attendants, however, that of Andrefanivorona and Analamihoatra is larger (9).
- ③ The ratio of women's participation in Analamihoatra is remarkably high. On the other hand, the ratio of women's participation was extremely low in Angodongodona. In Ambohimanjaka, one of three participants was a woman.

Table V-4 Situation of technical lecture classes held in production of compost

| Fokontany | Number of participating hamlets | Number of lecture classes held | Total number of attendants | | Average number of attendants |
|-----------------|---------------------------------|--------------------------------|----------------------------|---------------------|------------------------------|
| | | | Total number | Percentage of women | |
| Andrefanivorona | 1 | 3 | 26 | Unknown | 9 |
| Ambohimanjaka | 7 | 10 | 61 | 34% | 6 |
| Angodongodona | 3 | 4 | 30 | 17% | 8 |
| Analamihoatra | 3 | 3 | 26 | 77% | 9 |
| Total | 14 | 20 | 143 | 43% | 7 |

Note: If classes were conducted in two or more hamlets on the same day, the number of hamlets was regarded as the number of lecture classes held.

2-2 Efficiency

Efficiency was valued from the difference between the plan of each project and the actual result of execution. Concretely, analysis was made on whether or not each project had been executed as planned, and, if execution of the project had been delayed, what was the reason for the delay.

(1) Planting of fruit trees

Technical lecture classes were conducted, and planting and culture of young trees was carried out as planned. No lecture classes in grafting were conducted for reasons of time.

(2) Manufacture of compost

Though technical lecture classes in the manufacture of compost aiming at soil improvement were scheduled to be conducted in April according to the plan, classes were actually conducted at 17 places in 14 hamlets in the period between May and July. Reasons for the delay were preparatory farm work for potato cultivation, such as plowing and the delay of acquisition of biomass to be used as materials of compost.

(3) Agroforestry

1) Hedge laying

Seeds of plants such as *Tephrosia spp.* and *Crotalaria spp.* for hedges were distributed to fokontanys from late October to middle November as planned, except for some fokontanys. It was, however, in or after December when seeds which had been distributed to fokontanys were distributed to each hamlet or resident. Technical lecture classes in the method of sowing and others were not conducted except in Analamihoatra. The main reasons for the delay of distribution to villagers and insufficient technical guidance were:

- ① Villagers could not take the time because they were too busy with farm work such as plowing in the farming season.
- ② NGO had little experience in management and was neglectful.
- ③ Technical lecture classes were given up due to the shortage of rainfall.

2) Fodder production

Technical lecture classes in seed sowing and plantings for fodder such as *Penisetum purpurum* and *Bracharia spp.* were planned in October, but they were not conducted. Although seeds or young plants were distributed in or after December, the number of distributed young plants was small and the quantity distributed to participating villagers was not sufficient. Some villagers could not receive the distribution. At the time of the distribution, the NGO gave explanatory documents to the Watershed Management Committees and

instructed them to have villagers carry out operations by themselves. Some planted young plants withered, although rarely. The main reasons for the delayed distribution to villagers, the distribution of insufficient quantity and the lack of technical guidance were:

- ① The NGO had little experience in management and was negligent.
- ② Conveyance of information, such as the time and date of distribution, was not thorough.
- ③ Villagers omitted some work due to the farming season when they were busy plowing irrigated rice fields and doing other work.
- ④ Distributed seeds were different from what villagers had requested.

(4) Afforestation with eucalyptus and other trees

Operations, from preparation of young plant fields (design and installation of the fields) and purchase of seeds to seed sowing, went forward almost as planned in the four fokontanys. After that, however, the below-mentioned delays occurred in the processes of young plant raising (e.g., care of young plant fields and transplantation in pots) and tree planting and culture.

1) Insufficient care of young plant fields

In several hamlets in two fokontanys of the Mantasoa zone, work to manage young plant culture, such as sprinkling of water and weeding after seed sowing, was not sufficiently carried out and young plants were neglected. Reasons for this were:

- ① Wilding or purchasing young plants took less labor.
- ② Because of the difference from villagers' original needs (extensive farming technique and new technique), interest in the production of young plants declined.
- ③ Villagers had no time because they were busy with farm work.
- ④ Villagers lost the will to care for young plants since much time was required to care of the young plant fields.
- ⑤ Villagers consciously behaved in a way to escape from pressure of local influential people who were against the PS projects.

2) No execution of transplantation in pots

In several hamlets in the two fokontanys of the Mantasoa zone, transplantation of young plants in pots was not carried out for the following reasons.

- ① The traditional culture of young plants with naked roots required less labor.
- ② Villagers preferred to adhere to the traditional culture of young plants with naked roots.
- ③ Villagers could not make time for work because they were busy with farm work, such as plowing irrigated rice fields and making charcoal.

3) Delay of planting

In three fokontanys (except Analamihoatra), planting was delayed for the following reasons:

- ① Time of planting was delayed due to busy farm work, such as work for irrigated rice fields.
- ② The period suitable for planting was missed due to the small amount of rainfall in the rainy season.
- ③ Selection of planting places took time.

4) No execution of planting

In several hamlets in two fokontanys of the Mantasoa zone, although young plants were raised, the planting of trees was not carried out for the following reasons:

- ① As there was already artificial forest land in the villages, proper planting places could not be selected.
- ② Wage labor outside the village was customary, and the period of such work conflicted with the work of afforestation.
- ③ Rainfall was insufficient.
- ④ Villagers lacked planning quality.

(5) Improvement of eucalyptus coppice forest

In the project plan, execution was planned in two fokontanys of the Mantasoa zone in June. But, due to the decrease of villagers' needs, this project was not carried out.

(6) Improvement of charcoal-making technique

In the project plan, execution was planned in three fokontanys (except Analamihoatra) in June. This project was carried out in July, however, time was required to select technical experts to demonstrate.

(7) Fish farming in rice fields

For fish farming in rice fields, as the quantity of produced fry was insufficient, the shortage of fry had to be made up for. As a result, the distribution of fry to participating villagers was delayed. Reasons for the small quantity of produced fry were:

- ① Persons in charge of spawn collection from parent fish and hatching operations had not acquired sufficient technique.
- ② Female fish did not spawn because parent fish received stress during transportation and cultivation.
- ③ There were nutrition problems, including baits.
- ④ There was damage by cyclones.

