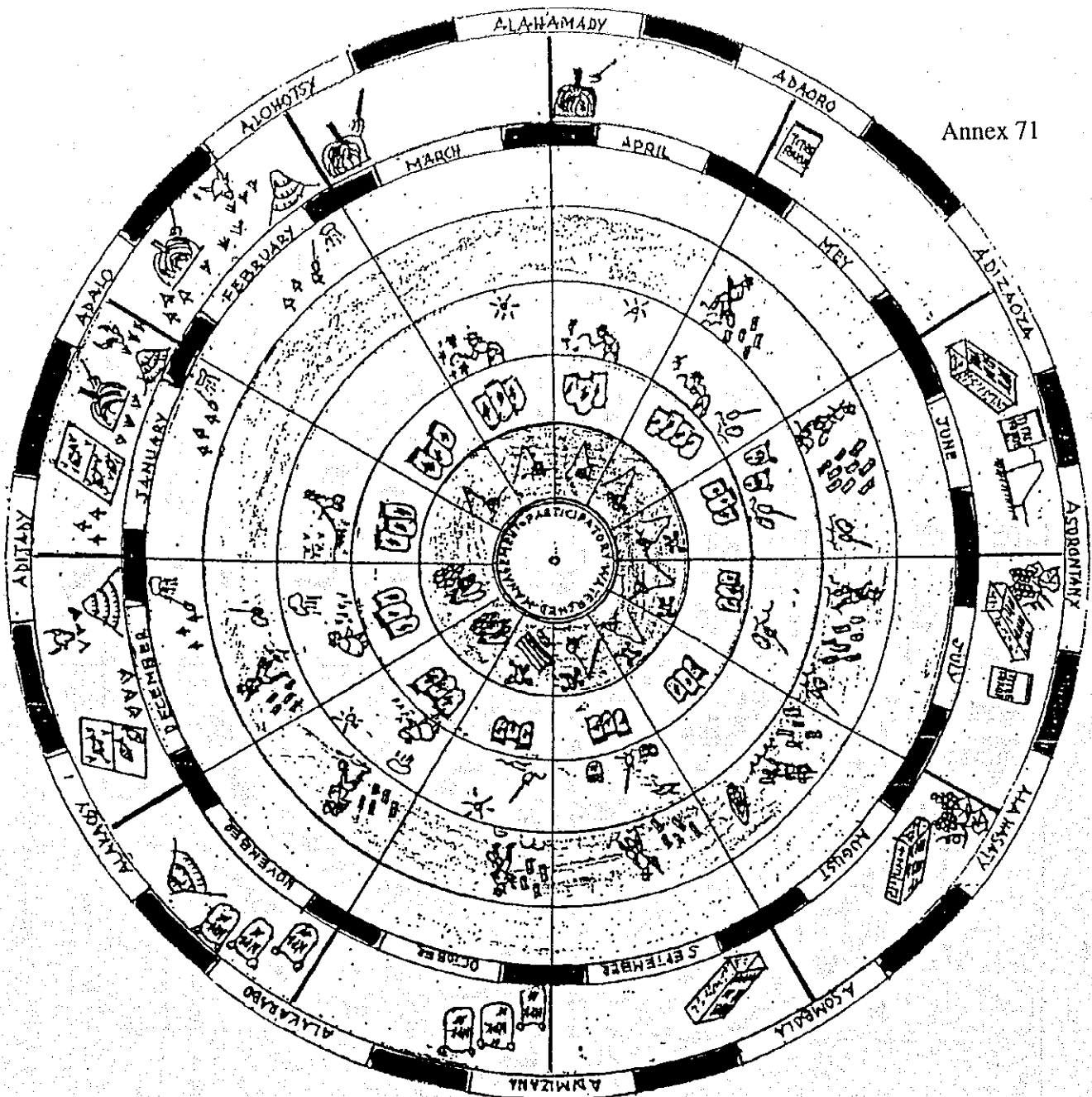


Technical packages (example of Andrefanivorona)

Field	Technical packages	Technical themes
FORESTRY	tree planting	-seedlings production -refilling
AGROFORESTRY	production and use of biomass /soil management	-live hedges -compost making -mulching -use of green manure
SYLVOPASTORAL ACTIVITY	animal feeding	-fodder production
AGRICULTURE	yield increase	-use of new efficient seeds
FRUIT PRODUCTION	fruit trees	-fruit seedlings production -grafting
CARBONIZATION	charcoal production	-promotion of improved oven support to the local practice (eg: permanent oven)



Legend











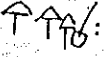

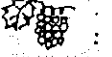





-  : Cassava planting
-  : Corn planting
-  : Rice planting
-  : Production of charcoal
-  : Famadihana
-  : Potato planting
-  : Beekeeping
-  : Chemical fertilizers
-  : Fish farming in rice fields
-  : Creation and management of nurseries
-  : Afforestation
-  : Prevention of soil erosion
-  : Planting of fruit trees
-  : Fishery
-  : Improvement of soils
-  : Planting of fodder
-  : Confirmation of land ownership
-  : Vetiver planting

Diagram on the durable use of the land (example of Andrefanivorona)

Points to Execute the Final Evaluation of Pilot Study

Evaluation item	Contents of evaluation	Evaluation index	Investigation method
Degree of achievement of a project and its effect	Degree of achievement of a project	Performance of each project	According to the analysis of results of the PS project, Field Observation
	Lecture classes held	How many times? How much popularity?	According to the analysis of results of the PS project, Field Observation
Efficiency	Difference between the project schedule and real performance	Delay in the execution and its reason	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
Impact	Positive and negative influences on society (free answer)	Influence on income	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
		Influence on life environment	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
		Unexpected effects	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
		Difference between participating residents and residents who did not participate	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
		Change in residents' consciousness	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
	Positive and negative influences on nature (free answer)	Change which residents felt	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, Interview, and Field Observation
Fairness in the process of executing the plan	Participation of the social unempowered	Participate or not	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
	Fair sharing of the cost	Joint work and procurement of materials and equipment	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
	Residents who don't participate	Analysis of social factors	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
Validity of project	Target and needs	Degree of agreement	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
	Degree of satisfaction with the project	Contents of project	Final evaluation meeting of PS with residents' participation
		Approach to residents' participation	Final evaluation meeting of PS with residents' participation
		Technological transfer	Final evaluation meeting of PS with residents' participation
		Advice support	Final evaluation meeting of PS with residents' participation
		Organization reinforcement	Final evaluation meeting of PS with residents' participation
Endurance and independence	Function to run the organization	Analysis of leader	Tripartite discussion, Interview, Materials
		Analysis of participants	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
		Problems in organization management	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, and Interview
	Residents' participation	Participants' characteristics	Tripartite discussion, Interview, Materials
		Number of participants	Tripartite discussion, Interview, Materials
	Cooperation among residents	Desire to participate	Tripartite discussion, Interview, Materials
		Status	Final evaluation meeting of PS with residents' participation, Tripartite discussion, Materials, Interview, and Field Observation

Guidelines on the community/villagers participation

1 Basic principles of villagers participation

The following points shall be observed as the basic rule in formulating, implementing, and evaluating the villagers participatory watershed management plan.

1. The villagers' needs and the objectives of the watershed management plan shall be coordinated.
2. The villagers' living shall be respected, a flexible plan shall be formulated by incorporating the watershed management plan into their living, and the plan shall be handled flexibly when implemented.
3. The villagers' initiatives shall be respected and promoted.

