

10-Chapter of the guideline on how to support the revitalizing of rural communities



Let us collaborate for a better tomorrow.



Utilization of this guideline



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Japan International Research Center for Agricultural Sciences
(JIRCAS)

Ministry of Agriculture and Fisheries (MAF),
Democratic Republic of Timor-Leste

PREFACE

(Importance of support for rural community reconstruction)

Agriculture is one of the main sectors that contributes to the economic development of Timor-Leste and will continue to play a major role in the country's economy for the near future.

About 80% of the population is engaging small and subsistence farming that contribute around 35% of the country's GDP. This figure indicates that productivity of farmers is still low and there is chance for further improvement.

Several individual and collective efforts led by the Ministry of Agriculture and Fisheries (MAF), International Developing Agencies and NGOs have been conducted to elevate the productivity of farmers. Some good and outstanding results have been achieved so far, even though MAF admits that the goals are still ahead of us.

Apart from those efforts and achievements, MAF recognizes the introduction of the booklet "*Matadalan kona ba oin sa atu hakbit no tulun komunidad rural sira*" as a significant contribution from the "Japan International Research Center for Agricultural and Sciences" (JIRCAS) to provide a uniform guide to those who are interested in helping the farmers to help themselves. The techniques and skills to communicate with farmers, understand their constraints and needs, promote their involvement and active participation in the agricultural development programs – shall be understood by all parties that are interested in helping the farmers. These approaches are all depicted in this booklet.

With the introduction of this *Matadalan*, particularly to the Agriculture Development Agencies and MAF, farmers will be assisted in a very efficient and effective manner, leading to the improvement of their productivity, increase in agriculture production and productivity, ensure food security and increase country's GDP. We consider this booklet as a *guide* and as an important input to MAF.

The Ministry of Agriculture and Fisheries acknowledges the active involvement of the JIRCAS in Timor-Leste's agricultural development and appreciates its leading role in the preparation of this textbook or *Matadalan*. Similarly the Minister of Agriculture and Fisheries also extends its gratitude and recognition to the Government of Japan for its generosity in financing several projects of development in Timor-Leste, including the preparation of this *Matadalan* of assistance to the rural farmers in Timor-Leste.

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Director General of MAF

Introduction (Position of the guideline)

(Background and aims)

In the Democratic Republic of Timor-Leste (hereafter referred to as Timor-Leste), agriculture is a major industry and accounts for 35% of the gross domestic product. More than 70% of people live in rural areas and more than 40% of people are below the poverty line (less than US\$1 of living expenses per head per day); therefore, Timor-Leste is regarded as one of the poorest countries in Asia. For this reason, efforts, such as stable food supply, the improvement of agricultural productivity, and human resource training, toward sustainable agricultural development have been urgent and important issues.

Aiming for a seamless and smooth transition from emergency assistance to reconstruction and development assistance and realization of peace, stability, and sustainable agricultural and rural development in Timor-Leste, the Japan International Research Center for Agricultural Sciences (JIRCAS) and the Ministry of Agriculture and Fisheries (MAF), Timor-Leste, investigated and developed a support method called “rural community reconstruction”. In collaboration with support organizations, including government agencies, international agencies, and nongovernmental organizations (NGOs), this serves as an aid for revitalizing impoverished agriculture and rural communities, and compiling these results of investigation and development of a support method as a guideline.

(Concept of rural community reconstruction)

Basically, “the integrated agricultural and rural development” method, which is considered to be effective as a sustainable, participative agricultural and rural development method for inhabitants in developing countries, is applied to reconstruction assistance. In order that farmers themselves and the administration can continue the rural community reconstruction activities on the basis of the needs of farmers, the integrated agricultural and rural development method provides a community with assistance for future planning, development of farmers’ organizations, development of rural infrastructure, and development and dissemination of appropriate local techniques. However, the integrated agricultural and rural development method requires a relatively long-term support because it is a participatory approach.

In reconstruction assistance, on the other hand, prompt support is required because reconstruction assistance aims to activate impoverished rural communities by swiftly showing visible results to them. In addition to that, when reconstruction assistance is caused by conflict, measures against the deterioration of administrative functions due to an outflow of human resources are required. In Timor-Leste, the administration cannot be depended on excessively because the administration is lacking in local administrative officers. Therefore, measures to complement the administration are also needed.

Paying attention to the way in which reconstruction assistance activities are performed, JIRCAS verified the following points based on 3-year verification studies.

(i) Selection and concentration of contents of the integrated agricultural and rural development method

The integrated agricultural and rural development method with a participatory approach involves the reorganization of existing human and material resources in Aldeias and involves support for not only production activities, including rehabilitation of rural infrastructure, but also community activities seamless such as capacity strengthening of farmers’ organizations.

Because reconstruction assistance is lacking in human resources, the integrated agricultural and rural development method is considered to be more effective. However, to develop a much more rapid assistance

method, activities of the integrated agricultural and rural development method have to be selected and narrowed down. Therefore, of the activities to which the integrated agricultural and rural development method is applied, “organization and human capacity development: capacity strengthening of farmers’ organizations” and “development of rural infrastructure: rehabilitation and maintenance of small irrigation facilities” are selected and given priority. In addition to that, to effectively lead a result of these support activities to rice production, support for the improvement of the farming technique is also performed. By this series of support activities, the empowerment of farmers and farmers’ organizations will be certainly strengthened as it leads to the revitalization of rural communities.

(ii) Collaboration with other support activities for community reconstruction

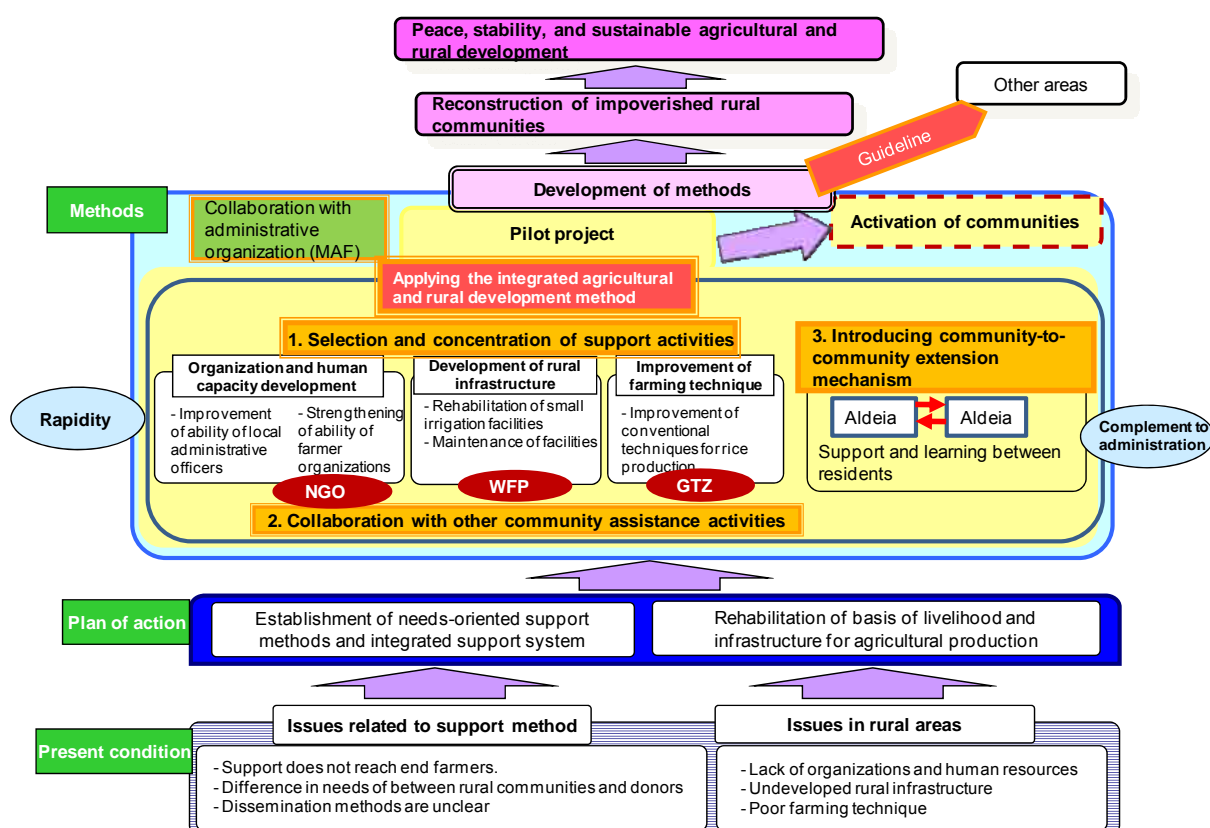
Factors of success in reconstruction assistance are early presentation of visible results and recovery of self-confidence in people and trust relationships between people. For this purpose, support organizations have to collaborate with each other under the umbrella of administration programs and perform assistance activities for community reconstruction.

Reconstruction assistance activities performed in an area covered by JIRCAS study include, in Bucoli Suco, which is a target Suco of JIRCAS’s pilot project, a Food for Work (FFW) program by the United Nations World Food Programme (WFP) and Integrated Crop Management (ICM) program by the German Technical Cooperation Agency (GTZ) for rice production. In Baucau Sub-district, Seeds of Life is implementing a program on the production and distribution of seeds. In Manatuto District, next to Baucau District, the Irrigation and Rice Cultivation Project (IRCP) is being conducted with the cooperation of the Japan International Cooperation Agency (JICA). Collaborating with these organizations, JIRCAS addresses integrated agricultural and rural reconstruction support through a participatory approach and develops a method in which maximum output can be obtained quickly with minimum input.