2-3 Influences

At evaluation meetings with villagers' participation and at interviews, villagers freely mentioned positive and negative social and natural influences. The summary is as shown in Tables V-5 and V-6.

Social influences are summarized from the following five points of view.

(1) Influences upon income and the prospect of it

Positive influences

- ① As villagers could reduce the quantity of purchased chemical fertilizer because they attended lecture classes in how to make compost and practiced it there, cash expenditure could be saved.
- ② Because seeds of vegetables were provided, the quantity of purchased seeds could be reduced.
- ③ Because young plants of fruit trees were supplied, self-consumption or sale of fruit is expected in the future.
- ④ In the project to improve charcoal-making technique, the quantity of charcoal made increased by practicing improved technique. Therefore, improvement of cash income can be expected.

(2) Influences upon life

Positive influences

- ① As villagers had opportunities to meet villagers in other hamlets at gatherings of the Watershed Management Committee and other meetings, communications among hamlets has become active.
- ② As a result of application of ZODAFARB, villagers have become able to have access to national land.
- ③ As seeds of Tephrosia were supplied under the Agroforestry project, villagers will be able to raise and use them as materials of compost in the near future.
- ④ There is a direct convenience that hydraulic power generation has brought electricity to the village.

Negative influences

- ① As a lot of time was taken for participation in PS projects, it interfered with daily life including farm work.
- ② Project plans had to be executed quickly, not at the slow pace of the village.
- ③ Excessive responsibility and work were imposed on members of the Watershed Management Committees and persons responsible for projects.

(3) Changes of villagers' consciousness

Positive influences

- ① The feeling of fear about Japanese decreased.
- ② As projects were progressing, the impression of Japanese became better. As a result, among villagers who did not participate in projects at the beginning because they feared Japanese, some later started to participate in projects.
- ③ The power of social unity in the community was strengthened.
- ④ Isolated villages had interchanges with the outside world, and exchanges of opinions with the outside became easy.

Negative influences

- ① There was a village where difference of opinions among villagers resulted in disagreements.
- ② Among villagers in villages surrounding those covered by PSs, some villagers were fearful of frequent Japanese visits at the beginning of the projects. As projects were being carried forward, the feeling improved.

(4) Difference brought about between participating villagers and those not participating

Negative effects

- ① In villages where participation after the start of projects was not accepted, the relationship between villagers who participated and those who did not participate became stiff, and inequality occurred.
- ② There was a village where benefits of projects centered on specified villagers because they were members of the Watershed Management Committee.

(5) Unexpected effects

Positive effects

Villagers who feared Japanese living around the village covered by PS showed interest in projects, and three villagers attend the evaluation meeting. There was an unexpected effect that neighboring villagers' consciousness of Japanese changed in a favorable direction.

Negative effects

Unfavorable rumors about Japanese at the beginning were settled with progress of the projects. A new rumor, however, spread. It was that the Japanese would plunder the outcomes of projects in the future. Although some villagers still have some misgivings about this rumor, many villagers trust in the Japanese and do not believe it.

Table V-5 Positive and negative social influences

| Fokontany | Positive influences | Negative influences |
|-----------------|---|--|
| Andrefanivorona | <ul style="list-style-type: none"> - Villagers' communications were activated among hamlets. - The feeling of fear about foreigners decreased. - The power of social unity was strengthened. - Time was saved. | <ul style="list-style-type: none"> - There were no changes in the life level of villagers. - Time required for participation was considerable. |
| Ambohimanjaka | <ul style="list-style-type: none"> - Cash expenditure was saved because the quantity of purchased chemical fertilizer was reduced. - Purchase of seeds was reduced. - The feeling of fear about Japanese decreased. - Consumption of fruit from planted trees is expected. - Materials of compost are expected. | <ul style="list-style-type: none"> - Time taken for project operations was considerable. - The pace of project plans was too quick. |
| Angodongodona | <ul style="list-style-type: none"> - Communications were activated among villagers. - Materials of compost are expected. - It is expected that cash income brought about by improvement of charcoal-making technique will increase. - Access to national land was obtained through ZODAFARB. - The feeling of fear about Japanese decreased. | <ul style="list-style-type: none"> - Time taken for project operations was considerable. - Difference of opinions and mutual non-understanding arose among participating villagers. - Benefits of projects were partial to specified people. - There was inequality between villagers who participated and those who did not. - Uneasiness was felt in the process of ZODAFARB. |
| Analamihoatra | <ul style="list-style-type: none"> - The capacity of community union was strengthened. - Materials of compost are expected. - There are direct benefits of projects (hydraulic power generation, compost, and afforestation). - Exchanges of opinions with those outside of the village became easy. - Villagers outside the village attended evaluation meetings. | <ul style="list-style-type: none"> - Responsibilities and work increased excessively. - Villagers had a feeling of fear about Japanese, and relationships with surrounding villagers worsened (although this have been improved). - Rumors about the projects spread. |

Regarding natural influences, villagers were asked explain changes in the natural environment they felt through execution of projects.

As a result, improvement of views and change of grassland to forest were mainly mentioned as positive natural influences. While no particular negative natural influences were described, there was the opinion that the project period was too short to judge influences upon the natural environment.

Table V-6 Positive and negative natural influences

| Fokontany | Positive influences | Negative influences |
|-----------------|--|---------------------|
| Andrefanivorona | - Views were improved by hedges around cultivated land. - Soil improvement with Tephrosia is expected. | - Nothing special |
| Ambohimanjaka | - Views were improved by greening. | - Nothing special |
| Angodongodona | - Views were improved by greening. | - Nothing special |
| Analamihoatra | - Views were improved. - Grassland was changed to forests by afforestation. - Frequency of burning was reduced. - Moisture is maintained. | - Nothing special |

2-4 Impartiality in participation

Impartiality in participation was evaluated in the following four aspects:

- ① Whether or not there was participation by socially weak people, such as women and villagers in the poor class,
- ② Whether or not seeds or young plants were impartially distributed to participants,
- ③ Whether or not participating villagers had equitable burdens of work, such as arrangements of materials and joint labor, and
- ④ Whether or not there were villagers who did not participate and, if any, why they did not participate.