- 1 The villagers' needs and the objectives of the watershed management plan rarely match at an early stage. In the study of the needs, generally the villagers' first requests are passive ones related to the facilities such as repair the roads or need of a bridge. Therefore, it is necessary to listen to and sufficiently understand their needs by not ignoring them from the first time only because they do not matching to the study purpose. Then, it is necessary to have the villagers understand well that the lake and the watershed are related to the place where they live, the watershed management also consists of coordination of the environment of watershed and the villagers' living, and the villagers' living will be improved through the management plan. If these facts are not understood sufficiently, the villagers will lose the motivation for participating in the PRA study and there will not be any attitude to formulate the plan by themselves.
- 2 In formulating a project for the watershed management plan, an overall work schedule shall be formulated by creating an agricultural calendar related to the everyday agricultural work of the villagers, incorporating the villagers' events such as the circumcision ceremony or the secondary funeral, then adding the project components selected by the villagers to that calendar. In implementing the project, flexible handling is required such as alteration of schedule in accordance with the change of the natural or social conditions.
- 3 The NGO as the facilitator at site shall not propose its own opinion to the villagers, but

thoroughly devote itself in advising to and creating such atmosphere that the villagers are able to speak out their own opinions. Since an exclusive "village society" mentality exists in the village, the NGO is a "stranger" to the village people. Therefore an attitude to consider such mentality of hamlet villagers and respect the villagers' initiative is desired.

4 Points to note

- The villagers' needs shall be sufficiently understood.
- The project implementation schedule shall be flexibly and timely changed in accordance with the villagers' living.
- The fact that the villagers shall not open their minds easily due to the exclusive "village society" mentality must be sufficiently taken into consideration.
- Active participation of women shall be promoted; the aim shall be that 50% of participants in all processes of planning, execution and evaluation shall be women.

2 Roles of the hamlet villagers, the NGO, and the Ministry of Water and Forests

The hamlet villagers, the NGO, and the Ministry of Water and Forests (including the JICA specialists) shall bear the following responsibilities and play the following roles.

- 1 The hamlet villagers shall play the main role in planning and implementing the project.
- 2 The hamlet villagers shall organize and operate the watershed management committee, which is the main project implementation body.
- 3 The NGO shall facilitate the project with villagers participation on site as well as support and advise the villagers so that the villagers can plan and implement the project by themselves.
- 4 The NGO shall also play the role of coordinating the participatory project.
- 5 The Ministry of Water and Forests (including the JICA specialists) shall comprehensively guide and supervise the project of the watershed management plan with villagers participation, provide financial supports and indirect supports to the project as necessary including the technical means.

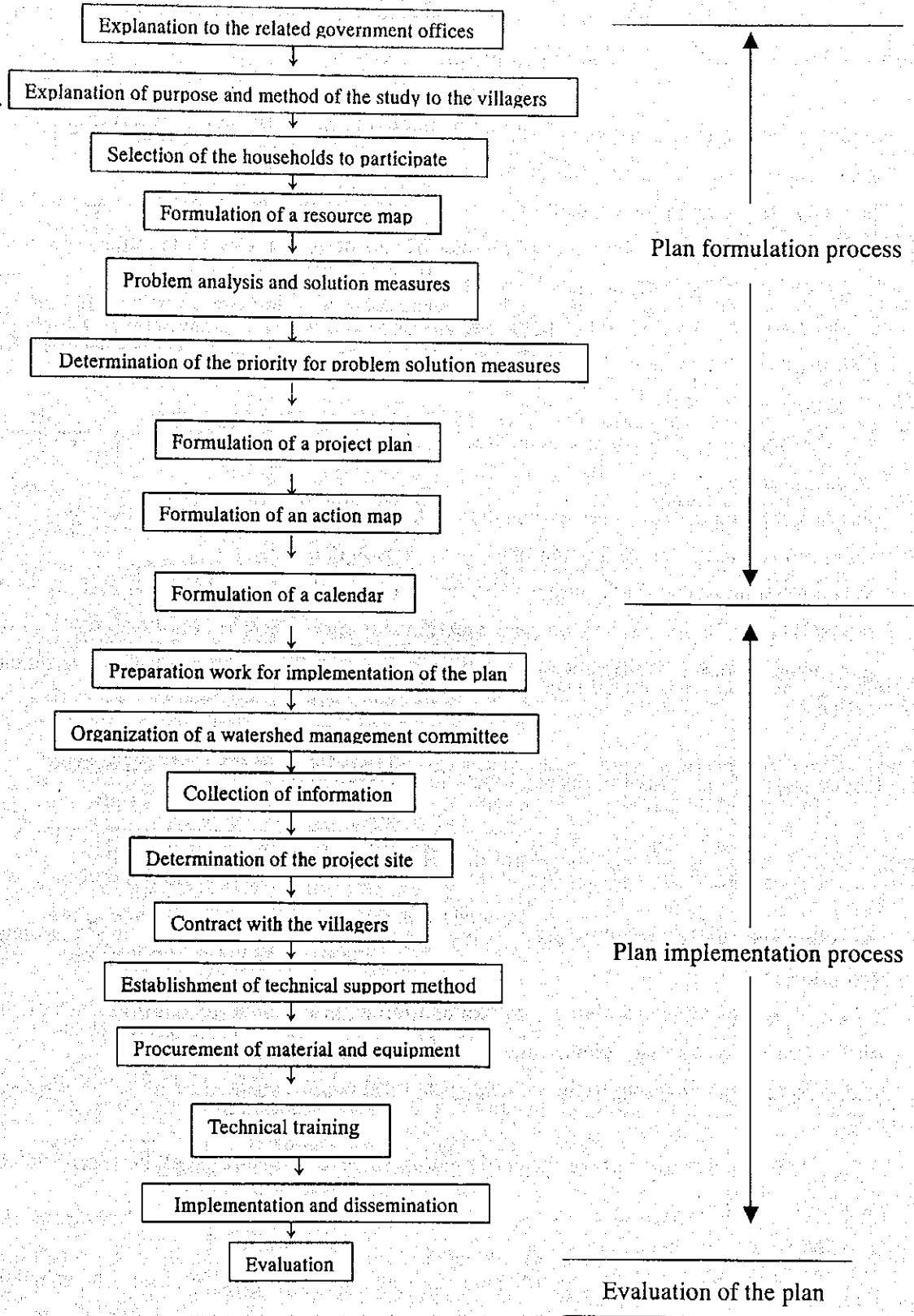
- 1 The hamlet villagers shall play the major role in understanding the present state of village as the preparatory step to formulate the project, analyzing the problems, and discussing the solution that can be implemented. In the course of preparatory work, the villagers shall propose and analyze the problems with their own thinking and propose the solution that can be implemented within their own capacity. If the problems cannot be sufficiently solved by the villagers themselves, the kind of external support required shall be discussed. In that case, what can be borne by the villagers (for example, labor) shall

be discussed also. In implementing the project, the villagers themselves shall have the initiative. It is indispensable that the villagers themselves shall act positively, and the support to promote such initiative is necessary.