(iii) Introduction of a community-to-community extension mechanism

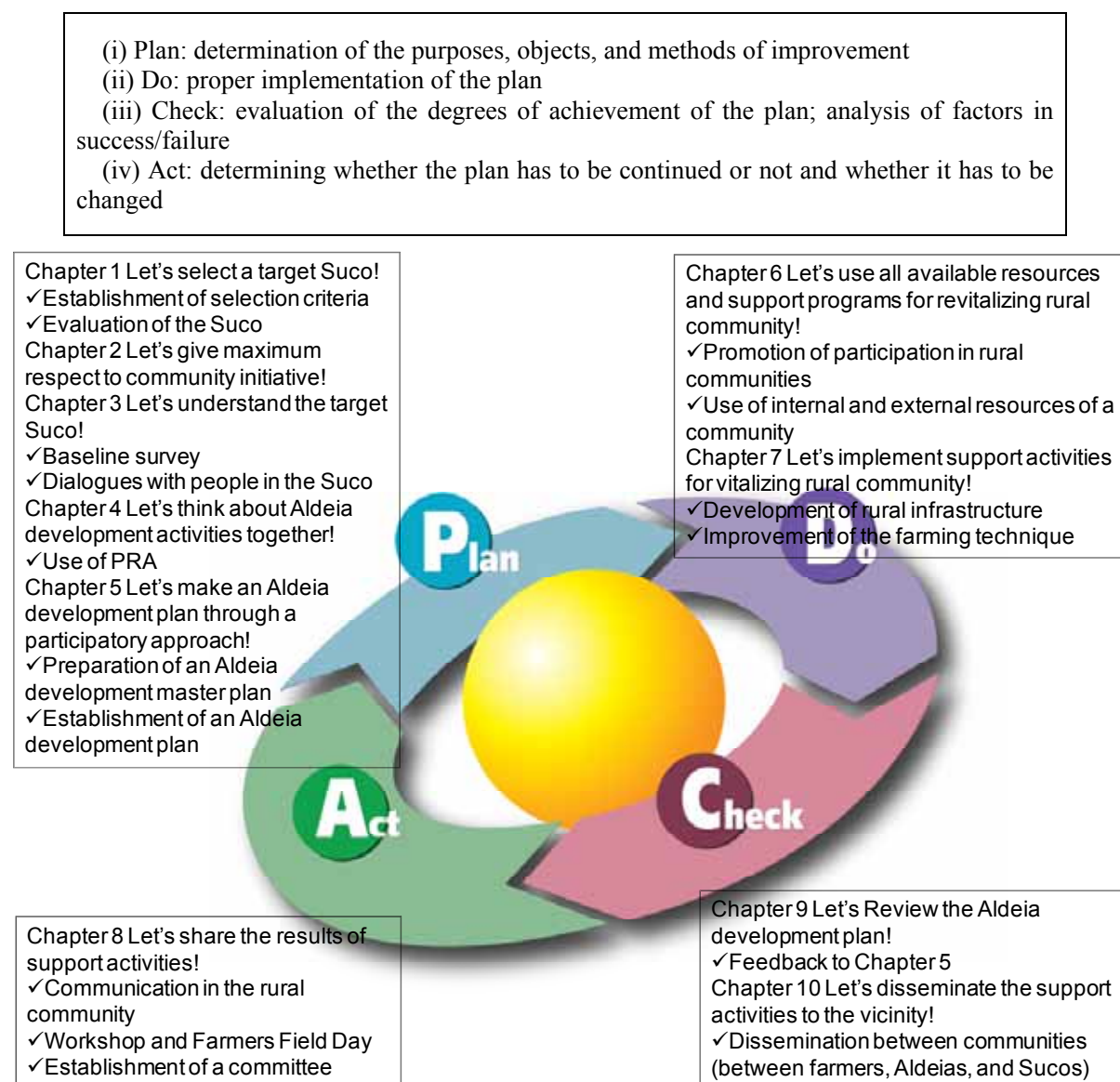
The administration cannot be depended on excessively because it is lacking in administrative officers; therefore, a supporting method that can bring out a maximum function of the extension mechanism between farmers in different rural communities will be developed, and the effectiveness of the method will be verified. At the same time, practical measures to strengthen local administrative functions in the early stages of reconstruction will be considered and proposed.

The following is a conceptual diagram of revitalizing of rural community.



(Structure of the guideline)

With the aim of promoting business process improvement and problem solving efficiently, the guideline is compiled along with the PDCA cycle shown as follows.



The guideline is prepared based on cases that JIRCAS performed in three Aldeias in Baucau District. Therefore, the selection criteria and distribution of points for scoring described in the guideline have to be used as reference and have to be determined with consideration given to regional characteristics as they are suited to each target Suco. The guideline shows an example of the approach and consideration given to community development assistance.

The guideline is expected to be used by officers of the District Agriculture Office and extension workers of MAF when they support rural communities and to be used as a textbook for training programs for extension workers. It is truly anticipated that the guideline will be revised by human resources of Timor-Leste on the basis of the experiences and know-how acquired through practice of rural community development assistance with the guideline.

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{ PLAN }

Chapter 1 Let's select a target Suco!

(How to select candidates for a target Suco)

{The estimated time taken for selection of a target Suco and an agreement with communities through dialogue considering community initiative: about 2 weeks}

(1) Procedure for selecting candidates for a target Suco

When a candidate Suco for support is selected from several Sucos, the following selection procedure will be followed.

(i)	Establishment of selection criteria
(ii)	Evaluation by grading each selection criterion (prioritization)
(iii)	Site reconnaissance in prior Sucos (Organizations concerned jointly understand the state of the Sucos.)
(iv)	Exchange of opinions in community meetings
(v)	Tentative decision with the agreement of the community
(vi)	Report to a responsible person of the administration (e.g., Director of the District Agriculture Office) and final decision

*the selection criteria and distribution of points for scoring described in the guideline have to be used as reference and have to be determined with consideration given to regional characteristics as they are suited to each target Suco.

(2) Establishment of selection criteria for candidates for a target Suco

Examples of selection criteria include availability of support from MAF (whether the Suco is given priority), the poverty state of the Suco (whether food is secured stably), potential of water resources and agriculture (much or little), probability of farmers' participation (presence or absence and experiences of farmers' organizations), collaboration potential with other donors and NGOs (actual results in the past and plans), and demonstration impact on other areas.

*the selection criteria and distribution of points for scoring described in the guideline have to be used as reference and have to be determined with consideration given to regional characteristics as they are suited to each target Suco.

(3) Evaluation of candidates for a target Suco by grading (prioritization)

In the selection of a Suco, it is necessary to obtain cooperation from persons belonging to Irrigation Division, Crop Production Division, Livestock Division, and Forestry Division of the District Agriculture Office, who are deeply versed in the agricultural and rural circumstances of Sucos. Make an effort to ensure fairness by obtaining cooperation from persons in charge of various divisions.

Collaboration with organizations concerned should be established in early stages. On the basis of these premises, grading and evaluation for candidate selection is performed by persons concerned.

The following table is an example of grading.



Grading and evaluation by persons concerned

Table 1.1 An example of grading and evaluation of the target Sucos of our verification study

Selection criteria		Name of Suco	B	W	G	T	S	K
		Number of Aldeias	6	10	8	4	5	7
(i)	Availability of support from MAF		2	1	2	2	2	2
(ii)	Support necessity from viewpoints of poverty reduction		2	1	1	2	1	1
(iii)	Project impact with small inputs		2	2	1	1	1	2
(iv)	Probability of farmers' participation		2	0	1	2	1	1
(v)	Collaboration potential with other donors and NGOs		2	0	0	2	0	1
(vi)	Demonstration impact on other areas		2	1	1	2	1	1
Total scores			12	5	6	11	6	8

Note: superior (+2), good (+1), moderate (0), inferior (–2)

*the selection criteria and distribution of points for scoring described in the guideline have to be used as reference and have to be determined with consideration given to regional characteristics as they are suited to each target Suco.

(4) Site reconnaissance in prior Sucos

Based on the result of evaluation, persons concerned conduct a site reconnaissance mainly in the Suco ranked first and check the agricultural and rural circumstances.



{ PLAN }

Chapter 2 Let's give maximum respect to community initiative!


(How to reach an agreement with the community through dialogue considering community initiative)

{The estimated time to select Sucos with operation activities and to reach an agreement with community through dialogue considering community initiative: about 2 weeks}

On the basis of the result of site reconnaissance, a meeting with key members of the most promising Suco is held to exchange opinions. Attendance of the Suco Chief, Suco Advisor, Aldeia chiefs, youth group leaders, and women's group leaders is recommended.

The agreement procedure for new support activity considering the community initiative is as follows.

When an agreement of the community is obtained, the Suco is determined as a target Suco.

(i) Prior explanation to a leader such as the Suco Chief	Explain the intention of the support activity to a leader of the community (e.g., the Suco Chief) and obtain understanding.
(ii) Community-led calling and holding of meeting	A leader of the community calls and holds a meeting.
(iii) Explanation of the intention by the community at the beginning of the meeting	At the beginning of the meeting, the leader of the community explains the intention of the support activity.
(iv) Supplementary explanation	The body performing the support activity, such as an extension worker gives a supplementary explanation including reasons why the community becomes a candidate.
(v) Listening to opinions of participants and questions and answers	Listen to opinions of participants eagerly and answer questions carefully.
(vi) Confirmation of the responsible body (community)	<p>Confirm that the responsible body of the support activity for agricultural and rural development is the community.</p> <ul style="list-style-type: none"> ○ The responsible body of the pilot project is members of a Suco. ○ If expenditures for materials required for the support activity are involved, they are basically shared. ○ Mutual cooperation is required as the effect of the support activity extends to other Aldeias that are not targets of the support activity by using an Aldeia-to-Aldeia extension mechanism.
 <p>Dialogue with key members of a promising candidate Suco</p>	
(vii) Agreement of the community	Determine a target Suco for the support activity with agreement of participants.

Column 1: Lessons and learning when JIRCAS-MAF support programs were commenced

In relation to the selection of target communities, same experiences we got in Agriculture Rehabilitation Projects (ARP), where coordination is done among donors as fund sources and related programs implementation authorities in our case the Ministry of Agriculture and Fisheries who is the main responsible of the program in the country. In the Ministry of Agriculture there are many National Directorates according to the fields of Agriculture Development. So when we talk about agriculture development, each directorate might not do anything separately but has to work closely with other Directorates and we call it as an integrated program where many directorates are involved to provide any assistance during the activities implementation and to do so a commission establishment is needed, that's why a Steering Committee is usually established in order to provide any assistance requested during the implementation time.