(1) Participation of the socially weak people

- ① In Andrefanivorona, participation by all social classes was seen, and women's positive participation was characteristic.
- ② In Ambohimanjaka, the number of participants in the rich and poor classes was small. People in the rich class did not participate because they had already acquired various kinds of skills and had no need of or interest in the projects. People in the poor class suffered the following inequality because they did not own cattle. For production of fruit trees, according to the guidance of technical experts, young plants of fruit trees were supplied to households that could prepare compost of sufficient quantity to be used for planting fruit trees. Therefore, it was determined that, among participating households, those who could not prepare compost would be given branches for grafting in the future. This means that young plants of fruit trees would not be supplied to villagers who did not own cattle (could not prepare compost). This left a problem in the terms of impartiality. Actually, there were villagers to whom young plants of fruit trees were not supplied because those plants were monopolized by a limited number of villagers.
- ③ In Angodongodona, there was a small number of participating villagers in the poor class who did not have time to participate because they were busy with farm work or wage labor.
- ④ In Anlamihoatra, the disparity in wealth among villagers was small and they had a

common interest in and motivation for participation in projects. Therefore, more than 70% of the total number of households participated in PS projects.

(2) Impartial distribution

Regarding the distribution of young plants of fruit trees, the below-mentioned partiality occurred:

- ① In Ambohimanjaka, young plants of fruit trees were not distributed to participating villagers in the poor class who did not own cattle, as stated above, due to technical problems.
- ② In Angodongodona, young plants of fruit trees were distributed to 12 households, not the 64 households that planned to participate. It was said that the reason was the number of young plants was too small. But, while 330 young plants of fruit trees were distributed in the whole village, as many as 77 plants were distributed to one household. This shows lack of impartiality.

(3) Impartial burden of work

- ① In Andrefaniborona, work was impartially allotted in many projects. For management of young plant fields in one hamlet, however, management and other operations were carried out only by specified families, and there was no cooperation by other hamlet villagers.
- ② In Ambohimanjaka, through joint work, participating villagers impartially undertook work such as young plant field making and preparation of materials of compost.
- ③ Similarly in Angodongodona, participating villagers' share of responsibility for joint work was impartially taken.
- ④ In Analamihoatra, for construction and management of young plant fields, the share of work was taken by allotting the necessary number of people to participate in the work to each household, so that specified participants would not have an excessive burden.
- ⑤ For installation of small scale hydraulic power generating facilities in Analamihoatra, unbiased burdens were made by taking partial charge among three fokontanys. Construction of waterways and a tank was carried out by joint work. On the other hand, work for construction of a power-generating house was allotted.

(4) Analysis of villagers who did not participate

The summary of reasons why villagers did not participate in PSs, classified by villages covered, is as shown in Table V-7. While those who did not participate were a minority group in Analamihoatra, the number of people who did not participate was large in the other three fokontanys, as stated later in the section regarding participation of villagers. Reasons for nonparticipation common to those who did not participate in PSs can be analyzed as follows:

- ① Lack of time for participation

This major reason in the poor class was lack of time. Villagers in this class are busy with farm work, charcoal-making operations by contract, timber-felling or work away from home for wage labor, and the women are very busy with household affairs and childcare. They are people who could not participate for these reasons although they wanted to do.

② Difference between villagers' needs and PS projects

This occurs because villagers are interested in the production of farm products and supply of chemical fertilizer, both of which will be able to produce an outcome in a short term, but not interested in operations that take a long term until an outcome is obtained, such as afforestation.

In addition, since they have already acquired technique and skill executed in PS projects and have practiced them, they do not have an interest.

③ Bystanders

These are nonparticipants who watch and observe doings, waiting for the result before deciding on their participation. They consider that, if the project succeeds, they will participate in it from the next time but, if it fails, they will not participate.

④ Misunderstanding of projects

Some people do not participate because they are convinced that the PS projects have some secret purpose.

Some people misunderstand, having gotten the idea that, as they paid a small amount of money for the purchase of fry for fish farming in rice fields, they also need to pay money for participation in other projects.

⑤ Distrust of Japanese

Some people have a distrust of Japanese because of rumors that the Japanese might take over their land and or plunder villagers of the outcomes of projects. As a temporary behavior, some people were watching what Japanese were doing.

Table V-7 Reasons of nonparticipation of villagers who did not participate in PSs

| Fokontany | Reason of nonparticipation |
|-----------------|---|
| Andrefanivorona | ① Interest and needs are low because of projects that will not produce profit in the short term. ② Work away from home for wage labor |
| Ambohimanjaka | ① Villagers in the poor class lack time for participation. ② Difference between villagers' needs and the project plan ③ Misunderstanding of project due to rumors ④ Bystander-like attitude ⑤ Distrust of foreigners including Japanese |
| Angodongodona | ① Interest in projects is low. ② The purpose of projects did not correspond to villagers' needs. ③ Some villagers spread rumors that lowered the will of participation. ④ Profits were monopolized by specified villagers, and those who wanted to participate were excluded. ⑤ Conveyance of information was not thorough. |
| Analamihoatra | ① Distrust of the project plan ② Interest in projects is low. |

2-5 Appropriateness of projects

For appropriateness of projects, evaluations were made on the state of consistency of the basic project aim "environmentally healthy use of land" with villagers' needs, and the degree of participating villagers' satisfaction with executed project.

(1) State of consistency of the aim with needs

The state of consistency classified by villages is as follows:

- ① In Ambohimanjaka, the project aim was sufficiently in accord with villagers' needs regarding procurement of young plants of fruit trees and seeds for agroforestry. But securing of land on the east side of the lake and construction of a bridge, which were the initial villagers' needs, were not realized.
- ② In Ambohimanjaka, projects that met with villagers' needs, i.e., securing of compost and improvement of agricultural productivity, were carried out. Improvement of roads, however, was not in accord with their needs.
- ③ In Angodongodona, the initial villagers' needs were construction of a dam, supply of chemical fertilizer, improvement of roads and so on. These were widely different from the basic aim of watershed management. This difference was not lessened until the end of the projects. However, as to afforestation with eucalyptus and other trees, in which villagers had low interest at the beginning, their interest rose through introduction of ZODAFARB, and the project aim was consistent with villagers' needs.
- ④ In Analamihoatra, the basic aim of watershed management was consistent with villagers' needs, particularly in afforestation with eucalyptus and other trees, ZODAFARB and installation of a small scale hydraulic power generating devices. For afforestation with eucalyptus and other trees, ridge parts and the upper parts of the sloping land, which were important places for securing water sources, were selected as land to be afforested, and then trees were planted there.