- 2 The watershed management committee shall be organized for implementing the project at the stage when the project plan is formulated. It is ideal that the watershed management committee formulates the plan. However, in reality, it is impossible for the villagers who do not sufficiently understand the villagers participatory technique to formulate the plan. For that reason, a committee shall be organized at the last stage of formulating the plan or at the beginning of implementing the project. That committee shall determine, coordinate, and guide the project implementation. The guidelines on the organization and the determination of the leader and the members of the committee are indicated in Chapter 5, the guidelines on the implementation of participatory watershed management plan.
- 3 The NGO must not force the villagers to speak out opinions or impose its own opinion in the meeting to be held in the workshop to formulate the project plan. The NGO must play the role of elevating the motivation of the participants and activating the fair exchange of opinions among the villagers by always thinking that "the hamlet villagers best know the issues of their hamlet."
- 4 When implementing the project, the NGO shall prepare and procure the materials and equipment such as seeds, nursery trees, and tools in cooperation with the watershed management committee and the participating villagers. During the course of implementation, the NGO shall provide technical support and advice as well as arrange the specialists as necessary.
- 5 The Ministry of Water and Forests shall comprehensively supervise the villagers participatory project through guiding and supervising the NGO. It shall also receive the consultation from the NGO as well as take measures to assist the villagers as necessary such as to provide direct guidance to the villagers.
- 6 Points to note
 - Importance shall be attached to the customs of the hamlet villagers and the project shall be proceeded according to the pace of the villagers
 - The NGO shall place importance on the villagers needs as well as find the contact points with the watershed management without being twisted around by the villagers' needs and ask the villagers if the needs can be solved by themselves.
 - The NGO and the Ministry of Water and Forests shall cooperate in handling the excessive requests and solving the misunderstanding of the villagers.

3 Flow of the formulation and implementation of the participatory watershed management plan

The participatory watershed management plan shall be formulated and implemented in the following order.



4 Guideline on the formulation of a participatory watershed management plan

4-1 Explanation to the relevant government offices

Honorary visits and explanations to the prefectural office, the rural commune office, and the fokontany shall be conducted according to the following procedure.

- 1 Honorary visits and explanations shall be conducted in the order of the prefectural office, the rural commune office, and the fokontany in the top-down manner.
- 2 The study purpose and the schedule shall be explained to the prefectural governor and the staffs in charge of the relevant departments of the prefectural and the rural commune offices, and their cooperation shall be requested.
- 3 For the first visit to the president of the fokontany, the rural commune chief or its substitute shall accompany.

Points to note:

- For the honorary visits and explanations, the counterpart and the NGO representative shall accompany.
- At the prefectural office, the explanation shall be provided using the opportunity of a regular meeting of the rural commune chiefs to be held there.
- When explaining the study purpose and the schedule, the study plan shall be proposed, the NGO shall be introduced, and the question and answer session on the study shall be conducted to obtain sufficient understanding of the staffs of the relevant government offices.

4-2 Explanation of the study purpose and method to the villagers

Explanation of the project to the villagers of the villages shall be conducted as follows.

- 1 The villagers shall be summoned by the president of the fokontany or the village committee.
- 2 Before meeting with the villagers, an explanation shall be made to the president of the fokontany to have him sufficiently understand the objectives.
- 3 At the explanatory meeting to the villagers, the rural commune chief or its substitute shall be present.
- 4 To help the villagers understand the participatory method, measures shall be taken such as use of illustrations.

Points to note:

- The explanatory meeting to the villagers shall be made according to a flexible schedule and the date shall be established without imposing unreasonable pressure to the

villagers' lifestyle.

- The information shall be transmitted to all villagers such as by posting the date and time of meeting at general stores and so on.
- Because it is rare that everything is understood and a reliable relationship is formulated at one explanatory meeting, actions shall be taken so that trust shall be established through daily works.
- Close and urgent needs of the villagers shall be listened all the time.
- Elderly people such as the dean shall be respected all the time.

4-3 Determination of the households to participate

The number of the households to participate shall be determined in accordance with the following standards.

- 1 The participating households shall be selected from all hamlets because a village consists of several hamlets.
- 2 Selection shall be made without bias among socioeconomic statuses of rich, poor, and middle-class levels.
- 3 Spontaneous participation shall be respected and the dean, the hamlet leader, and school teachers shall be expected to participate.
- 4 Active participation of women shall be encouraged.
- 5 The number of households to participate shall be at least fifty households per fokontany.

Points to note:

- In selecting the participants, cooperation of the village chief, the dean, the hamlet leader, and school teachers who know the situation of the village well shall be required.
- In order to select the participants without bias between the socioeconomic statuses, the following indices shall be used as the standard. (For the detail, refer to the report on the implementation of villagers participatory study.)
 - Area of the paddy field owned
 - Area of the farm owned
 - Area of the eucalyptus afforestation owned
 - Number of the cattle owned
- The NGO shall explain the criteria of selection of the participating households and the participants shall be selected by the villagers themselves.

4-4 Formulation of a resource map

Formulation of a resource map has the purpose of using it as the material for analyzing the problems because the source map can visually indicate the present situation of land use and

the use of natural resources in the village through the joint cooperation of the villagers, making the information of each participant into the common knowledge of all participants.

- 1 The resource map shall be formulated according to the following procedure.
 - ① The NGO shall prepare the basic map indicating the large marks such as roads, rivers, lakes, and mountains referring to the existing maps and the aerial photographs.
 - ② The villagers shall mark the present location on the basic map.
 - ③ The villagers shall paste the landmarks such as bridges, schools, churches, tombs, hamlets, and markets from the illustrated cards with the help of the guide marks and the present location.
 - ④ The illustrated cards of natural resources such as water sources, paddy fields, farms, natural forests, artificial forests, and fishing grounds shall be marked.
- 2 The above mentioned illustrated cards shall be marked not only by the specific villagers but jointly with various villagers by changing the members to do the work.
- 3 The resource map shall be formulated at the public places such as schools or churches.

Points to note:

- Since the formulation of a picture map may be the first experience for many villagers, they may wonder how to proceed. Therefore, a basic advice shall be necessary.
- If the atmosphere of the entire participants seems negative, the village chief or the hamlet leader shall be encouraged to work or speak.
- Participation and speech by women shall be encouraged.

4-5 Problem analysis and solutions

The analysis and the solution of problems are the works to consider the image of future land use by clarifying the difference between the past and the present state of natural resources.

- 1 The work shall proceed in the following order: proposal of the problem -> analysis of the problem -> solution and measures to be taken.
- 2 In proposing problems, the problems on the natural resources shall be enumerated on the resource map.
- 3 In problem analysis, discussions shall be made on the possible cause of the problem.
- 4 For the major problems, the relationship between the cause and the problem shall be analyzed and a genealogy of problems shall be formulated.
- 5 As for the solutions and the measures to be taken, the experiences of the villagers who have solved the problem shall be shared to exchange opinions on how to solve the future problems that the villagers encounter for the first time.
- 6 The solutions and the measures to be taken shall be those that can be implemented by the villagers' ability as a rule.

Points to note:

- If the speeches are made by specific participants only, opportunities to speak shall be given to the participants who do not speak much.
- The opinions issued by the villagers shall be respected.
- If a problem or a solution beyond the capacity of the villagers is proposed, discussions shall be made on the desirable solution on the type of the external support to the villagers' action.
- Because the villagers are apt to lose a long-term vision by thinking only of the present benefits, they shall be guided to have a wider vision.

4-6 Determination of the priority of solutions

For the solutions that can be implemented from the discussion of problem analysis, the priority shall be given by considering the following points.

- 1 The standpoint of the watershed management shall be sufficiently taken into consideration.
- 2 The villagers shall understand that there is a time limitation.
- 3 The NGO shall proceed with the matter so that the villagers themselves can find the contact between the watershed management and the villagers' needs.
- 4 Discussions on the priority shall be made by the villagers first, then the final priority shall be determined by a majority vote.

Points to note:

- If a high priority is given to a solution far from the objectives of the watershed management or the one beyond the ability of the villagers, the NGO shall correct the policy.
- The villagers shall always be made conscious of that the ones that implement the project are the villagers themselves.