All the Directorates involved are under the Director General coordination so usually the Director General is assign as the President of the Committee with the National Directors as members. Since target areas are in the districts, District Agriculture Authorities are contacted for the coordination at the district level and then Suco and Aldeias leaders as candidate target areas. Preliminary Coordination among District, Suco and Aldeias level is done mainly to inform and to propose a general meeting where people from all community level are invited to be sheared about the activities supposed will be provided. A date and time is fixed for the meeting. On the meeting time all responsible Authorities central, district and community level (Suco and Aldeias level) are requested to be present and to be on time! The Community is briefed about supposed activities to be assisted through the program, we also have to be clear on the responsibilities of all involved parties, community, government, donor and any other Non Government Organizations if there is any, otherwise, many constraints will be faced during the implementation of the activities in the field, even though it does not mean that there will be no problem when everything is explained at the beginning. Mainly time is given for questions and answers. Any kind of questions is usually addressed to the government and donors.

What we have to do is to be carefully in the answers in order softly can aware them to participate through acceptable reasons. Other thing that is also important is the site preconditions that is acceptable for the project implementation, that's why site visit is required even more than one time to be sure if the requested conditions is fulfilled. All constraints and preconditions are taken in account and considered for the selection of the target village. At the end the last decision of the target village is selected at the district level through Aldeias and Suco authorities' acceptance and then approved by the Steering Committee!

Written by: Mr. Martinho L. Soares (National Director of Irrigation and Water Management, MAF)

Column 2: Importance of community initiative for rural development activities

A rule of community in rural development activities

Government and donors are undertaking activities in the Bucoli village there has never been the misunderstanding with the existing rules in the Bucoli village and also the government and donors engaged in activities such as building irrigation in Waikoa, Techniques, measurements and drawings done by the government and financed by the government's Spain.

Importance of community initiative for rural development activities

Community initiative for rural development activities is crucial. The reason is the desire of the community and also the results for the community.

About JIRCAS activities

JIRCAS activities is not new, because irrigation already exist in ancient times, but the presence of JIRCAS to continue, improve and teach the system of rural development and techniques and agricultural irrigation better and to change conditions and life of traditional peasant society into a more modern system with respect for community initiative.

Written by: Ms. Teresinha dos Reis (Suco Chief of Bucoli Suco)

{ PLAN }

Chapter 3 Let's understand the target Suco!

(Method to conduct a baseline survey, Method to understand the present situation and problems through dialogue)

{The estimated time taken for a baseline survey: about 2 months;

The estimated time taken for the understanding of the present situation and problems through dialogue, utilization of participatory rural appraisal (PRA), and support for planning of an Aldeia development plan: about 2–3 months (Much more time may be spent because the stage is extremely important.)}

It is necessary for the reconstruction and revitalizing of rural community to understand the present situation of rural community. Understanding the present problems becomes the basis for the analysis of these problems and for examination on whether activities are required to improve the problems.

Concrete methods are as follows:

- Baseline survey
- Method to understand the present situation and problems through dialogue

3.1 Method to conduct a baseline survey

(1) Preparation

For the revitalization of Sucos, it is required to understand the present situation of Sucos as well as problems to be improved. A baseline survey is one of methods of comprehending the present situation.

Information on the present situation of Sucos varies according to Suco, Aldeia, and farmer levels. The classification of data and main data to be collected for information collection at Suco, Aldeia, and farmer levels are as follows. Refer to Appendix 1 for a data sheet form of the baseline survey.

Table 3.1 Classification of data and main data to be collected

	Classification of data	Detail	Main data to be collected
(i)	Suco profile	Describe outline of a Suco	【Social capital】 - Community center (Suco level), meeting and its members, community organizations (Suco level) - School, hospital - Customs 【Economic capital】 - Road, agricultural facilities, etc.
(ii)	Aldeia profile	Describe outline of an Aldeia	【Social capital】 - Community center (Aldeia level), community organizations (Aldeia level) - Customs 【Economic capital】 - Road, water resources, irrigation facilities, other agricultural facilities, etc.
(iii)	Farmers Household Survey data sheet	Describe basic information on each farmer (20 farmers are sampled from an Aldeia)	【General information】 - Head of family, family structure, number of persons engage in farming, distance from house to farm field, etc. 【Land ownership state】 - Owned/Rented

			【Agricultural information】 - Cultivated area, production, and cropping season of rice, maize, cassava, vegetables, etc. - Kinds and heads of livestock - Use of pesticides, fertilizers, and seeds - Irrigation system condition - Learning about agricultural technique from other organizations, etc. - Participation frequency in the maintenance work of agricultural machinery and facilities 【Family budget information】 - Income, expenditure, saving, etc.
(iv)	Summary Sheet of each Aldeia	Summary of Farmers Household Survey data sheets in each Aldeia	Summarize Farmers Household Survey data sheets in each Aldeia.
(v)	Summary Sheet of each Suco	Summary of the Summary Sheet of each Aldeia	Summarize the Summary Sheet of each Aldeia.

(2) Data collection method

Data are collected through a hearing conducted for farmers, Aldeia chiefs, and a Suco Chief. Because the hearing from all farmer households will take a lot of time, sample households should be drawn from a population. For example, the adequate number of sample households for data collection in an Aldeia with about 100 households is about 20 households.

JIRCAS conducted a hearing for 20 sample households randomly selected from each Aldeia. At the beginning of the baseline survey, JIRCAS explained the method and schedule of the baseline survey to the Suco Chief, Aldeia chiefs, and organizations concerned such as the District Agriculture Office of MAF, WFP, and GTZ; conducted a hearing from the Suco Chief as a demonstration of Farmers Household Survey; and obtained an understanding from persons concerned in the Suco.



Demonstration of a hearing from farmers

(3) Report of the survey result

The result of the baseline survey should be reported to the Suco, Aldeias, and farmers and shared with them.

1) An example of a report meeting in a target Suco

Here is an example of a report to the Suco, Aldeias, and farmers. A report meeting is held at a community center of the Suco and participated in by persons in charge of the Irrigation Division and Crop Production Division of the District Agriculture Office of MAF, the Suco Chief, Aldeia chiefs, women's group leaders, local offices of WFP and GTZ, etc. In the meeting, the intention, method, and data of the survey are introduced.



Report meeting in a community center of the target Suco (participated in by main members of the Suco, District Agriculture Office, WFP, and GTZ)

(4) Result of main data

The following table shows main data collected from Aldeias in the target Suco (20 households per Aldeias).

Table 3.2 An example of the result of main data of the baseline survey

Name of Aldeia Data items	A	B	C	D	E	F	Average farmer
Number of family members (persons/household)	8.7	7.0	7.1	5.5	7.4	6.3	7.0
Number of persons engaged in farming (persons/household)	3.3	2.2	2.4	1.8	2.4	2.3	2.4
Literacy rate (over 10 years old) (%)	62.8	72.3	78.5	46.3	72.3	66.0	66.4
Rice cultivation area (hiban ¹ /household)	26.1	16.5	18.8	10.6	15.9	43.3	21.9
Paddy production (lata ² /household)	122.0	74.1	85.3	62.3	87.0	134.6	94.2
Estimation (t/household)	1.46	0.93	1.02	0.75	1.04	1.62	1.14
Annual income from farming (US\$/household)	148.3	93.8	120.4	54.8	109.2	348.3	145.8
Annual income from farming less than US\$50 (household). Figures in parentheses indicate the number of samples.	11 (15)	7 (20)	9 (14)	9 (18)	9 (17)	9 (16)	(50.0% of sample households)

*1: hiban means a unit of area of farm field. 2: lata 12 kg.

Sample of Calculation

Data of number of family members of A Aldeia

	a	B	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	total
Mane	7	2	3	6	7	4	3	4	9	8	5	3	4	3	3	3	4	4	4	2	88
feto	2	5	3	4	3	0	3	3	4	6	6	8	2	1	5	6	10	6	3	6	86
total	9	7	6	10	10	4	6	7	13	14	11	11	6	4	8	9	14	10	7	8	174

In this case, how to calculate of number of family members are as follows.

$$(a+b+c+d+e+f+g+h+i+k+l+m+n+o+p+q+r+s+t)/20$$

$$=(9+7+6+10+10+4+6+7+13+14+11+11+6+4+8+9+14+10+7+8)/20=174/20=8.7$$

(5) Example of Aldeia selection

A Suco consists of Aldeias. To revitalize a Suco, all Aldeias in the Suco, several Aldeias, or only one Aldeia in the Suco may be selected. The following text shows an example of a case where some Aldeias are selected from a Suco for the support activity.

The following five selection criteria are established and Aldeias are graded based on the criteria (superior [+2], good [+1], moderate [0], inferior [-2]). Examples of selection criteria include (i) support necessity from viewpoints of poverty reduction, (ii) agricultural potential, (iii) probability of farmers' participation, (iv) collaboration potential with other donors and NGOs, and (v) demonstration impact on other areas (location of farm fields). Indicators and data resources are as follows.

Table 3.3 Data items, indicators, and data resources

	Item	Indicator	Data resource
(i)	Support necessity from viewpoints of poverty reduction	Ratio of households whose annual income from farming is less than US\$50	Baseline survey
(ii)	Agricultural potential	Cultivated area and production of rice	Baseline survey
(iii)	Probability of farmers' participation	Participation frequency in maintenance work of agricultural facilities	Baseline survey
(iv)	Collaboration potential with other donors and NGOs	Learning about agricultural technique from other organizations, etc.	Baseline survey
(v)	Demonstration impact on other areas	Location of farm fields	Site survey

*the selection criteria and distribution of points for scoring described in the guideline have to be used as reference and have to be determined with consideration given to regional characteristics as they are suited to each target Suco.

After evaluation based on the indicators and data resources described above and consultation with organizations concerned such as MAF and WFP, candidate Aldeias are selected and proposed to the Suco. After proposition to key members (the Suco Chief, Suco Advisor, Aldeia chiefs, youth group leaders, women's group leader, etc.) of the target Suco and exchange of opinions with them, a final decision is made.