For ZODAFARB, trees were also planted on grassland in the upper part of sloping land. This was an environmentally sound method in terms of land use. Regarding installation of small scale hydraulic power generating devices, in order to generate power throughout the year, a certain amount of water must be secured. It was then linked with securing of water and creation of water-source forests. Therefore, this work was consistent with the basic aim of watershed management.

(2) Degree of satisfaction with projects

Table V-8 shows evaluation of the degree of participating villagers' satisfaction with projects as a whole. This evaluation was made from the below-mentioned 5 points and classified by villages covered by PSs. The essentials, classified by points of evaluation, are as follows.

Table V-8 Participating villagers' degree of satisfaction with projects as a whole

| Fokontany | Contents of projects | Approach of the participation type | Technology transfer | Advising support | Strengthening of the organization |
|-----------------|----------------------|------------------------------------|---------------------|------------------|-----------------------------------|
| Andrefanivorona | Unsatisfied | Satisfied | Unsatisfied | Satisfied | Satisfied |
| Ambohimanjaka | Unsatisfied | Satisfied | Unsatisfied | Satisfied | Unsatisfied |
| Angodongodona | Unsatisfied | Satisfied | Unsatisfied | Unsatisfied | Unsatisfied |
| Analamihoatra | Greatly satisfied | Satisfied | Satisfied | Satisfied | Satisfied |

1) Contents of the project

Contents of projects were evaluated to be unsatisfactory in three fokontanys (except Analamihoatra). Evaluation in those fokontanys was that the contents of projects had only partly met villagers' needs. Villagers said that they had expected projects that would show an effect in a short period (supply of agricultural seeds of a large quantity and supply of chemical fertilizer). The degree of satisfaction with each project is as shown in Table V-9. The degree of satisfaction with each project and the reasons are as follows:

Production of fruit trees:

A satisfactory evaluation was obtained in Andrefanivorona and Analamihoatra, while there were many unsatisfied villagers in Ambohimanjaka and Angodongodona. Reasons for this are as follows:

- ① There were many demands for specific young plants, such as Japanese persimmon, and the number of such young plants allotted was smaller than those who wanted them.
- ② Young plants of fruit trees were not distributed to participating households that could not prepare compost.
- ③ Specified participating villagers monopolized young plants of fruit trees.
- ④ As the number of participating households was larger than planned, young plants of fruit trees to be distributed were in short supply.

Production of compost:

Satisfactory evaluation was obtained in all of the villages covered by PSs. The degree of satisfaction was also raised by the possibility that Tephrosia employed in agroforestry will be able to be used as materials of compost in the near future.

Agroforestry:

An unsatisfactory evaluation was obtained in all of the villages covered by PSs. The reason is that demonstrations of hedge making and seed sowing for fodder were not carried out and, therefore, many villagers did not know how to raise the distributed seeds. For these agroforestry operations, NGO's activities were limited to making oral explanations for distribution of seeds and young plants regarding the method of seed sowing, etc., distributing

explanatory documents about the method to sow seeds for fodder, or holding simple seminars in several hamlets. For these reasons, technology transfer and advisory support were also insufficient. These conditions resulted in dissatisfaction.

Afforestation with eucalyptus and other trees:

A satisfactory evaluation was obtained in the Tsiazompaniry zone, while dissatisfaction was expressed by most villagers, in the Mantasoa zone. Reasons for satisfaction or dissatisfaction are as follows:

Reasons for satisfaction

- ① As the number of participants in operations ranging from work for young plant fields to afforestation was small, a sufficient number of young plants could be obtained.
- ② Young plants in pots raised in young plants fields had a higher rate of rooting than that of wilding.
- ③ Artificial forest land and accessible forest land could be expanded by application of ZODAFARB and afforestation.

Reasons for dissatisfaction

- ① As there were many young plants left over, production of young plants and afforestation were not villagers' keen needs.
- ② Young plants with naked roots or wilding require less labor in terms of time.
- ③ Some people adhere to the traditional method of raising young plants with naked roots.

Improvement of charcoal-making technique:

Dissatisfaction was expressed in three fokontanys where this project was conducted. The reasons were:

- ① In the technique of improvement, although it took a long time to burn wood to make charcoal, the quantity of made charcoal increased only by about 10% in comparison with the quantity of charcoal made by the traditional technique.
- ② Since the technique of improvement requires complicated skill, the traditional technique is enough for villagers (adherence to the traditional technique).
- ③ The technique of improvement is costly because a chimney has to be bought.
- ④ As the demonstration was carried out during rain, a satisfactory result was not obtained.

Fish farming in rice fields:

Evaluations of satisfaction differed between the two villages where the project was executed. In Ambohimanjaka, although there were problems in the process of fry production, as stated in the section regarding the efficiency, fry of quantity with which participating villagers could be satisfied were distributed by, for example, delivering purchased fry. On the other hand, in Angodongodona, a similar problem that the quantity of production of fry was very small

occurred, and it was made up for by purchasing fry. Participating villagers, however, considered that the quantity of the distributed fry to be insufficient, and there were many participating villagers who were unsatisfied.

Table V-9 Degree of satisfaction with each project

| Project | Andrefanivorona | Ambohimanjaka | Angodongodona | Analamihoatra |
|---|---------------------------|---------------|---------------|-------------------|
| Planting of fruit trees | Satisfied | Unsatisfied | Unsatisfied | Satisfied |
| Production of compost | Satisfied | Satisfied | Satisfied | Satisfied |
| Agroforestry | Unsatisfied | Unsatisfied | Unsatisfied | Unsatisfied |
| Afforestation with eucalyptus and other trees | Satisfied/ Unsatisfied | Unsatisfied | Satisfied | Satisfied |
| Afforestation with eucalyptus and other trees | Unsatisfied | Unsatisfied | Unsatisfied | — |
| Afforestation with eucalyptus and other trees | — | Satisfied | Unsatisfied | — |
| Comprehensive valuation | Unsatisfied | Unsatisfied | Unsatisfied | Greatly satisfied |

2) Approach with villagers' participation

All work from preparation of the project plan to execution of the project was carried out with villagers' participation. The degree of satisfaction with this fact was high. The main reasons for satisfaction are:

- ① Exchanges of opinions and discussions could occur relatively freely among villagers.
- ② Exchanges of opinions between villagers and the NGO team were promoted.
- ③ Through villagers' direct/voluntary participation in demonstration and joint work, self-confidence in the unassisted solution of problems was given to villagers who were used to approaches such as the top-down spread of agriculture.
- ④ As the approach with villagers' participation was applied according to the actual local circumstances, villagers could express their opinions freely and without misgivings.
- ⑤ Participating villagers were encouraged to have a sense of responsibility, and cooperativeness was being formed among villagers accordingly.