4-7 Formulation of a project plan

- 1 A project plan shall be formulated by using a hamlet as a basic unit.
- 2 A project plan shall be the one that can be implemented by the villagers themselves.
- 3 Applicable techniques and work methods that shall be examined.
- 4 The priority of project implementation shall be indicated by classifying into high, low, and medium according to the degree of villagers' request.
- 5 The project plan shall indicate the amount of major works, implementation period, implementation organization, target hamlet, and the applicable technique.

Points to note:

- Because the villagers do not have the image of how to actually implement the project plan in their daily life, it must be taken into account that the plan can easily become excessive.
- Because the villagers have no experience of implementing a specific project according to a plan, they tend to make an excessive plan. Therefore the sufficient amount of time shall be allowed for the project plan.
- If there are too many contents of the project, they may overlap with the villagers' daily life or the agricultural work schedule, the implementation process of plan may become too tight, leading to reduce their motivation, or there may be a plan that cannot be implemented or become skimpy. Therefore it is necessary to reduce the number of project plans into minimum necessary by sorting out the project plans such as by indicating the priority.

4-8 Formulation of an action map

Formulation of an action map has the purpose of forming a common recognition among the villagers by visually indicating on the map the project plan formulated in the above section.

- 1 An action map shall be formulated according to the following procedure.
 - ① The NGO shall prepare the basic map indicating the guide marks such as roads, rivers, lakes, mountains, and rice paddies referring to the resource map.
 - ② The villagers shall paste the illustrated cards indicating the actions of the project plan.
- 2 The above mentioned illustrated cards shall be marked not only by the specific villagers but jointly with various villagers by taking turns for the work.
- 3 A new map shall be formulated separate from the resource map.
- 4 The map shall be formulated at the public places such as elementary schools or churches.
- 5 Because it is a project per hamlet, the villagers of each hamlet shall work by taking turns.

Points to note:

- The pasting work shall be conducted by rechecking the actions in the project plan with the illustrated cards.
- Although pasting the illustrated cards of actions on a resource map is a way of visualizing the actions, it is better to formulate a separate action map because the meaning of illustration may be easily misunderstood or confused.
- Since the villagers already have the experience of formulating a resource map, they shall be able to work rather easily.
- The NGO shall facilitate the villagers in the same manner for formulating the resource map.

4-9 Formulation of a calendar

- 1 A calendar shall be formulated by giving priorities to agricultural work schedule and the everyday events such as the circumcision ceremony or the secondary funeral.
- 2 The schedule of the project plan shall be incorporated in the calendar.
- 3 A calendar shall be made as the common ground for the villagers' life.

Points to note:

- Since agricultural works are done at some places throughout the year, there is only a small number of periods in which the project plan can be incorporated.
- Because each hamlet and each household has a different schedule for the agricultural work, a calendar reflecting the most common schedule shall be formulated as a standard.
- Plenty of time shall be allowed in formulating the calendar.

5 Guidances on the implementation of the participatory watershed management plan

5-1 Preparation work for implementation

In the preparation work for implementation, the detailed implementation plan shall be formulated as follows regarding the honorary visits and explanation to relevant government offices and the meetings to start the NGO team action, as well as how to proceed with the project, the project schedule, and the project operating system in the same manner as formulating the plan.

- 1 The NGO shall propose how to proceed with the project and obtain sufficient understanding and agreement of the villagers.
- 2 As for the schedule of each project, the schedule of coming three months shall be made at one month prior to the project. Setting up of the schedule shall be repeated for each three months.
- 3 The project operating system shall be established in liaison with the watershed management committee consisting of the resident representatives and the NGO.
- 4 If the blank period after formulation of the plan until its implementation is long (for more than two months), the review meeting for the plan shall be held again.

Points to note:

- The actual schedule shall be determined by giving the highest priority to the villagers' life schedule.
- A detailed schedule for each week shall be determined by the NGO through adjusting the schedule with the villagers at the site work.
- An organized system that can transmit the information such as the starting date of the project to the majority of villagers must be established.
- If there is more than two months' blank period since the formulation of the plan until its implementation, it is effective to reconfirm the contents and the method of project plan as well as to hold the PRA review meeting to raise the motivation of villagers towards the project implementation.
- A back-up system of the NGO shall be established by the Ministry of Water and Forests.

5-2 Organizing a watershed management committee

The watershed management committee shall be organized in accordance with the following points.

- 1 One watershed management committee shall be organized in each fokontany.
- 2 The representative of each hamlet and at least one villager shall participate as the member of the said committee.
- 3 The said committee shall select a chairman from the representative and the villagers of each hamlet.
- 4 The said committee shall have a vice chairman, a secretary, an accountant, and a staff in charge of equipment management.
- 5 The organization of the said committee shall be as simple as possible.

Points to note:

- Since the watershed management committee is the highest decision-making organization, participation in the said committee cannot be forced to the hamlets, but it is desirable that the committee members are selected from all hamlets.
- The committee plays an important role in connecting the villagers with external organizations such as the NGO, the Ministry of Water and Forests, or the related government offices.
- The committee chairman shall be selected under the consensus of the villagers. The selection method of the chairman shall be determined by the proposal of the villagers such as the general or mutual election.
- From the standpoint of the efficiency of implementation, it is desirable that the committee is organized per hamlet rather than per project to be implemented.
- The committee shall be in liaison with the administrative offices.
- In organizing the committee, the social customs of the hamlet shall be respected.
- It shall be pursued as much as possible that women's participation in the Committee as members shall account for 50%.

5-3 Collection of information

In implementing each project, the following information to constitute the ground shall be collected.

- 1 Traditional techniques that the villagers are using at present
- 2 The problems of the traditional techniques and the measures to be taken
- 3 Needs for new techniques

Points to note:

- The information collection method shall consist of the hearing from the key informants or the villagers as well as the group interview at the workshop.
- If there is any existing technique, it shall be observed on site without fail.
- The collected information shall become the material to establish the technical support method, examine the techniques to be used for each project and the introduction method.

5-4 Determination of project site

The project site shall be determined based on the following four points.

- 1 The site shall be selected from geographically and naturally proper places.
- 2 The ownership of and the rights related to the candidate project site shall be clarified.
- 3 The site shall be suitable for technical dissemination, the place easy for the villagers to gather.
- 4 The site shall be visited with the villagers without fail.

Points to note:

- The candidate project sites shall be proposed by the villagers.
- Ambiguity of ownership of the site such as uncertainty whether it is owned by the state or individual may cause a dispute later.

5-5 Contract with the villagers

When implementing a villagers participatory project, the contract containing the following procedure and contents shall be agreed by the villagers.

- 1 The draft of the contract shall be formulated mainly by the NGO following the advice and guidance of the Ministry of Water and Forests.
- 2 The contract shall be translated into the Malagasy and made into a formal document after being presented to the villagers to obtain their agreement.
- 3 Three people shall sign the contract including the president of fokontany as the representative of the villagers, the director of Antananarivo Local Forestry Office of the Ministry of Water and Forests, and the NGO representative.
- 4 The contents of the contract shall be formulated at any time under the agreement of the above mentioned three parties.

Points to note:

- The format of the contract is indicated in the villagers participatory study implementation report, and the participating villagers must understand at least the following three points.
 - ① The techniques the participating villagers have acquired shall be actively disseminated.
 - ② The supplied materials and equipment shall be jointly owned and managed.
 - ③ The seeds picked from the planted trees as a result of the project shall be distributed free of charge to those that want them.
- The contents of the contract shall be sufficiently understood and agreed by the above mentioned three parties.