As described so far, the final decision should be made not only by an extension worker but also through coordination with organizations concerned, when necessary, and people in the Suco in the end.

Table 3.4 Result of Aldeia selection

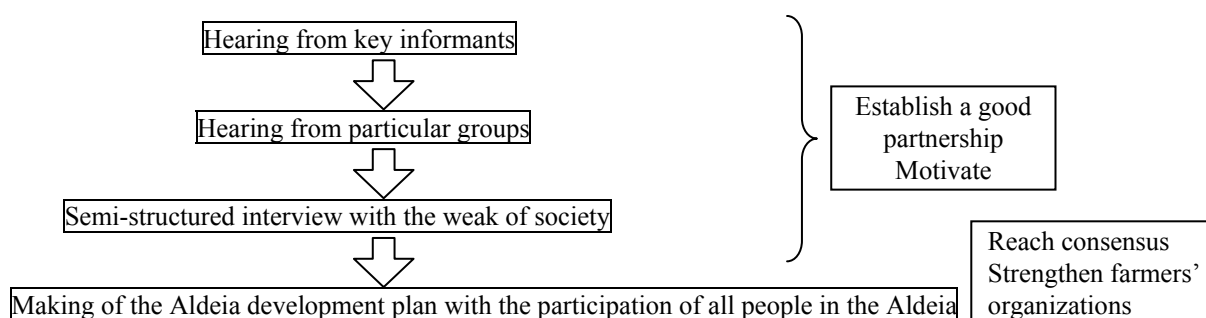
Selection criteria	Name of Aldeia	A	B	C	D	E	F
	Number of households	***	***	***	***	***	***
(i)	Support necessity from viewpoints of poverty reduction	+2	+1	+1	+1	+1	0
(ii)	Agricultural potential	+2	+1	+1	0	+1	+2
(iii)	Probability of farmers' participation	0	0	+1	+1	+2	+1
(iv)	Collaboration potential with other donors and NGOs	+2	0	0	+1	0	+1
(v)	Demonstration impact on other areas	+2	0	+2	0	+2	+1
(vi)	Support of WFP's food support program	+2	0	0	0	+2	0
	Total scores	10	2	5	3	8	5

*the selection criteria and distribution of points for scoring described in the guideline have to be used as reference and have to be determined with consideration given to regional characteristics as they are suited to each target Suco.

3.2 Method to understand the present situation and problems through dialogue

To understand the present situation and problems in a target Suco, repeated dialogues with people in the Suco are required. The dialogues should be performed with different persons in the following procedure.

First, hearings from key informants are conducted to complement and cross-check information obtained in the baseline survey. Next, dialogues with particular groups involved in irrigation canal rehabilitation and rice cultivation, which will be the main support activities, and semi-structured interviews (an interview method in which questions are flexibly restructured during the interview depending on what the interviewee says) with the weak of society in the Aldeia are performed to establish good partnership between extension workers and people in the Aldeia and to motivate them for the support activities. Finally, all people in the Aldeia participate in the making of an Aldeia development plan of their Aldeia to reach a consensus and to strengthen farmers' organizations. At the same time, the points that an extension worker has to understand in an activity in the Aldeia are also investigated.



(1) Dialogue with key informants

Having dialogues with organizations of an Aldeia and key informants involved in irrigation canal rehabilitation and rice cultivation as a preliminary stage of dialogues with people in the Aldeia allows support activities to be developed efficiently. Key informants must be (i) persons having information that may largely relate to future activities or (ii) persons having information that is useful and important to understand the background of thought and action of people in the Aldeia.

JIRCAS conducted dialogues with the Aldeia chiefs, Kab-uai (water manager), and traditional patriarch several times. In general support activities, information obtained by these dialogues, described below, are considered to be useful and should be obtained first.

(1) Dialogue with an Aldeia Chief
(i) Outline of an Aldeia, (ii) Social structure of the Aldeia, (iii) Selection method and activity of the Aldeia Chief, (iv) Outline of cooperative activity groups in the Aldeia, (v) Process of requests of past support activities
(2) Dialogue with Kab-uai
(i) Kab-uai and their group in the Aldeia, (ii) Election method and activity of the Kab-uai, (iii) Authority of the Kab-uai

(3) Dialogue with a traditional patriarch
(i) Relationship between the traditional patriarch and the administration chief, (ii) Selection method and activity of the traditional patriarch, (iii) Involvement in the decision-making process at the Aldeia level, (iv) Local conventions and customs (lulik, tara bandu, etc.)

(2) Dialogue with individuals

Dialogues with individuals are conducted not only to complement and cross-check information obtained by the baseline survey but also to elicit firsthand opinions and thoughts, which cannot be expressed in figures. The aim of the dialogues is to deepen individuals' understanding about the extension workers' support activity. New reliable information that is considered to be useful for the execution of the activity is often obtained from the dialogues, and the information should be shared with persons engaged in the support activities and renewed.

As direct first contact with people in the Aldeia, JIRCAS had dialogues with individuals such as part-time farmers, small farmers, farmers who moved from other Aldeias, farmers' wives, and nonfarmers. These dialogues were conducted as follows by using the semi-structured interview method.

Dialogues with individuals
(i) Social position, such as age and family structure, of the interviewee, (ii) Farmland that the family of the interviewee has and its cropping circumstances, (iii) Reason why the interviewee plants rice (merit) or reason why the interviewee does not/cannot plant rice (demerit)

As described above, individuals who are under different circumstances than those of key informants, hearings from whom have been performed in advance, should be selected. Different opinions that cannot be obtained by hearings and Aldeia meetings are probably elicited from the weak of society and minority people.

(3) Dialogues with particular groups

Next, dialogues with particular groups involved in irrigation canal rehabilitation and rice cultivation, which are the main support activities, are conducted. Unshaken and effective dialogues with groups having the same concerns and problems about particular topics can be performed because they have basic knowledge about the topics in the same degree and a close connection with the topics.

JIRCAS had dialogues with a group who had participated in a past FFW program for reference of a future FFW program, a women's group from the viewpoint of consideration for gender, and a group extremely knowledgeable about the history of the Aldeia. The following are the outlines (purposes and flows) of the dialogues with these three groups.

(1) Dialogue with the FFW group
1) Purpose of the dialogue
(i) Confirmation of the degree of participation to the program planning and the ability to invite the program (the reason for application to a past FFW program, the process of preparation of an application and reflection of demands in the application, and the reason for selection of group members)
(ii) By reviewing the past FFW activity, the ability to manage activity and to solve problems (the difference between the planned process and the actual process, problems that had occurred in the activity and countermeasures to the problems) were confirmed.
2) Flow of the dialogue

(i) Self-introduction and explanation of the purpose of the dialogue, (ii) creation of a map of the Aldeia, (iii) confirmation of the site of farmlands that the participants have, (iv) making the picture of the 2008 FFW program plan, (v) recognition of the difference between the planned process and the actual process, (vi) reason for the difference and countermeasures against the difference, and (vii) final confirmation of the result of the dialogue and comment from JIRCAS.

(2) Dialogue with the women's group

1) Purpose of the dialogue

- (i) Confirmation of knowledge about the rice cultivation technique and the degree of cooperation by making clear men's and women's respective works for rice cultivation, from preparations of lands to harvest
- (ii) By answering questions about time required for the works and seasons in which the works should be carried out, experiences and the depth of concern about rice cultivation were confirmed and mutual understanding was promoted through comparison of difficulties of men's and women's respective works.

2) Flow of the dialogue

- (i) Self-introduction and explanation of the purpose of the dialogue, (ii) clarification of agricultural works by brainstorming, (iii) sorting of the works in order, (iv) clarification of time required for the works and seasons of the works, (v) ranking of the labor expended in women's works, (vi) comparison of difficulties of men's and women's respective works, and (vii) confirmation of the result of the dialogue and comment from JIRCAS.

(3) Dialogue with the knowledgeable group

1) Purpose of the dialogue

- (i) Clarification of the history surrounding the Aldeia, such as historical date of foreign domination (nation level), history of the development of rural infrastructure (Suco level), and agricultural history such as years of good harvest and bad harvest (Aldeia level).
- (ii) Understanding the relation between events at the nation, Suco, and Aldeia levels, which are required to plan an Aldeia development plan, and views of knowledgeable persons on the history and events.

2) Flow of the dialogue

- (i) Self-introduction and explanation of the purpose of the dialogue, (ii) sorting of the history at the nation level in chronological order, (iii) addition of the history of development of rural infrastructure at the Suco level, (iv) clarification and sorting of agricultural events at the Aldeia level, (v) consideration of relation among the events at each level, and (vi) confirmation of the result of the dialogue and comment from JIRCAS.



Dialogue with key informants (Kab-uai)



Dialogue with a group who had participated in a past FFW program

{ PLAN }

Chapter 4 Let's think about Aldeia development activities together!

(How to utilize PRA)

{The estimated time taken for the understanding the present situation and problems through dialogue, utilization of PRA, and support for planning of an Aldeia development plan: about 2–3 months (Much more time may be spent because the stage is extremely important.)}

After a significant number of people in the Aldeia understand the objective of support activities and the importance of an Aldeia development plan through semi-structured interviews with the weak of society and dialogues with key informants, it can be judged that an Aldeia meeting to plan an Aldeia development plan can be held.

Participatory Rural Appraisal (PRA) is a method used to analyse real situation in rural areas (areas far away from cities) through participatory way. This method require maximum participation from the communities in Aldeias or Sucos, considering they are people who knew better about the problems they faced and their daily life needs. The facilitator in the PRA activities perform as an outsider who helps the whole process to proceed properly in order to obtain good results.

4.1 Reasons for the use of PRA

Because extension workers may not hail from the Sucos that they take charge of, the procedure described below should be followed. The time required for the procedure varies greatly according to the situation of Sucos and the contents of investigation. It also varies with the degree of the community residents' understanding of activities that extension workers conduct.

(i) Understanding the present situation, (ii) problem analysis, (iii) selection of countermeasures, (iv) making of an activity plan, (v) execution of the activity, and (vi) follow-up and evaluation.

When considering from the residents' perspective, it is extremely important for the smooth promotion of a development activity at an Aldeia level that residents have high motivation toward the Aldeia activity, consensus is achieved among residents, and an organization of residents is trained and strengthened.