On the other hand, the following problems were drawn out.

- ① There was a village where certain villagers took part in all projects excessively in order to obtain exclusive possession of the own profits. It resulted from the fact that, in this approach, importance was given to villagers' spontaneousness, and villagers themselves act as the nucleus. High evaluation can be placed on positive participation in projects. But the purpose was profits of certain participating villagers, and many villagers were eliminated from participation. Therefore, it was also a great problem in the aspect of impartiality.
- ② As the project plan was prepared intensively in a short period, villagers were obliged to spend much time in preparation of the plan in that period. Therefore, participating

villagers felt that it was a rather time-consuming approach.

- ③ In addition, there was an aspect that the plan was not made fully based on villagers' needs and independence, which are essential advantages of the approach with villagers' participation. This was because the thinking process of participating villagers could not follow the pace of the investigation, since workshops for analyses of the actual situations and problems were held intensively in a short period. Therefore, although a diagram was made, participating villagers could not concretely imagine that they would do a project for the year by themselves, and the project tended to have had excessive contents beyond the usual scope of daily life. This situation resulted in one of the causes of difference between the plan and results of execution and difference in the degree of achievement.
- ④ In the period between determination of a project plan and execution of a project, there was a blank period before the period of preparation for the plan. This allowed the will of participating villagers to partly be lowered.

3) Technology transfer

Dissatisfaction was obtained expressed except in Analamihoatra. The reasons are as follows:

- ① As demonstrations were not carried out in all hamlets, some villagers could not participate.
- ② For agroforestry, seeds or something else were distributed, and seminars and demonstrations were conducted in some hamlets. In most hamlets, however, demonstrations were not carried out and villagers did not know how to raise the sowed seeds. Technology transfer was insufficient.
- ③ In the project to improve charcoal-making technique, there was only one technical lecture class where a good result could not be obtained due to the rainy weather. Therefore, operations for improvement and new technique had not been fully understood. Technology transfer was insufficient.

On the other hand, a satisfactory evaluation was obtained for the following reasons in Analamihoatra:

- ① Though villagers are short of the experience required to master the technique, the process of technology transfer is clear and its outcome is appearing now.
- ② Projects are in progress on the initiative of villagers themselves in Kelialina and Analamihoatra.
- ③ The technique to manufacture compost is applied in combination with a local method.
- ④ Techniques of afforestation and agroforestry have been newly acquired.
- ⑤ Technical guidance in fodder was insufficient.

4) Advising support

Satisfaction was expressed except in Angodongodona. The reasons are as follows. On the other hand, the reasons for dissatisfaction in Angodongodona were that the technique was not new for some participants and that sufficient advice could not be obtained.

- ① In each project except agroforestry, advice and technical support were appropriately given by technical experts.
- ② Particularly in Analamihoatra, as follow-up of the applied technique was carried out after the start of projects in each hamlet, the degree of trust in farmers' projects and NGOs was raised.
- ③ As activity supporting PSs, inspection of advanced places to be conducted by members of the Watershed Management Committee and key farmers was planned and carried out for four villages covered by PSs with 32 participants for two days, on December 14 and 15, in Ankazodandy. The purpose of this inspection was to exchange information and opinions among farmers regarding methods included in plans of small-scale watershed management such as agroforestry, uses of biomass and the technique of dry field farming and, then, to apply the results to future execution of watershed management plans. According to hearing from participants in the inspection of advanced places, there were the following effects of the inspection, and an evaluation of satisfactory as supporting activity was obtained.
 - New knowledge was obtained.
 - Concrete image regarding watershed management could be seized.
 - The will of participation in projects was improved.
 - How to have social relations with NGOs was improved.

5) Strengthening of the organization

A satisfactory evaluation as satisfaction was obtained in Andrefanivorona, while dissatisfaction was expressed in Ambohimanjaka and Angodongodona. Reasons for each evaluation are as follows:

Reasons for satisfaction

- ① The power of organization has been strengthened through workshops, seminars, demonstrations and follow-ups.
- ② Through workshops and voluntary efforts for participation of villagers, many villagers were organized and projects were executed smoothly.

Reasons for as dissatisfaction

- ① As each project was carried out in a unit of a hamlet, in some fokontanys where hamlets were located at great distances, the power of the organization in a hamlet was strengthened. On the contrary, the power of the organization as a whole fokontany decreased.
- ② As participants centered on specified villagers, there occurred problems such that

information was not conveyed to other people. As a result, the number of participants decreased, participants were fixed, and many villagers were not organized.

2-6 Sustainability and self-reliance

Concerning sustainability and self-reliance of projects, valuation was made on the Watershed Management Committees' function to operate the organization, the situation of villagers' participation and the state of cooperation among villagers.

(1) Function to operate the organization

The Watershed Management Committees' function to operate the organization was evaluated in the following four aspects:

- ① Leader analysis of chairmen of the Watershed Management Committees with their ages, occupations, academic careers, incomes and reasons for selection
- ② Analysis of participants including their social linkage with constituent members of the Watershed Management Committee
- ③ Women's participation in the Watershed Management Committees
- ④ Problems related to organizational operation

1) Leader analysis

The results of leader analysis of chairmen of the Watershed Management Committees are as shown in Table V-10. What is common to chairmen of the four villages covered by PSs is the following:

- ① They are male.
- ② The level of education is relatively high. Judging from the fact that they run commerce or have more annual income than general villagers, they are rich villagers.
- ③ They have a cooperative character (except the chairman in Angodongodona).