5-6 Establishment of technical support method

The technical support method shall be determined for each project according to the following points as a rule.

- 1 It shall be clarified whether the traditional technique existing and extended in the area is to be improved or a new technique shall be introduced.
- 2 It shall be determined whether the support method can be sufficiently provided by the engineers within the NGO or the technical support of the special engineers from outside is required.
- 3 The techniques to be used shall be sufficiently explained to the watershed management committee and the villagers and proceeded through consultation with them.
- 4 A system to provide long-term technical support and guidance shall be prepared.
- 5 Technical support shall be provided through visits to the advanced sites.

Points to note:

- For the projects that cannot receive technical guidance from the staffs inside the NGO, requests shall be made for the technical support to the proper organizations including the national laboratories, administrative organizations, or private consultants under the responsibility of the NGO.
- The NGO shall sufficiently explain the situation of village to the special engineers from outside and visit the project site.
- Because the special engineer from outside shall give the technical guidance in a limited amount of time, the NGO shall provide follow-up guidance afterwards. The continuous technical guidance on agriculture can receive the supports from the staffs in charge of agricultural extension program (PNVA) of the Ministry of Agriculture.
- Visiting of previous project sites and exchanging of information and opinions among

the villagers are effective for raising the motivation to participate and for creating an image of the project.

5-7 Procurement of equipment

- 1 The materials and equipment necessary for the project shall be prepared by the NGO as a rule.
- 2 The NGO shall consult with the watershed management committee on the necessary materials and equipment and the quantity needed, and shall make an estimate.
- 3 The NGO and the Ministry of Water and Forests shall examine the purchase of materials and equipment individually based on the estimate.
- 4 The seeds and nursery trees shall be distributed openly to the villagers at the public facilities such as at schools or churches.

Points to note:

- Purchasing of seeds and/or nursery trees shall be prepared leaving a sufficient amount of time according to the plan by making appointment in advance because the picking time or growing period of nursery trees vary.
- The quantity of nursery trees shall be determined carefully after sufficient discussions with the watershed management committee and the villagers so that no problem occurs afterwards.
- The fact that the planting of nursery trees (especially fruit trees) needs should be made at appropriate locations shall be sufficiently understood by the villagers.
- The equipment such as the watering can or the shovel shall be jointly managed.
- Distribution of seeds and/or nursery trees at public places shall enhance the fairness.

5-8 Technical training

Technical trainings shall be provided as follows in order to teach techniques to the participating villagers so that they can use the techniques themselves.

- 1 Technical trainings shall be provided for each project in two parts, the seminar and the demonstration sessions.
- 2 At the seminar, technologies shall be orally instructed to the villagers by preparing the material easy to understand for the villagers through visual means such as the explanatory drawing in which the illustrations and the points of explanation are written on large paper.
- 3 In the demonstration session, the technologies the villagers have acquired through the seminar are actually put into practice.

The demonstration session shall always follow the completion of the seminar.

Points to note:

- The explanatory drawings to be used at the seminar shall be accompanied by comments in Malagasy and kept by the watershed management committee after the completion of the seminar so that they can be verified at any time when necessary. They shall also be used for the villagers who did not participate in the seminar for the purpose of dissemination.
- At the seminar, questions shall be answered so that the villagers can fully understand the techniques, then the demonstration session shall follow.
- Questions and/or doubts shall be answered as necessary, even during the demonstration session.
- The materials and equipment necessary for the demonstration which can be procured by the villagers shall be prepared by the villagers as much as possible. The materials and equipment to be prepared in advance shall be informed to the villagers.

5-9 Implementation and dissemination

- 1 The NGO shall visit the project site after the technical training to understand the implementation state of the transferred technologies and the problems. At that time, the NGO shall provide technical guidance again if necessary.
- 2 The explanatory drawings used at the seminars shall be used for the dissemination of technologies.
- 3 When the villagers who have acquired and used the technologies talk about their experiences, the said technologies shall be transmitted, leading to the dissemination of technologies.
- 4 In order to increase the effects of implementation and dissemination, the advanced project sites shall be visited.

Points to note:

- If the technologies that the villagers have acquired at the technical training are not satisfactory to the villagers, if the classes are not sufficiently understood by the villagers, or if the villagers forget what they have learned, then the technologies will not be practiced. Thus visiting the project site will constitute an important follow-up work.
- Problems always need to be handled promptly.
- The existence of the villagers who have successfully applied the acquired technologies has stronger persuading power than the explanation and will have an enormous influence on the technology dissemination.
- It is possible to encourage the villagers to exchange information and opinions and increase the efficiency of implementation and dissemination by visiting the advanced project sites.

6 Guideline for evaluating the watershed management plan with villagers participation

6-1 Evaluation method

The evaluation shall be conducted as follows in order to understand the achievement of the watershed management plan and make necessary improvements for the independent continuation of the watershed management plan by the villagers.

- 1 An interim evaluation shall be made one year after the implementation of the plan and a final evaluation shall be made two years later.
- 2 In the interim evaluation, the progress state of the implementation of watershed management plan shall be observed, the schedule shall be changed if necessary, and the problems shall be analyzed and the solutions shall be proposed.
- 3 In the final evaluation, the achievement of the watershed management plan shall be observed and necessary improvement shall be made for the independent continuation. A total evaluation shall be made according to the method shown in 6-3.
- 4 In the two evaluations, the villagers participatory evaluation meetings shall be conducted according to 6-2 by the community villagers under the guidance of the watershed management committee.
- 5 The evaluations shall be supplemented by visiting the project sites and/or interviewing the villagers as necessary.

Points to note:

- Because the watershed management plan is formulated by the villagers participatory method, it should reflect the intention of the villagers sufficiently, and the evaluation not accompanied by implementation is meaningless and not achievable for the villagers. Therefore the evaluation meeting with the participation of the villagers shall be conducted at the stage of execution of the plan not at the stage of preparation for the plan.
- The evaluation items and contents shall refer to the following points.
 - ① Achievement and effects of the project: Achievement of the project, organization of training
 - ② Efficiency: Gaps between the the plan and the achieved implementation, delay and its reason
 - ③ Impact; Positive and negative natural and social effects
 - ④ Fairness of participation: Participation of the weak in the society, fair work sharing, and analysis of non-participating villagers
 - ⑤ Aptness of the project: Agreement on plan objectives and villagers' needs, degree of satisfaction with the project
 - ⑥ Continuation and independence: Operating function of the organization, analysis of participating villagers, cooperation among the villagers

- The evaluation shall be made from the standpoint to enhance the independence of the villagers.

6-2 Evaluation meeting with the villagers' participation

- 1 The watershed management committee shall hold two evaluation meetings with villagers' participation.
- 2 The NGO shall coordinate the preparation and implementation of evaluation meetings with villagers' participation.
- 3 The items to be evaluated for each project and each hamlet and the items to be evaluated for the entire fokontany villagers that participate shall be separated.
- 4 In the interim evaluation meeting, the state of villagers participation shall be checked and the opinions shall be exchanged on the problems arisen from the implementation of the plan and method improvement.
- 5 In the final evaluation meeting, the achievement of the project, satisfaction with the project, delay of implementation and its cause, positive and negative effects, and the cause of non-participation shall be evaluated.