From such points of view, prompt and efficient investigation of the rural community and promotion of empowerment of the residents are required to support the establishment of an inhabitants' participative Aldeia development plan. That is to say, making full use of PRA is effective. The guideline defines PRA as "an approach method of supporting farmers as farmers themselves recognize their problems jointly and implement solutions initiatively."

4.2 Selection of PRA to be implemented

There are many tools in PRA, and selection of tools suited to the purpose is important. For example, representative tools often used in participatory appraisal, such as group profile and transect (preparation of cross section), are useful to learn about human resources, material resources, and natural resources available in the area.

Because our first important objective is to make people understand our investigation activity and

recognize the importance of an Aldeia development plan, JIRCAS selected tools for problem analysis, such as cause-and-effect diagram, problem ranking, and examination of countermeasures, and used them intensively. As many residents can deepen the understanding of JIRCAS's activity and residents can take a friendly and positive attitude toward us, we did not stick to these PRA tools and detailed questions extensively requiring accuracy of answers, even if physically meaningful results could not be obtained.

4.3 Concrete details of PRA

The first step of support for the making of an Aldeia development plan is to clarify important information and to share it with all participants. A participative farmers' workshop (W/S) using PRA is effective for this purpose.

The following is a description regarding the W/S to make seasonal calendars, time distribution graphs, Venn diagrams, and farming maps, which JIRCAS carried out. It includes relation to an Aldeia development plan and points to note.

<p>(i) Preparation of a seasonal calendar</p> <p>Clarify participants' annual allocation of workforce by making an agricultural calendar to improve the accuracy of an Aldeia development plan. In the calendar, specify agricultural works for each crop and add customs such as tara bandu and necessary information such as an amount of precipitation.</p> <p>* See "6.2(1) Set the seasonal calendar" for an example of a seasonal calendar.</p>
<p>(ii) Preparation of time distribution graph</p> <p>Deepen the difference between genders by making time distribution graphs of daily life in an Aldeia as an example. Make clear the roles of and time required for men and women in daily life to perform the activities listed in an Aldeia development plan.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="199 1115 782 1579"> <p>Time distribution on a day before rainy season (man)</p> </div> <div data-bbox="798 1115 1380 1579"> <p>Time distribution on a day before rainy season (woman)</p> </div> </div>
<p>(iii) Preparation of a Venn diagram</p> <p>Make clear the relation of organizations concerned to residents by making a Venn diagram visualizing residents' recognition of organizations and groups carrying out activities in and near the Aldeia. The diagram becomes reference material for the determination of persons in charge of and support organizations in charge of each section of an Aldeia development plan.</p> <p>*See "6.2(2) Draw the Venn diagram" for an example of a Venn diagram.</p>

(iv) Preparation of a farming map

Understand the relation between the agriculture and livestock industry and their production system by mapping land use and relevant data from the point of view of each farmer. Analyze problems that each farmer has on the basis of the map and use it as basic data for planning of an Aldeia development plan.



Column 3: Experiences on the difficulties of the PRA survey in Bucoli Suco and countermeasures for them

Experiences on Difficulties from PRA Research in Bucoli Suco and its Partnership

Participatory Rural Appraisal (PRA) is a method used to analyse real situation in rural areas (areas far away from cities) through participatory way. This method require maximum participation from the communities in Aldeias or Sucos, considering they are people who knew better about the problems they faced and their daily life needs. The facilitator in the PRA activities perform as an outsider who helps the whole process to proceed properly in order to obtain good results.

The PRA activities in the Lulihene Aldeia and Macadai de Baixo Aldeia of Bucoli Suco, Aktividade PRA iha Aldeia Lulihene no Aldeia Macadai de Baixo, Suco Bucoli, were succesfully conducted due to the good participation from communities of both Aldeias. They were actively involved in small group discussion and plenary discussions, starting right from the identification of problems to the making of Rural Development Plan. In this way, it could be said that the result of PRA from these two Aldeias due to the efforts and contribuion of the both communities in whole process (each Aldeia held 10 meetings).

The succesfull running of these PRA activities do not mean that there was no dificulties faced by the facilitator in the meetings. The following are dificulties which are important to be mentioned such as:

1. **Different education level of the participants.** Communities participated in the PRA composed from those both literate and iliterate. Even from those were literate, some of them only reach primary and pre-secondary education level. Just a small number of them who reach secondary education level. Due to these facts the faciliator are obliged to use simple words and terms to ensure them understand better. If there is a need to use certain “technical word”, the facilitator should explain the meaning of this “technical word.”
2. **High expectation to the implementing agency of the “pilot project.”** The participants expected that the government (MAF) and JIRCAS will rapidly help them solve the problems they faced, including problems which are not directly link with agricultural field. In the opinion of the communities, the presence of JIRCAS reflect the shadow of Japan, a big and developed country. So, the community expect that, through JIRCAS the government of Japan could help with a more valueable meaning. That is why, when discuss on rehabilitation of the irrigation canals, the community preferred “a big and permanent irrigation system for longer term, instead of following the JIRCAS method”. Considering these opinions, the facilitator keep explaining to them that the MAF and JIRCAS will not solve all of your problems, but the information obtained in the PRA report will become a guideline to the local or national level of government, and other development agencies in the future.
3. **Time constraints.** Regarding time shedule for meetings, despite of having been mutually agreed on the schedules but in the implementation sometimes does not follow the plan. This happened when the communities should attend or participated in activities that they consider more important than the PRA meeting, for example: most of them should participated in the construction of traditional house, or the community leader were invited to attend meeting with government officials at the district level. Due to facts mentioned above, the time schedule agreed by the Haburas Foundation and JIRCAS on the meeting in Macadai de Baixo Aldeia which JIRCAS intend to participated were not able to happen. In relation to a case which JIRCAS might feel unhappy with, the Haburas Foundation as facilitator explained to JIRCAS that any change that occur is based on the community needs. We can not force the community to accept our preferences, since the changes do not violate the principles of PRA. The most important thing is how to keep the activities running despite the changes of time and date of meeting

Finally, I want to inform that the PRA survey in the Aldeias of Lulihene and Macadai de Baixo were able to implement due to the participation of the commmunity and Aldeia Chiefs of both Aldeias, and obtain full support from the Suco Chief, and good coordenation of work between the Haburas Foundation and JIRCAS.

Written by: Mr. Antonino Delimas (Researcher of the HABURAS Foundation)

{ PLAN }

Chapter 5 Let's make an Aldeia development plan through a participatory approach!

(How to support the establishment of an Aldeia development plan)

{The estimated time taken to fully understand the present situation and problems through dialogue, utilization of PRA, and support for planning of an Aldeia development plan: about 2–3 months (Much more time may be spent because the stage is extremely important.)}

After sharing the necessary information with people in an Aldeia by holding a W/S using PRA, a W/S to make an Aldeia development plan is held. In the W/S, support activities for the clarification of problems, problem analysis, establishment of an Aldeia development master plan, and establishment of an Aldeia development plan are performed, in that order.

To prevent participants from misunderstanding and not to give a high expectation, due consideration must be given to support for the establishment of an Aldeia development plan. In other words, an important point of the establishment of the plan is not the execution of support activities by support organizations but the process of the establishment of the Aldeia development plan. The fact that the formation of consensus among residents and training and strengthening of farmers' organizations through the process are of significant importance for future Aldeias has to be explained repeatedly.

5.1 Procedure of the planning of an Aldeia development plan

In the establishment of an Aldeia development plan, support activities are performed to form consensus among residents and to train and strengthen farmers' organizations with the use of participative W/S. Development plans for the Aldeia consist of two plans: an Aldeia development master plan, which is established by imagining the future picture of the Aldeia after 10 years, and an Aldeia development plan, in which concrete Aldeia activities to be performed within 3 years are planned. The following shows a representation of the procedure.