Table V-10 Leader analysis of chairmen of the Watershed Management Committees

| Fokontany | Sex | Age | Occupation | Level of education | Annual income | Social class | Character | Method of selection | Reason for selection |
|-----------------|------|-----------------|--------------------------|----------------------|---------------|--------------|---|---------------------|---------------------------------------|
| Andrefanivorona | Male | In his fifties | Agriculture | Elementary education | 3 mil. FMG | Middle class | Cooperative character with a strong sense of responsibility | Mutual election | Opinion leader and a superior in age |
| Aambohimanjaka | Male | In his thirties | Agriculture and commerce | Elementary education | 6 mil. FMG | Rich class | Cooperative | Election | Well known and with time on his hands |
| Angodongodona | Male | In his thirties | Agriculture | Secondary education | 4.5 mil. FMG | Rich class | Creative | Mutual election | Level of education and positiveness |
| Analamihoatra | Male | In his twenties | Agriculture and commerce | Secondary education | 5 mil. FMG | Rich class | Cooperative | Election | Youth and level of education |

Criteria of selection of chairmen of Watershed Management Committees are summarized in Table V-11. The following descriptions are grounds and circumstances of selection that were obtained from the summary of criteria of chairman selection classified by fokontany.

- ① The chairman in Andrefanivorona was recommended as a chairman by villagers because he, in his fifties, was a past village headman and was the oldest. He accepted it by himself. Namely, since he was a past village headman, this administrative position influenced the standard of selection.
- ② In Ambohimanjaka, the most important criterion was economic affluence. This was shown by the fact that the chairman in this village had time on his hands because he operated commerce. In addition, he was well known because he was a member of a parents' association of a primary school.
- ③ The chairman in Angodongodona was a son of an influential person in the village (who ran a store and was in the rich class). Although villagers agreed that the chairman would be selected by election at the beginning, this influential person stopped it and then mutual election was chosen. As a result, his son was elected. Known from such circumstances, the chairman was selected because of blood relationship with the influential person in the village.
- ④ In Analamihoatra, a young resident under thirty years old was selected as the chairman. This is because he was young and had graduated from a junior high school which means that his academic level was high. But, actually, this young chairman did not have substantial initiative and elderly people supported him, spoke about various things and took the leadership. It is considered that the resident took office as the chairman because he had a blood relationship with elderly people who had such leadership.

The criteria with which the chairmen were selected in the four villages covered by PSs were not according to personal character or administrative positions but the social aspects related to blood relationship or economic power.

Table V-11 Criteria to select chairmen of the Watershed Management Committees

| Fokontany | Economic power | Administrative position | Blood relationship | Personal character | Level of education |
|-----------------|----------------|-------------------------|--------------------|--------------------|--------------------|
| Andrefanivorona | | ⊙ | ○ | △ | |
| Ambohimanjaka | ⊙ | | △ | ○ | |
| Angodongodona | △ | | ⊙ | | ○ |
| Analamihoatra | △ | | ⊙ | | ○ |

Note: ⊙-- Criterion of selection on which the most importance was placed.
 ○-- Criterion of selection on which secondary importance was placed.
 △-- Criterion of selection on which tertiary importance was placed.

2) Analysis of participants

Social characteristics of constituent members of the Watershed Management Committees of

the four villages covered by PSs are as follows:

- ① Membership of the Committee in Andrefanivorona are not composed based on blood relationship, although this fokontany is a small village made up of 67 households.
- ② In Ambohimanjaka, the Committee was organized by selecting representatives from five hamlets and primary schools. Membership was taken by relatively rich villagers.
- ③ In Angodongodona, the Committee was made up of representatives of each hamlet and other persons. It was, however, merely nominal because the work was not allotted to members and was subject to the chairman's arbitrary discretion. In addition, members of the Committee are considered to be villagers the chairman likes.
- ④ In Analamihoatra, the Committee consists of representatives of three fokontans. Selection of its constituent members is largely related to blood relationship among villagers.

3) Women's participation in Watershed Management Committees

Table V-12 shows the situation of women's participation in Watershed Management Committees in four villages covered by the PS.

Viewing the situation of women's participation in Watershed Management Committees, only one woman participated in two villages, respectively, in Mantasoa zone. On the other hand in Tsiacompaniry zone, three women and four women participated in Watershed Management Committees as members in Angodongodona and Analamihoatra, respectively. That is, the ratio of women's participation is higher in this district than in Mantasoa zone.

In Analamihoatra among these four villages, the Watershed Management Committee is fully organized. For example, committees for each field are organized and one representative of each hamlet is included in members of the Watershed Management Committee. However, the percentage of women's participation in the Watershed Management Committee of the size of 30 members is only 13%. Due to this fact and social common practices, it is men that have a strong voice in the Watershed Management Committee and lead it. In addition, particularly the elderly male group shows the great power of influence upon operation of the organization. In order to strengthen women's voices in the Watershed Management Committee, it is considered necessary to raise the ratio of women's participation and help women gain wide experiences in the Committee as well as to obtain men's understanding.

Table V-12 Situation of women's participation in Watershed Management Committees

Unit: Person · %

| Fokontany | Number of constituents of the Committee | Number of executive office members among constituents | Number of representatives of hamlets among constituents | Number of members of committees for each field among constituents | Number of female members among constituents | Ratio of women |
|-----------------|---|---|---|---|---|----------------|
| Andrefanivorona | 6 | 6 | 0 | 0 | 1 | 17 |
| Ambohimanjaka | 17 | 5 | 12 | 0 | 1 | 6 |
| Angodongodona | 10 | 4 | 6 | 0 | 3 | 30 |
| Analamihoatra | 30 | 4 | 3 | 23 | 4 | 13 |

4) Problems related to organizational operation

Problems that occurred in relation to organizational operation of the Watershed Management Committees in the four villages covered by PSs are as follows:

Andrefanivorona

- ① It was observed in joint operations such as management of young plant fields and at meetings that several members shirked their responsibility.
- ② Operation of Committee meetings was confused.
- ③ The Committee's conveyance of information to participating villagers in hamlets was insufficient.
- ④ Because independent operation requires many inputs and technical support, it requires more time.

Ambohimanjaka

- ① As the chairman of the Watershed Management Committee lost a motive of participation (because new technique could not be acquired under the PS project), he excused himself from office.
- ② Projects were operated in a unit of a hamlet, and the existing five hamlets are distant from each other. Therefore, individuality as a hamlet is strong and the role of the Watershed Management Committee organized in the fokontany decreases.
- ③ As households in a hamlet and among hamlets are located at a distance, measures were taken to inform villagers of the time and date of project execution by pasting notices on the wall of stores, etc., in each hamlet. But, because information did not reach some hamlets and was not directly delivered, the number of participants decreased.
- ④ The Committee did not inform villagers of the time and date of project execution several times.