Points to note:

- Regardless of whether the villagers participated or not in the implementation of the plan, the villagers shall be invited to participate in the evaluation meeting.
- The evaluation meeting shall be conducted using visual means such as by posting an action map to indicate whether the plan is implemented or not.
- The evaluation meeting shall be conducted under the guidance of the NGO as well as efforts shall be made to increase the villagers' ability by appointing the facilitator from the villagers.
- The items to be evaluated for each project and for each hamlet include the state of villagers participation, achievement of the project, delay of implementation and its cause.
- The items to be evaluated for the entire fokontany include the problems arisen from the implementation of plan and method of improvement, satisfaction with the project, positive and negative effects, and the cause of non-participation. These items shall be freely discussed among the villagers.
- If the evaluation meeting shall extend from morning until afternoon, consideration shall be made for the villagers such as by providing simple lunch (e.g., bread and coffee).

6-3 Total evaluation

A total evaluation shall be made for the main purpose of determining the possibility of independent continuation of the project by considering the following points and by discussing by the NGO and the Ministry of Water and Forests.

- 1 The total evaluation shall be made at the time of final evaluation.
- 2 In the total evaluation, both processes of formulation and implementation of plan shall be evaluated.
- 3 In the evaluation of the formulation of the plan, the aptness of the plan and the villagers participation shall be comprehensively evaluated.
- 4 In the evaluation of the implementation of the plan, the achievement, efficiency, fairness, satisfaction, villagers participation, and the organization function of the committee shall be totally evaluated.
- 5 The possibility of independent continuation shall be determined at the final point.

Points to note:

- The items and the contents of evaluation shall refer to the points to note mentioned in 6-1.
- A qualitative evaluation shall be enough because the villagers are not familiar with the quantitative evaluation.
- As the evaluation items, standardized evaluation indices used for the PS evaluation in Chapter V in the text shall be used.

6-4 Evaluation criteria of independence

The evaluation criterias of independence shall be the following three points. The villages satisfying all these three points shall be determined as the ones that can promote the project independently without external support.

1 Organizing of the watershed management committee:

As the criteria of a leader, the watershed management committee chairman should fulfill the following three points: ① cooperation, ② fairness, and ③ positiveness.

As the criteria for operativeness, there should be no problem such as dispute within the committee or between the committee and the villagers.

2 Villagers participation rate:

There shall be more than one project in which more than 60% of the entire households in the village participate.

3 Villagers' satisfaction:

There shall be more than 50% of projects to which more than 60% of participants express satisfaction at the evaluation meeting.

Items to be executed by executing organizations

	Head office	Local office
Watershed Management Promotion Council	Formulation of broad policies for the plan Total plan General control of execution of the total plan General control of management of execution	
Watershed Management Promotion Office	Coordination among ministries concerned Coordination among ministries concerned with field guidance Preparation of the draft total plan Preparation of the draft total plan on behalf of the Promotion Council Guidance and supervision of NGOs Guidance for preparation, selection, contracting and execution of NGOs' TOR Management of progress of the total plan Management of execution of fields affairs Management of expenditure Conduct of the budget for execution	Coordination among relevant officials in charge Coordination of field affairs among the personnel of outpost agencies Execution of the forest management plan Execution of forest management work by the personnel of the Ministry of Water and Forests Management of execution of preparatory management plans Execution of field affairs through NGOs Field guidance for NGOs Guidance for execution on the site
NGO (nongovernmental organization)	General control of field affairs under preparatory management plans General control of NGO members Conduct of field affairs Conduct of field affairs with local members	Conduct of field affairs under preparatory management plans Conduct of field affairs according to instructions of the local office Guidance for preparation and execution of plans severally made for each village Organizational fosterage of the Watershed Management Committee in each village and technical guidance
Watershed Management Committee in each village		Preparation and execution of plans severally made for each village

Minutes of the Meeting (Explanation and Discussion of the Draft final report)

MINUTES OF THE MEETINGS
ON
DRAFT FINAL REPORT
OF
WATERSHED MANAGEMENT IN MANTASOA AND TSIAZOMPANIRY
IN
MADAGASCAR

In pursuant to the objectives of the Scope of Work for the Feasibility Study on Watershed Management in Mantasoa and Tsiacompaniry in Madagascar, (hereinafter referred to as "the Study") signed on 3 October, 1997, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Study Team headed by Mr. HANDA Tsutomu from 15 September to 29 September, 2000. JICA also dispatched the Leader of Advisory Team, Dr. AMANO Masahiro and the JICA Representative, Mr. KATSUTA Yukihide from 16 to 29 September, 2000.

The Study Team had submitted twenty (20) copies in French and ten (10) copies in English of Draft Final Report to the Madagascar side, and organized the meeting of the Joint Committee on 19 September, 2000 and the follow-up meetings with the Madagascar authorities and counterparts headed by Ms. ANDRIANTSILAVO Hantamalala Fleurette, Director General of the Ministry of Water and Forests.

The list of participants for the Joint Committee Meeting is shown in Appendix 1.

The results of the meeting are as follows;

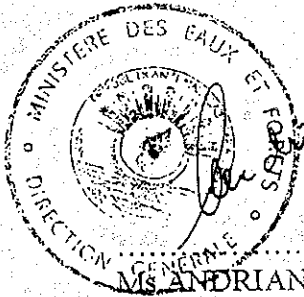
1. Japanese side expressed deepest gratitude to the Madagascar side for its utmost support to the Study Team in order to carry out the Study successfully and effectively throughout the period of execution of the Study. Madagascar side also expressed special thanks to the Japanese side for its intensive works to carry out the Study and useful technical inputs provided to the Madagascar counterparts.

2. The Study Team explained the overall results of the field works including the results of the pilot studies, the outline of the proposed watershed management plan, and the monitoring methodologies at the Joint Committee Meeting. Details on the point of

discussion during the meetings are shown in Appendix 2.

3. The issue on future collaboration between Madagascar side and Japanese side regarding the follow-up program and also the proposed watershed management plan was also discussed. Both sides recognized the importance of implementing the watershed management based on the proposed plan. It was agreed by the both sides to make efforts to seek any measure to realize the follow-up program as well as the proposed watershed management plan in the target area of Mantasoa and Tsiacompaniry in Madagascar in order to achieve the objective of the Study.

Antananarivo, 27th September, 2000



Hantamalala Fleurette
.....
Ms ANDRIANTSILAVO
Hantamalala Fleurette
Director General
Ministry of Water and Forests
Madagascar

.....
Mr. HANDA Tsutomu
Team Leader
JICA Study Team
Japan

Witnessed by

.....
Dr. AMANO Masahiro
Leader
JICA Advisory Team
Japan

Appendix I.