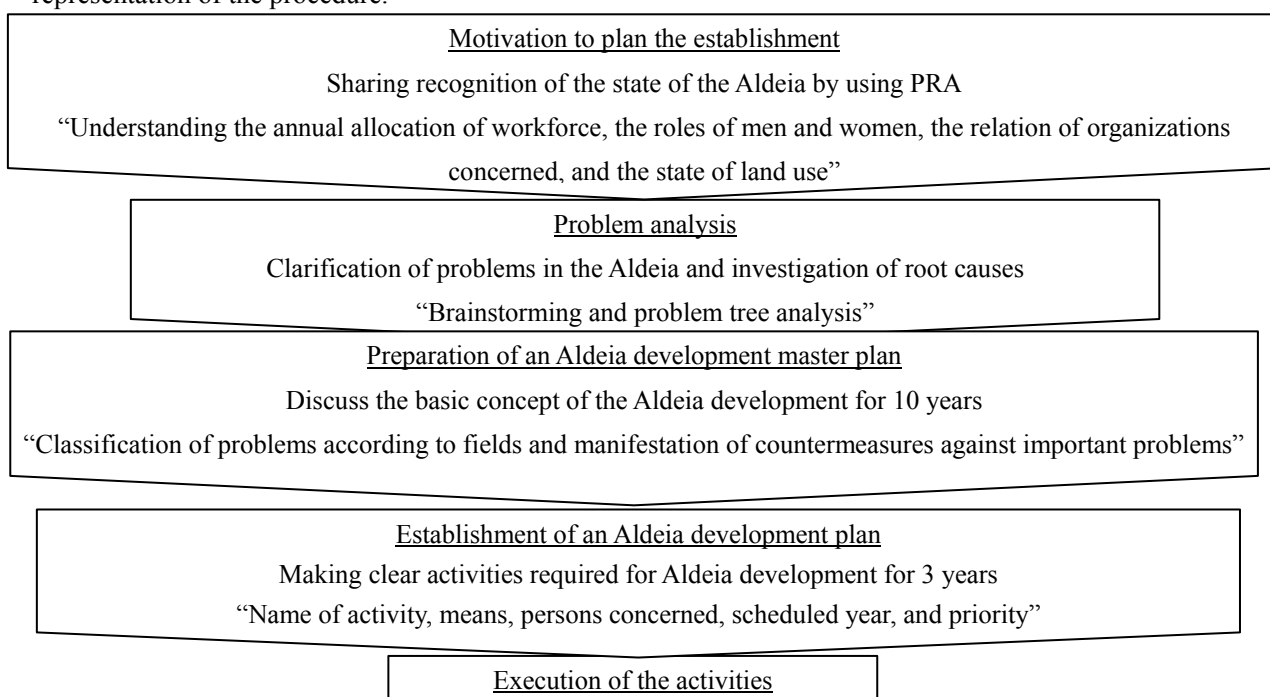


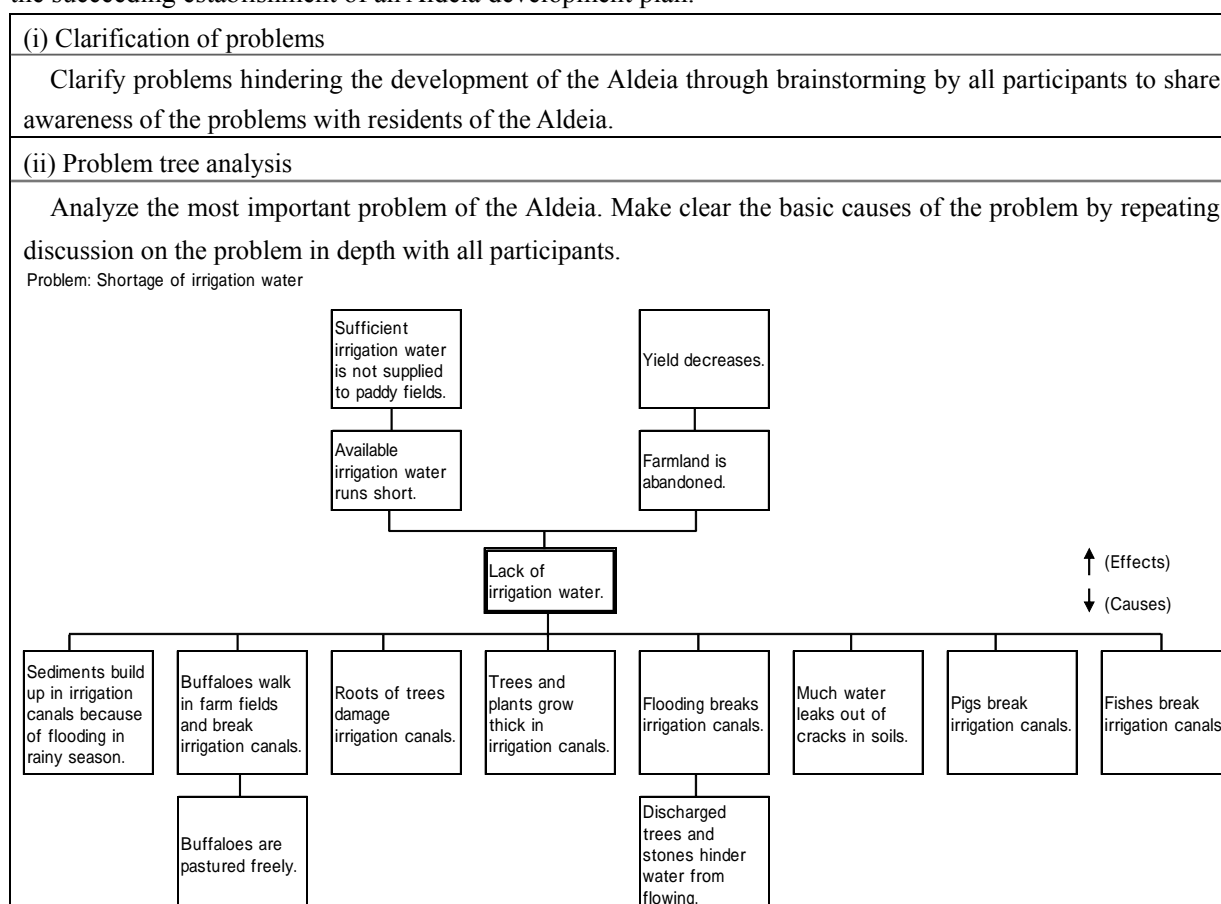
Figure 5.1 Procedure of the establishment of an Aldeia development plan

5.2 Implementation of problem analysis

W/S concerning problem analysis is broadly divided into a W/S to clarify problems and a W/S to conduct a problem tree analysis.

As a first step for the establishment of an Aldeia development plan, a W/S to clarify problems is performed to accustom participants to the making of plans. In the W/S, an atmosphere in which participants can speak freely and discuss without concern for some logical contradictions should be created as much as possible.

In a W/S for problem tree analysis, it is very difficult for participants to understand the relationship between causes and effects and to adjust the degree of problems in classification of problems. The W/S should take much time and should be progressed carefully because it becomes a fundamental operation to the succeeding establishment of an Aldeia development plan.



5.3 Planning of an Aldeia development master plan

A W/S for the establishment of an Aldeia development master plan is performed to make a concept of development for 10 years after the start of planning by analyzing problems with the participation of residents.

In a series of support programs for the establishment of the Aldeia development plan by residents who had not experienced the establishment of the plan, the W/S concerning the establishment of the Aldeia development master plan requires the most difficult technique. For this reason, intensive support by extension workers and local NGOs is needed.

Establishment of an Aldeia development master plan
Examine countermeasures against especially important problems out of problems hindering the development of the Aldeia, clarified by the previous problem analysis, and organize them as a master plan.

The following is an example of an Aldeia development master plan established by the support activities.

Table 5.1 Aldeia development master plan in an Aldeia

Field	Problem	Countermeasures
I. Infrastructure	6. Shortage of drinking water 8. Difficulty in accessing drinking water 9. Inadequate roads connecting Aldeias 10. Defects in the piping of water storage tanks	Prevent the mixing of garbage and fallen leaves Obtain water pipes Construct roads between Aldeias Repair the piping and water storage tanks
II. Education	1. Shortage of equipment and books in school 3. The languages that teachers speak differ according to teachers 4. There are no means to go to school 5. Shortage of the number of teachers	Obtain equipment and books Teachers undergo training in Portuguese Require means of public transportation Request an increase in the number of teachers
III. Hygiene	1. There is no house for staff members 2. 24-hour medical care is not provided 3. Staff members are not present during consultation hours 4. Shortage of hygienic water 5. There is no toilet in the Aldeias	Secure accommodations in the Suco Staff members stay at the Suco at all times Staffs should get trained in time management Repair waterworks of medical offices Construct toilets
IV. Industries of agriculture, forestry, and fisheries	1. There is no tractor to till paddy fields 2. Inferior quality of seeds of corn and rice 3. Inferior quality of seeds of vegetables 4. There are no materials and machinery for fishery	Request provision of tractors for common use in the Aldeias Request supply of seeds of good quality Request supply of seeds of good quality Request provision of fishing nets, fishing boats, and engines

*The numbering in the table is discontinuous because the problems that the participants mentioned were narrowed down.

5.4 Planning of an Aldeia development plan

In the establishment of an Aldeia development plan, some activities that are expected to be completed within 3 years are selected from many activities planned in an Aldeia development master plan on the basis of the residents' needs and feasibility. In the preparation of the Aldeia development plan, a form in which the contents and implementation methods of the activities, persons concerned, years the activities are implemented, and priority can be written in is specified to give a concrete form to activities and to give hints on the procedure of establishment and planning.

(i) Establishment of an Aldeia development plan: Part 1
Determine implementation methods, persons concerned, and scheduled year in order to give a concrete form for countermeasures considered in the Aldeia development master plan as Aldeia activities. By adding

them and putting into tabular form, complete the plan of an Aldeia development plan for an Aldeia.
(ii) Establishment of an Aldeia development plan: Part 2
Delete activities that have low feasibility from the plan of the Aldeia development plan and prioritize activities in the plan. The prioritization has to be done with giving consideration not only to the degree of needs but also to equalization of the workload of residents. Through the process, a final Aldeia development plan is integrated.

The following is an example of an Aldeia development plan established by the support activities.

Table 5.2 Aldeia development plan in an Aldeia

Activity	Method	Persons concerned	Scheduled years	Priority
(A: Field of infrastructure)				
1 Establishment of drinking water system in the Aldeia	1.1 Aldeia meetings 1.2 Making an application to NGOs and the government (water and sanitation department)	Aldeia Chief, chief of area	2009	1
2 Repair and construction of roads in the Aldeia	2.1 Aldeia meeting wherein all people of the Aldeia participate 2.2 Determination of the date and time of road cleanup (mowing) 2.3 Making an application to NGOs and the government (the Ministry of Infrastructure)	Aldeia Chief, chief of area, forest manager, JIRCAS	2009–2010	2
3 Construction of a meeting place for the Aldeia	3.1 Aldeia meeting wherein all people of the Aldeia participate 3.2 Preparation of an application requesting construction materials to the government 3.3 Grouping of working teams (Preparation of the Aldeia for the work is completed.)	Aldeia Chief, chief of area	2010	3
4 Carpentry work (support for materials)	4.1 Specification of groups 4.2 Making an application to the government for required tools	Aldeia Chief, group leader	2010	4
(B: Field of health)				
1 Installation of baths and toilets	1.1 Aldeia meetings 1.2 Preparation of installation site, materials, and laborers 1.3 Aldeia meetings 1.4 Preparation of an application concerning provision of materials for household toilets to the NGO (International Organization for Migration (IOM))	Aldeia Chief, youth group leader, engineer	2010–2011	1
(C: Field of agriculture)				
1 Rehabilitation of irrigation canals	1.1 Aldeia meetings 1.2 Preparation of an application concerning provision of materials required (cement, iron rods, shovels, hoes, stones, sand)	Aldeia Chief, construction group leader, JIRCAS	2009	1