Angodongodona

- ① The chairman of the Watershed Management Committee goes ahead of others at his own discretion because he has the character of trying to settle everything by himself. Members of the Committee and participating villagers seem to be left behind. Therefore, democratic operation of the organization is not carried out at all.
- ② The Watershed Management Committee is in danger of disruption. Information is not exchanged, and meetings of the Committee are not held.
- ③ Members of the Committee hardly open their mouth at meetings, possibly because they are sensitive to the chairman's mood.
- ④ As the father of the chairman is responsible for management of materials and mechanical equipment, and a brother of the chairman is a member of the Committee, there is concern

that benefits center on specified participants.

- ⑤ Some villagers have ill feeling toward the results of projects, while those who do not participate hope that projects will continue.
- ⑥ The relationship between the Watershed Management Committee and participating villagers is stiff.

Analamihotra

- ① It was hard to adjust the project schedule in the Committee.
- ② As Kelialina is a fokontany newly formed in November 1998, there occurred confusion regarding responsibilities of the village council and the Watershed Management Committee. Matters that were included in this confusion were which of the Administration or the Committee would call a meeting and whether or not the Administration could appeal for participation to villagers. Such confusion arose because villagers and the Administration were inexperienced. Villagers also did not understand well which of the Administration or the Watershed Management Committee was the main body of project execution, or whether or not both were the main body.
- ③ Membership of the Watershed Management Committee in Kelialina was organized with villagers who happened to participate in the work to make young plant fields. Formal consent of local villagers has not been obtained yet.
- ④ As three fokontany are scattered, information does not reach them well.
- ⑤ Members of the Committee were very busy because more responsibilities than participating villagers were involved and time was taken for meetings and other matters.

(2) Participation of villagers

The actual situations of participation of villagers were evaluated in the following three aspects:

- ① Number of participants,
- ② Social characteristics such as sex, hamlets, classes and human relationship, and
- ③ Villagers' will of participation.

1) Number of participants

The number of participants classified by projects is as seen in the results of execution of PSs in the previous chapter. Therefore, rough situations of participants in projects on the whole are summarized below.

Andrefanivorona

Numbers of participating and non-participating households classified by hamlets at the time of the intermediate evaluation are as shown in Table V-13. Finally, 25 of the total 67 households

(at present) in the villages participated, and the percentage of participation was 37% of all households. As a result, the rate of participation increased by 10% in the period between the intermediate evaluation and the final evaluation.

Table V-13 Situations of participation classified by hamlets in Andrefanivorona (at the time of intermediate evaluation)

| Hamlet | Total numbers of households | Numbers of participating households | Numbers of non-participating households |
|-----------------|-----------------------------|-------------------------------------|---|
| Andrefanivorona | 20 | 8 | 12 |
| Ambohijafy | 11 | 8 | 3 |
| Ambolohoto | 17 | 1 | 16 |
| Ambazimba | 15 | 3 | 12 |
| Antanifotsy | 19 | 1 | 18 |
| Total | 82 | 21 | 61 |

Ambohimanjaka

Numbers of participating and non-participating households classified by hamlets at the time of the intermediate valuation are as shown in Table V-14. Finally, 76 of a total of 143 households in the villages participated, and the percentage of participation was 53% of all households. As a result, the rate of participation increased by 4% in the period between the intermediate evaluation and the final evaluation.

Table V-14 Situations of participation classified by hamlets in Ambohimanjaka (at the time of intermediate evaluation)

| Hamlet | Total numbers of households | Numbers of participating households | Numbers of non-participating households | |
|---------------|-----------------------------|-------------------------------------|---|--------|
| | | | Withdrawal | Others |
| Ambohimanjaka | 38 | 12 | 11 | 15 |
| Andranokely | 21 | 19 | 0 | 2 |
| Antatatra | 21 | 10 | 1 | 10 |
| Ankatsaka | 45 | 25 | 11 | 9 |
| Aminanosy | 18 | 5 | 1 | 12 |
| Total | 143 | 71 | 24 | 48 |

Angodongodona

The numbers of participating and non-participating households classified by hamlets at the time of the intermediate evaluation are as shown in Table V-15. Finally, 50 of a total of 276 households in the villages participated, and the percentage of participation was 18% of all households. As a result, the rate of participation increased by only 3% in the period between the intermediate evaluation to the final evaluation.

Table V-15 Situations of participation classified by hamlets in Angodongodona (at the time of the intermediate evaluation)

| Fokontany | Total numbers of households | Numbers of participating households | Numbers of non-participating households |
|-----------------|-----------------------------|-------------------------------------|---|
| Angodongodona | 88 | 13 | 75 |
| Ambatotsara | 38 | 2 | 36 |
| Antokotoko | 35 | 1 | 34 |
| Ambondrona | 41 | 8 | 33 |
| Tsaratolotra | 14 | 4 | 10 |
| Ankadilandalana | 42 | 0 | 42 |
| Tombonoro | 18 | 13 | 5 |
| Total | 276 | 41 | 235 |

Analamihoatra

The numbers of participating and non-participating households classified by hamlets at the time of the intermediate evaluation are as shown in Table V-16. Finally, 200 of a total of 232 households in the villages participated, and the percentage of participation was 86% of all households. As a result, the rate of participation increased by 3% in the period between the intermediate evaluation and the final evaluation.

As described above, Analamihoatra that had the higher rate of participation in the PS than other three villages had the following factors in its social background:

- ① The village is geographically located in the hinterland and has difficulty in contact with the external world such as cities in practice. Thus, the villagers have had no other means than solving various problems by themselves within their village.
- ② The villagers had a tendency to work all together because there was a little gap between the rich and the poor.
- ③ The villagers had solidarity under the influence of the Protestant church.

Table V-16 Situations of participation classified by fokontany in Analamihoatra (at the time of the intermediate evaluation)

| Fokontany | Total numbers of households | Numbers of participating households | Numbers of non-participating households |
|---------------|-----------------------------|-------------------------------------|---|
| Analamihoatra | 65 | 60 | 5 |
| Kelilalina | 77 | 65 | 12 |
| Anovondriana | 90 | 69 | 21 |
| Total | 232 | 194 | 38 |

2) Social characteristics of participants

Andrefanivorona

- ① As this is a small-sized village in terms of the numbers of population and households, many of participants in projects participated based on territorial relationship.
- ② Participants were roughly composed of three blood relationships.

- ③ Women participated in projects and attended evaluation meetings actively, and both men and women showed a similar level of participation.