LIST OF PARTICIPANTS

I The Malagasy side :

Name	Position	Institution
1 Ms ANDRIANTSILAVO Fleurette	<i>Directeur Général</i>	Ministère des Eaux et Forêts
2 Mr RAMBELOSON François Richard	<i>Directeur Inter-régional des Eaux et Forêts Antananarivo</i>	Ministère des Eaux et Forêts
3 Ms RAHARIMANIRAKA Lydie	<i>Chef de Service de la Valorisation Economique</i>	Ministère des Eaux et Forêts
4 Mr RAZAFIMAHATRA Mahefason	<i>Chef de Service du Développement Forestier</i>	Ministère des Eaux et Forêts
5 Ms RAZAFINTSALAMA Claudie	<i>Chef de la Circonscription des Eaux et Forêts Antananarivo</i>	Ministère des Eaux et Forêts
6 Mr NDRIAMANAJA Tovahery	<i>Chef de Division Économique</i>	Ministère des Eaux et Forêts
7 Mr RAHARISOA H. Rolland	<i>Chef de Division Reboisement</i>	Ministère des Eaux et Forêts
8 Ms RAHOLISOARIMANGA Voahangy	<i>Chef de Division Etude d'Impacts Economique</i>	Ministère des Eaux et Forêts
9 Ms RAZAFINIMPIASA Alice	<i>Chef de Division Planification</i>	Ministère des Eaux et Forêts
10 Ms RATSIMA RAVAOVOLOLONA	<i>Sous-Préfet</i>	Fivondronana d'Andramasina Renée
11 Mr RANDIMBIMAHENINA A.		Ministère de l'Agriculture
12 Mr HUGUES Azihar Said	<i>Directeur inter-régional Eaux et Forêts Majunga</i>	Ministère des Eaux et Forêts
13 Ms RAOLINJATOVO Geneviève		Ministère de l'Agriculture
14 Ms RABENITANY Yvannie	<i>Division bassins versants</i>	Ministère des Eaux et Forêts
15 Mr RAKOTOMALALA Claude Arthur		Ministère de la Pêche et des Ressources Halieutiques
16 Mr RAFALIARISON Jerimaina		Ministère de l'Environnement
17 Mr RAKOTONDRA SOA Raymond	<i>Directeur Inter-régional Eaux et Forêts Diégo-Suarez</i>	Ministère des Eaux et Forêts
18 Mr SUGITA Eiji	<i>Expert Forestier de la JICA</i>	Ministère des Eaux et Forêts
19 Ms RABELAZANDRAINY Nathalie	<i>Assistante de l'Expert JICA</i>	Ministère des Eaux et Forêts

The Japanese side :

1 Mr SAITO Akira	<i>First Secretary</i>	Embassy of Japan
2 Dr AMANO Masahiro	<i>Leader</i>	JICA Advisory team
3 Mr KATSUTA Yukihide	<i>Director</i>	JICA Head Quarters
4 Mr HANDA Tsutomu	<i>Leader</i>	JICA Study team
5 Mr Miyatake Susumu	<i>Sub-leader</i>	-do-
6 Dr SAWANABORI Yosihide	<i>Team Member</i>	-do-
7 Mr MORI Shinichi	<i>-do-</i>	-do-
8 Mr ARAI Tadao	<i>Interpreter</i>	-do-

Appendix 2. Points of Discussion

The following are the major points discussed in the meeting:

1. The detailed land use plan is not presented in the watershed management plan except for the vegetation map, since appropriate land use in terms of watershed management must be defined by the villagers in each village. However, principles for land use and the process of establishing a land use plan at both watershed and village levels are explained in the study report.
2. The environment impact assessment (EIA) on the proposed project is judged not to be necessary since no major negative impact on environment is identified in the preliminary EIA.
3. It was suggested in the meeting that the fish fry production for paddy field aqua-culture be also aimed at aqua-culture in the lakes. However, taking it into consideration that large-scaled fish fry production will not be manageable by the villagers and that aqua-culture in the lakes is not associated with watershed management, it is not envisaged in the Project at this stage.
4. It was suggested in the meeting that the Ministry of Livestock, the Ministry of Fishery, the Ministry of Plan and the Ministry of Domestic Affairs be also included in the watershed management committee.
5. The participation rates for the proposed watershed management plan are assumed to be between 30 to 50%, based on the results of the pilot studies. The actual participation is quite difficult to anticipate since it is affected by various factors, such as leadership, mentality of villagers or the history of the village, as the pilot studies show. The NGO to participate in the implementation of the Project is expected to play the major role in facilitating the participation of villagers.
6. The Study team requested to the Madagascar side to send further comments or corrections on the draft final report to the JICA Head Quarters by the end of October 2000 through the Embassy of Japan
7. Follow-up of the Pilot Study (Analamihoatra Village)
Both sides recognized that Analamihoatra Village has a high possibility to be self-sustained among the four villages which were conducted the pilot study. It was therefore suggested that a follow-up phase of the pilot study to the

Analamihoatra Village should be considered.

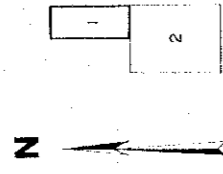
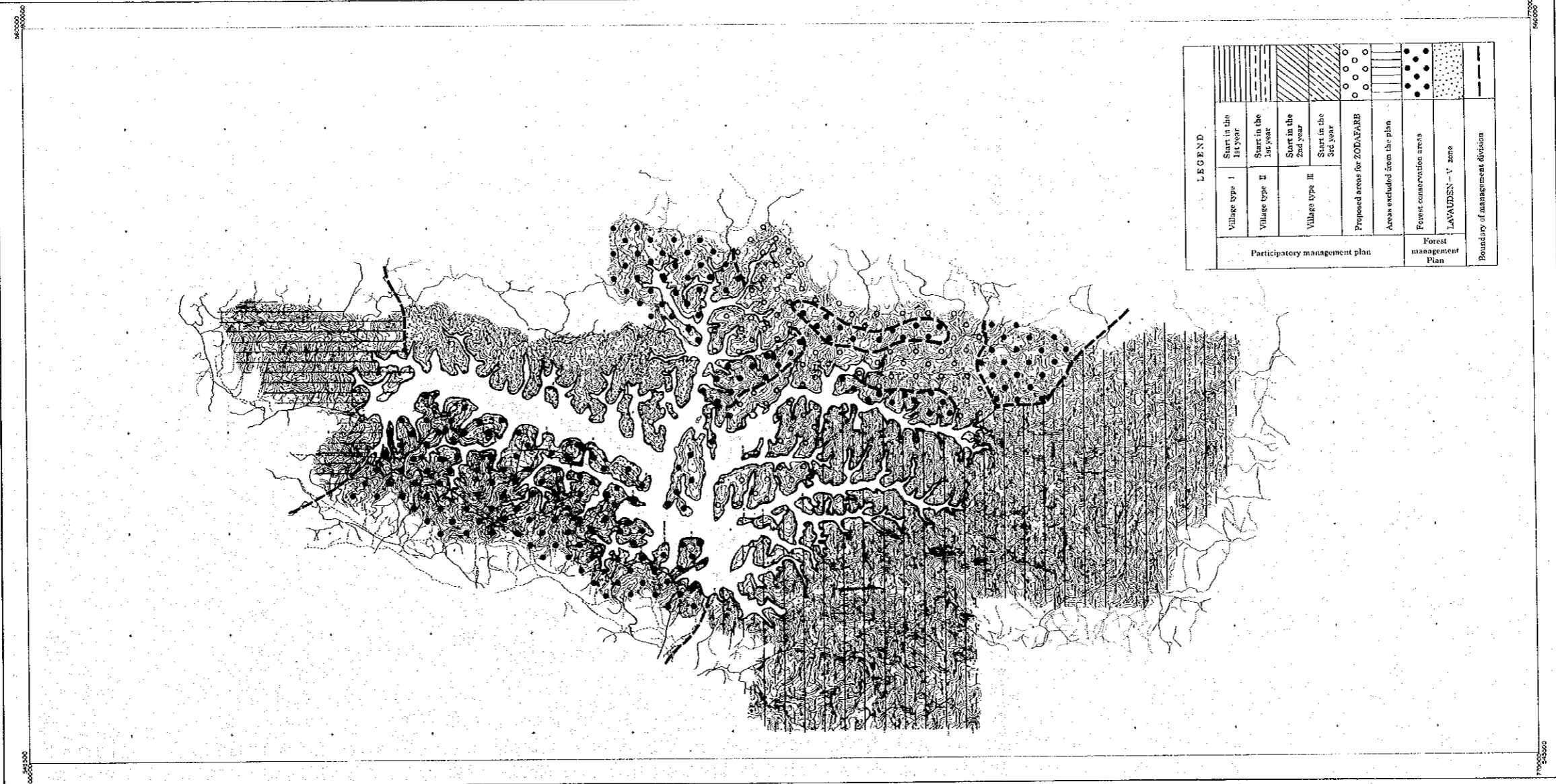
The Madagascar side requested the Japanese side to provide continued support to the Village through JICA to promote the self-reliance. The Japanese side explained they would consider it with authorities concerned after they went back to Japan.