2 Study and training on the making of organic fertilizers and pesticides	2.1 Selection of a training instructor 2.2 Specification and preparation of materials required to make organic fertilizers (leaves of trees, buffalo dung, etc.) 2.3 Formation of groups in line with training 2.4 Construction of collaborative relation with extension workers	Leader of MAF's extension workers, Aldeia Chief	2009	4
3 Technical training on fishing and how to use fishing tools	3.1 Selection of an instructor in technical training for fishery 3.2 Contact and coordination with a person in charge of fishery in the government 3.3 Request for materials required for fishery	Construction group, Aldeia Chief	2010	5
4 Training on selection and conservation of seeds of native species	4.1 Request for training 4.2 Preparation of seeds 4.3 Selection of seeds and conservation site	Leader of MAF's extension workers	2010	6
5 Coordination between forestry and fishery (Restriction on timber-felling and use of explosives)	5.1 Coordination among Suco Chief, Aldeia Chief, forest management leader, and residents in the Aldeia	Aldeia Chief, forest management leader, group leader	2009	3
6 Training on plowing with buffaloes	6.1 Aldeia meetings 6.2 Preparation of an application 6.3 Request for support from the government	Aldeia Chief, engineer leader	2009	2
(D: Field of education)				
1 Installation of an athletic ground and enlightenment of workers	1.1 Holding of a meeting and determination of the date of work 1.2 Enlightenment of young people on participation in works 1.3 Making an application to the government (the Secretary of State for Youth and Sports)	Youth group leader of the Suco, youth group leader of the Aldeia	2010–2011	1



Explanation of purpose of the W/S



Clarify problems

Column 4: Experiences on participation in making an Aldeia development plan

Participation in rural development planning began to be held on 11.11.2008 and continued till this moment, we shared our experiences during the JIRCAS and HABURAS where we get a lot of good information, at our meeting was how to create a development plan countryside, then we also inform you that in our society there are many problems that we face such as:

- a. Infrastructure
- b. Health
- c. Agriculture
- d. Education

at that time we raised the matter of agriculture, because JIRCAS also help and teach us how to make traditional irrigation channels though (the soil above the ground) also helped to teach us about how the use and cultivation of paddy Nakroma the ICM system, we also compare better when grown in appeals of local rice but we face the problem of paddy rice we like:

- Pests eat rice
- Do not use fertilizer

and did not notice JIRCAS proficiency level in these issues that have occurred in rice and rice field camp. But JIRCAS and GTZ taught techniques to solve these issues to us after they occurred,

According to my observations I observed some activities of JIRCAS in the Bucoli Village very good because the local staff to accompany and remain with us, and we hope that little by little would change our farm life through what has been taught by JIRCAS to us.

Written by: Ms. Sabina dos Reis (Lulihene Aldeia in Bucoli Suco)

{ DO }

Chapter 6 Let's use all available resources and support programs for revitalizing rural community!

(Method to facilitate farmer participation and that to utilize internal and external resources)

{Facilitating farmer participation is included in each support program and utilizing internal resources is included in the utilization of PRA. External resources are utilized as needed.}

The available major resources and support programs are as follows:

1. Active participation of farmers in some support activities (see 6.1 below)
2. Socioeconomic capital inside the village (see 6.2 below)
3. Support programs from outside (see 6.3 below)

6.1 Method to facilitate farmer participation

(1) Farmer participation in the support for rehabilitation of irrigation canals

The active participation of farmers is indispensable to revitalize rural communities, but it is not easy to enhance farmers' motivation for their participation.

The following measures were taken in the JIRCAS-led support to rehabilitate irrigation canals. As irrigation canals are not owned by one farmer but basically shared by all farmers, the community, instead of one farmer, should address the rehabilitation work. Before addressing the rehabilitation work, the community members should share information on rehabilitation, such as what canals should be rehabilitated, by how many kilo-meter canals should be rehabilitated, who should participate in the work, and what work should be conducted. Farmers who take part in the work can be more motivated and responsible for the implementation of the work by sharing information. In addition, they can strengthen their sense of community by selecting a leader from participating farmers themselves. It is advisable that selection of farmer leader from participants is by themselves in a democratic manner through discussions instead of asking them to use the top-down approach.

In the case of teaching the rehabilitation work of irrigation canals, it is necessary to get all participating members to understand completely what they are instructed to do, not to mention that it is vital to give instructions to each member independently. At the same time, it is advisable for participants to understand the work scope and role division of the day. The following table summarizes these points.

	Before the work	After the work
Major content of the meeting	- Mark the absence of the work members - Confirm the work scope - Confirm the role division	- Confirm the points of the renovation method - Confirm the work scope completed



Leader of the work group holds a meeting before the work



Group leader marks the absence

On-the-job training is the appropriate way to educate the leader of the work group. It is advisable for extension worker to first show the leader what they should do and later, support him/her so that he/she can take the initiative.

(2) Farmer participation in the improvement of the farming technique

Improving the farming technique greatly depends on whether farmers wish to improve it and whether they are interested in improving it. In the case of introducing the ICM method (see 6.3(1) below), many farmers are interested in the ICM method and wish to increase rice yield using this method.

In the first place, it is advisable to hold a meeting for an Aldeia or a certain number of farmers to explain the ICM method. Because GTZ takes the initiative in spreading the ICM method in accordance with MAF's policy, the explanatory meeting is held under GTZ's initiative.

It is necessary to explain the needs of the community about ICM method to GTZ officials in the area and let them explain the ICM method.

For this purpose, it is vital to constantly watch the needs of the community.

6.2 Method to utilize internal resources

It is important to confirm and utilize effectively resources available locally for efficient and effective implementation of farming and farm village development activities. Of all the resources available inside the village, farm families in general know well about human resources like elders and collaborators, material resources like production infrastructure, and natural resources like farmlands and water sources, and it is possible to collect such information from them by conducting baseline surveys and dialogues with them.

The procedure that JIRCAS used to draw the "Venn diagram" and make the "seasonal calendar," both of which are effective to understand the social resources available inside the village, and the results achieved by JIRCAS are described below.

(1) Set the seasonal calendar

Setting the seasonal calendar is an activity closely related to the lives of farmers, and group discussions rarely produce a great difference. It is an activity that is easy to address because even during work for the final version, the discussion rarely becomes complicated. In the course of setting the seasonal calendar,

letting the participants discuss social norms like “tara bandu” besides agricultural work is helpful to clarify social resources.

Procedure of the workshop to set the seasonal calendar													
Divide the participants into groups of about 10 people each and conduct the workshop in accordance with the following order.													
<ol style="list-style-type: none"> 1. Explain how to proceed with the work 2. Group the participants and appoint the presenter 3. Clarify jobs that need much time 4. Confirm the period of agricultural work 5. Set the agriculture calendar 6. Group presentation 7. Final confirmation and opinion exchange 													
Completed seasonal calendar													
Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Mow; burn the mown grass										×			
Seed the corns											×		
Manage cornfields												×	
Prepare rice paddies	×	×											
Prepare seed paddy	×	×											
Transplant seedlings from nursery field to rice field			×	×									
Harvest corns				×	×								
Manage paddy fields (weeding)			×										
Manage paddy fields (insect damage and pest control)					×								
Harvest rice						×	×	×					
Fish (bad season)	×	×	×			×	×	×					×
Fish (good season)				×	×				×	×	×		
Application period of tara bandu	×	×	×	×	×	×	×						×
Collect candlenuts								×	×	×	×		
Prepare land for vegetable fields				×									
Grow vegetables (onion, tomato, and chili)					×	×	×	×					
Harvest vegetables				(Vegetable)		×		×	(Onion)				



Setting of the seasonal calendar as the group activity

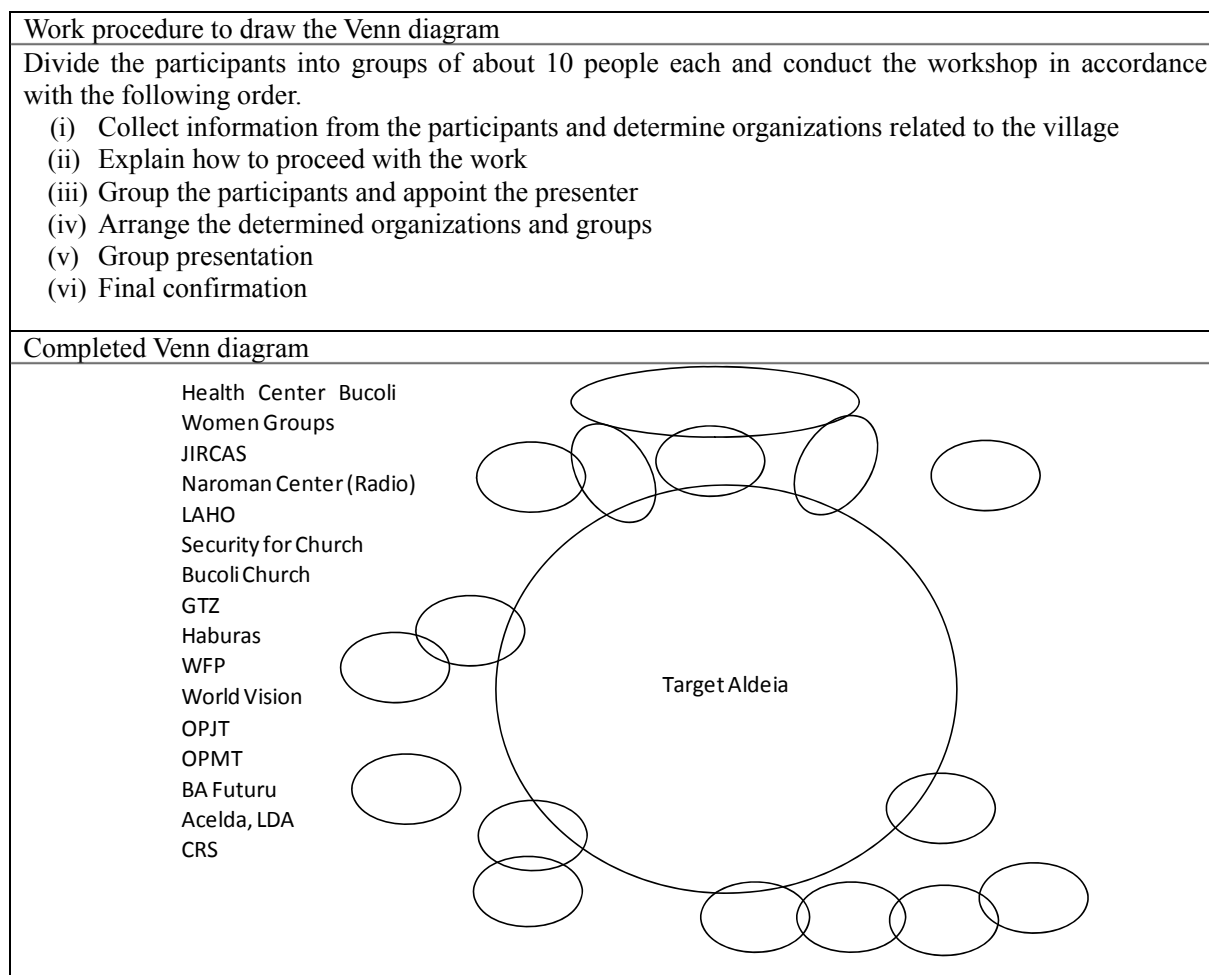


Exhibit the Venn diagram and exchange opinions

(2) Draw the Venn diagram

Although it takes time to determine the related organizations, groups mostly share the same related organizations. It is advisable to stimulate active discussions because opinions on setting the position vary with the group.