Ambohimanjaka

- ① Participation of villagers in the middle and rich classes was more active than that of villagers in the poor class.
- ② The number of participants based on blood relationship is small.
- ③ Participants were too dependent on representatives of each hamlet in many aspects.
- ④ A small number of villagers who lived in one hamlet participated in lecture classes or other meetings in another hamlet.
- ⑤ Active participation of women was observed.

Angodongodona

- ① Participating villagers were specified.
- ② Participants did not have direct blood relationship.
- ③ Villagers in the rich class participated more actively than those in the poor class.
- ④ Among participants, there were villagers who tried to control the Watershed Management Committee in an informal manner. As a result, the whole community's participation in projects was hindered.
- ⑤ Women's participation in projects is smaller than in the Mantasoa zone.

Analamihoatra

- ① As the disparity in wealth is small, villagers present a more united front toward common benefits such as uses of land, improvement of agricultural production and electricity. They clearly show a will to participate in projects.
- ② Blood relationship exists firmly among villagers, which makes cooperation of joint work under projects easy.
- ③ Women and children's active participation in each project was observed. At the final evaluation meeting, however, both participation and comments of women were limited, and there was a tendency of that comments were biased toward specified participants, such as elderly people and members of the Watershed Management Committed.

3) Willingness of participation

Table V-17 is the summary of strong or weak willingness of participation classified by projects. In all villages covered by PSs, the willingness of participation in the production of fruit trees was strong. In the Mantasoa zone, that for afforestation with eucalyptus and other trees and improvement of charcoal-making technique was weak. In Tsiazompaniry, no activity with weak willingness of participation was observed. In Angodongodona, however,

the willingness of participation in all projects was weak in the fokontany as a whole, while certain villagers had a strong will in all projects.

In Analamihoatra, the willingness of participation in all projects was strong.

As for agroforestry, although the willingness could not be evaluated because demonstrations were insufficient, it is considered relatively high since villagers expect an outcome that will be produced in a short period.

Table V-17 Willingness of participation classified by projects

| Fokontany | Projects with strong willingness obtained | Projects with weak willingness obtained |
|-----------------|--|--|
| Andrefanivorona | Planting of fruit trees | Afforestation with eucalyptus and other trees and improvement of charcoal-making technique |
| Ambohimanjaka | Planting of fruit trees, fish farming in rice fields | Afforestation with eucalyptus and other trees and improvement of charcoal-making technique |
| Angodongodona | Planting of fruit trees, fish farming in rice fields | — |
| Analamihoatra | All projects | — |

(3) Cooperation among villagers

The situations of cooperation among villagers in the villages covered by PSs are as follows:

1) Andrefanivorona

- ① Within territorial and blood relationships, cooperation in each project was seen among villagers. That among hamlet villagers, however, was insufficient.
- ② As to the production of compost, the spread of technique was observed. For example, villagers who participated in the demonstration taught the technology to those who did not participate. The dawn of such cooperative relationship outside of the projects can be evaluated as positive.

2) Ambohimanjaka

- ① Cooperation was fully made among villagers in some hamlets. Villagers start to cooperate for the purpose of common benefits in each hamlet.
- ② Operations to produce fry in fish farming in rice fields were carried out by specified households, and joint management among villagers could not be done. The listed reasons include that villagers had difficulty in finding of time to participate in culture work, which was a daily routine, because they were busy with farm work, and that the production was also technically difficult.

3) Angodongodona

The mutual cooperative relationship of villagers does not go well because of the concentration

of benefits on certain participants and a worsened relationship concerned with interests among villagers.

4) Analamihoatra

- ① For all projects, allotment of responsibility inside each fokontany and among fokontanys was clear. Therefore, cooperation among villagers goes very well.
- ② The application of ZODAFARB resulted in the realization of cooperation among villagers as concrete work.
- ③ For afforestation with eucalyptus and other trees, a series of operations, such as creation of young plant fields, transplantation in pots, management of young plant fields and planting trees, was carried out through the cooperation of villagers. For installation of small scale hydraulic power generating devices, operations were jointly done by allotting the work among three fokontanys. As seen from these, cooperative relationship among villagers was good throughout the process of project execution.

3 Comprehensive evaluation

Comprehensive evaluation was made with a view to judgement of the possibility that projects would be able to be independently continued. The results of the comprehensive evaluation are as shown in Table V-18.

In order that the four fokontanys that conducted PSs this time will independently continue projects, regardless of more or less difference in the amount of materials and labor, what will continue to be necessary in all villages includes follow-up and assistance for the organization of a Committee, technical the support and the supply of materials and mechanical equipment. Therefore, the time is not yet mature for becoming independent. Analamihoatra (including Kelialina and Anovondriana), however, has the highest possibility of independent continuity in the near future of the four villages, and its independent ability is also judged to be high.

As to three villages except Analamihoatra, the term of preparation of the plan was short. For this reason, projects could not be formed by fully examining the diverse needs of the inhabitants in the process of preparation of the participatory plan and then obtaining agreement satisfactory for the inhabitants. In addition, some needs were not met. As a result, the grade of achievement of the project and the satisfaction of the inhabitants as to the result of the project as well as the rate of participation of the inhabitants were low. Therefore, it is deemed to be necessary to restart the project from making up a new watershed management plan instead of continuing with the existing project.

The self-evaluation criteria is attached to the end of the Annex 73 "Guideline on the community/villagers participation".

Table V-18 Comprehensive evaluation of the four villages where PSs were conducted.

| Fokontany | Preparation of plans | | | Execution of projects | | | | | | | Possibility of independence |
|-----------------|----------------------|--------------------------------------|-----------------------|-----------------------|------------|--------------|------------------------|--------------------------------------|-----------------------|------------|-----------------------------|
| | Appropriateness | The rate of villagers' participation | Women's participation | Degree of achievement | Efficiency | Impartiality | Degree of satisfaction | The rate of villagers' participation | Women's participation | Continuity | |
| Andrefanivorona | △ | ○ | ○ | × | △ | ○ | × | △ | ○ | ○ | × |
| Ambohimanjaka | △ | ○ | △ | × | △ | ○ | × | ○ | △ | △ | × |
| Angodongodona | × | △ | × | ○ | △ | × | × | × | × | × | × |
| Analamihoatra | ◎ | ○ | △ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

Indexes of evaluation: ◎Very high, ◎High, △Cannot say which, ×Low