8. Implementation of the Proposed Watershed Management Plan

Both sides agreed the implementation of the proposed watershed management plan was very important issue. The Madagascar side promised to try to provide the necessary local budget for the implementation according to this study. However, external assistance to the Ministry of Water and Forest might be still necessary.

It was found that one of the possible funding sources was "The Japan Women in Development Fund (JWIDF)" of UNDP, which was the Japanese trust fund in UNDP. In order to apply to the Fund, it should be necessary to modify the present draft watershed management plan to the one focusing on the gender issue. Both sides agreed that the Japanese Study Team would modify the plan in the final report, and the Madagascar side would make official proposal of the Fund to UNDP based on the final report. Both sides also agreed another possibilities of measures for the implementation should be considered.

WATERSHED MANAGEMENT PLAN NO 1



LEGEND

ITEMS

SYMBOLS

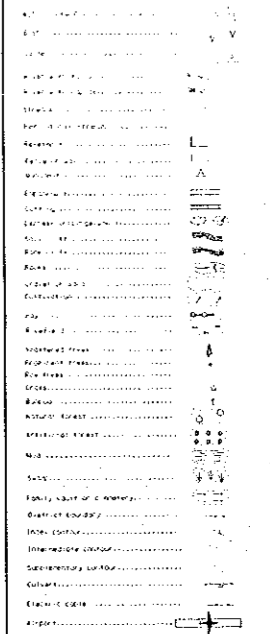
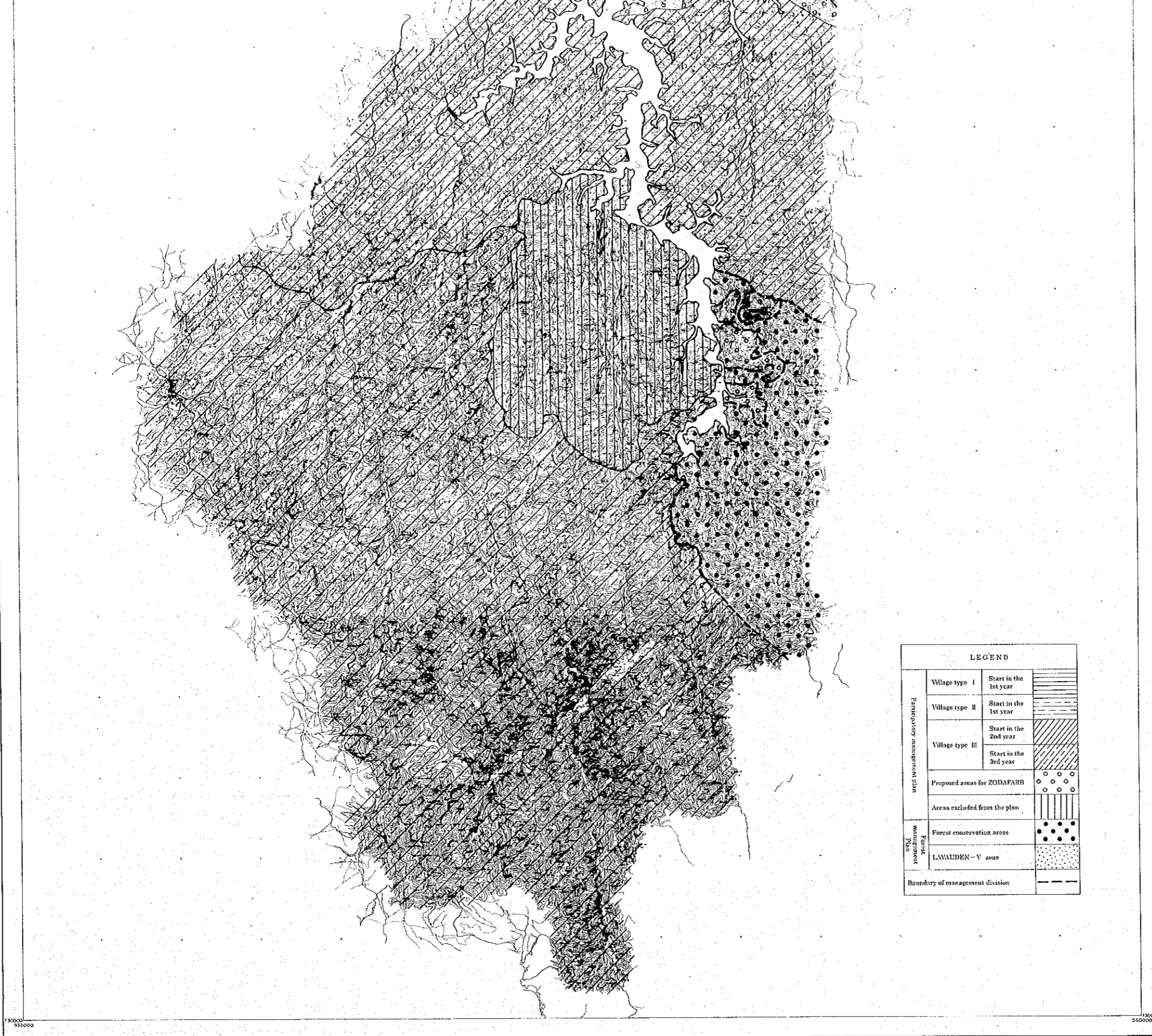
Participatory management plan	[Horizontal lines]
Forest management plan	[Vertical lines]
Boundary of management division	[Dashed line]
Forest conservation areas	[Dotted pattern]
LAVAUDESI - V zone	[Stippled pattern]
Proposed areas for ZODAFARB	[Diagonal lines /]
Areas excluded from the plan	[Diagonal lines \]
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Village type III	[Diagonal lines /]
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LEGEND

Village type I	[Horizontal lines]
Village type II	[Vertical lines]
Village type III	[Diagonal lines /]
Proposed areas for ZODAFARB	[Diagonal lines /]
Areas excluded from the plan	[Diagonal lines \]
Forest conservation areas	[Dotted pattern]
LAVAUDESI - V zone	[Stippled pattern]
Boundary of management division	[Dashed line]

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THE FEASIBILITY STUDY ON WATERSHED MANAGEMENT
IN MANTASOA AND TSAZOMPANIRY IN MADAGASCAR



LEGEND			
Participatory management plan	Village type I	Start in the 1st year	[Horizontal lines]
	Village type II	Start in the 1st year	[Vertical lines]
	Village type III	Start in the 2nd year	[Diagonal lines /]
		Start in the 3rd year	[Diagonal lines \]
	Proposed areas for ZODAFARB		[Circles]
Areas excluded from the plan		[Vertical lines]	
Forest management plan	Forest conservation areas		[Dotted pattern]
	LAVAUDEN-V zone		[Stippled pattern]
Boundary of management division			[Dashed line]

THE FEASIBILITY STUDY ON WATERSHED MANAGEMENT
IN MANTASOA AND TSIAZOMPANIRY IN MADAGASCAR

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