Drawing a chart of the collaboration activities between the administrative organization and the local community is an effective means for a clear understanding of social resources inside the village.



6.3 Method to utilize external resources

The village support programs organized by the local administration and support agencies are important as resources available outside the village. This is why (1) effectiveness of MAF's support programs and (5) potential of collaboration with other donors and NGOs are discussed as the selection criteria for a pilot village (see Chapter 1). In "Making an Aldeia development plan" (Chapters 4 and 5), a list of utilizable support programs is made for consideration.

Extension workers should naturally behave keeping in mind the needs (activities) strongly required by farmers and means to satisfy them, and people concerned with the needs (activities). At the same time, it is advisable that extension worker ideally know specifically how many households will benefit from the activities and how the situation of beneficiaries and their surrounding will be expected to change between before activities and after activities. This is the information that external supporters (administration and support agencies) wish to know. In most forms of support provided by external organizations, the external supporter examines a proposal submitted by the people who need support and decides whether or not to provide the requested support.

Every form of external support is temporal, and after implementation period, the supported organization will take over the support and keep it running. Lately, external supporters have insisted on the continuance of the support after it ends. In some cases, it is mandatory to specify in the proposal as to who succeeds the support and how he/she continues it. For example, hand tractors stop functioning if neither maintenance cost nor technology for maintenance and repair work is secured. The provided hand tractors would be out of order in a few years.

Because an extension worker has much difficulty in obtaining information on external supporters independently, it is advisable for him/her to get it through communications with other extension workers and officials of the District Agriculture Office. At the same time, the District Agriculture Office should actively provide extension workers with useful information.

Table 6.1 Agriculture and rural community support programs by the administration

Agency	Content of major support programs	Reference
Ministry of Agriculture and Fisheries		
Microfinance Institution of Timor-Leste (IMFTL)	Microfinance for agriculture Maximum of US\$1,000, for less than 9 months, at the rate of 16% per annum	
The Secretariat of State for Vocational Training and Employment (SSVTE)	Training for agribusiness and fishery-related (construction of boats, etc.) business, Youth Employment Promotion Programme (YEP)	
Ministry of Industry (MoI)	Construction of roads to rural communities, supply of power and water	

Table 6.2 Community support programs by support organizations

Support organization	Content of major support programs	Reference
WFP	Food for Asset Programme Supplying foods and improving rural infrastructure	
GTZ	Spread of the ICM method	
JICA	One village One Product Program Support for agriculture mechanization	JICA office
Seeds of Life, World Bank, Food and Agriculture Organization (FAO)IOM		




The following two programs are examples of the community support programs provided by support agencies.

1. ICM provided by GTZ
2. FFW provided by WFP

(1) ICM

1) The ICM method is the improved version of the traditional cultivation method. The Ministry of Agriculture and Fisheries introduced it and currently promotes it in collaboration with GTZ of Germany. It is not a special technology package. It differs from the traditional cultivation method in the following aspects.

Table 6.3 Difference between the traditional cultivation method and the ICM method

	Traditional cultivation method	ICM method
Prepare the farm field	The field is hardly leveled.	Make the field as flat as possible.
Variety of rice	Use the local variety.	Use the improved variety.
Raise seedling and transplant	Mainly direct-seeding	Use palm leaves as the pedestal and divide the pedestal into pieces after germination. Transport each pedestal with seedlings to the target paddy field. Plant the seedlings one by one using the regular planting method.
		 
		Photo by GTZ
Weeding	Weeding is hardly practiced.	Practice weeding 15 days and 25 days after transplanting and, if necessary, 35 days after transplanting.
Fertilizer	Only grazing of livestock in noncultivation season	Use organic and chemical fertilizers as needed (if possible).
Pesticide	No pesticide is used.	Use pesticide as needed (if possible).
Weeder	No weed-eater is used.	Use weeder as needed. GTZ sometimes lends one.

GTZ provides field training at an appropriate time in the following cultivation stages.

- Build nursery bed
- Transplant
- Weed
- Insect pest control
- Harvest

GTZ exchanges a memorandum with farmers before teaching the ICM method. This is to clarify the roles and responsibilities of each party, and the following subjects are mentioned in the memorandum.

<p>What farmers should do</p> <ul style="list-style-type: none"> - Make land preparation. - Build nursery beds. - Check the nursery beds 14 days later and transplant them if three or four leaves have grown on them. - Manage rice through water management, weeding, and spreading of organic fertilizers and pesticide. - Work in the appropriate season as instructed.
<p>What GTZ should do</p> <ul style="list-style-type: none"> - Provide technology involved in the ICM method for free. - Lend money as needed (for the purchase of fertilizers and payment of the rental fee of hand tractors). - Teach subjects involved in marketing (teaching costs 0.3 dollars).

Of the above jobs, weeding is very important. Pests damage rice if weeds flourish. Weeding as frequently as possible to prevent them from flourishing allows for steady growth of rice and good harvest. It is necessary to visit the paddy fields and confirm whether weeding is executed properly twice a week in the weeding season. If weeding isn't done adequately, extension worker should give instructions to farmers.

(2) FFW

1) What is FFW?

FFW is one of the food support schemes implemented by the WFP. It is the support activities to distribute foods in exchange for the labor provided to execute such infrastructure improvement work as irrigation work, road improvement, and farmland development.

The FFW has not yet been implemented in Timor-Leste in 2010 except just one case, Baucau district.

2) Implementation period of FFW

FFW is implemented for the 6-month period between September and February when many farmers household face food shortage. (FFW is 6 months long at the longest.) Preparations start in June, and it takes 2–3 months to perform such jobs as selection of the scheme and participants, field survey, measurement, and calculation of workload. FFW is implemented in this period because farmers suffer from the most acute shortage in food supply between September and February.

3) Practicable activities by FFW

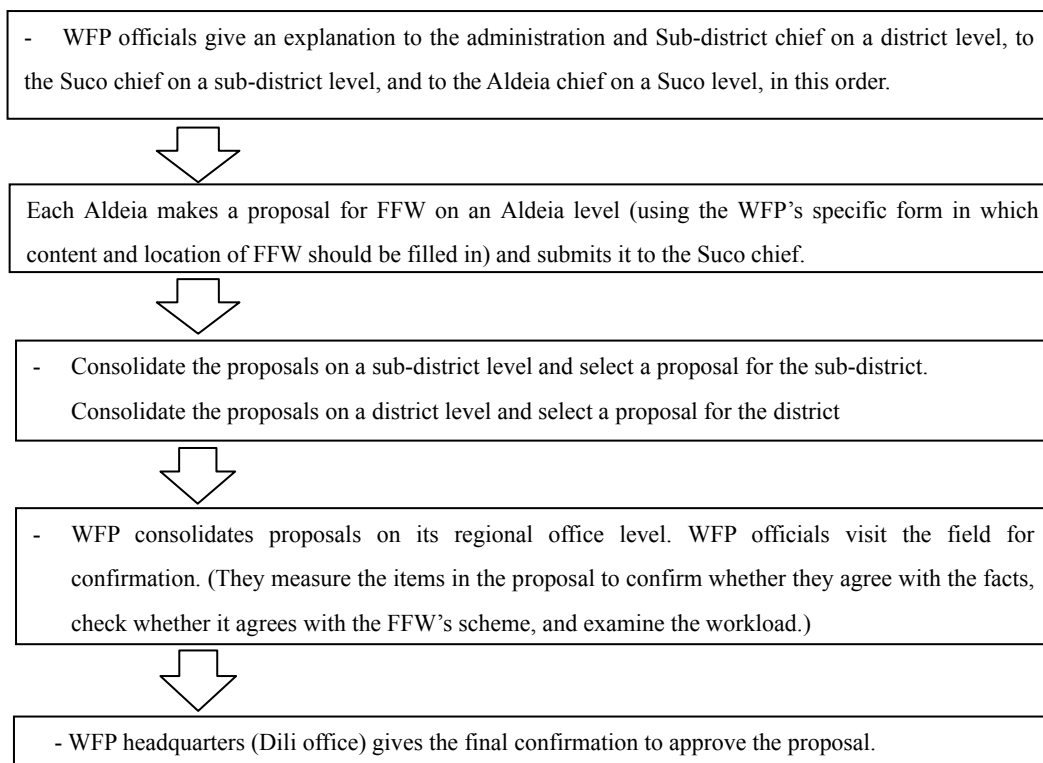
- Constructing, improving, and cleaning of roads
- Constructing and rehabilitating of irrigation canals
- Land reclamation
- Fencing (to protect farm products from animals)
- Building storage reservoirs (fisheries, etc.)
- Rehabilitating of water supply systems

4) Foods supplied by FFW

Each participant gets 60 kg of rice, 15 kg of beans, and 3.75 kg of cooking oil in exchange for 1 month's activities.

5) Procedure before implementing FFW

The procedure before implementing FFW is as follows:



A proposal judged as appropriate for implementation by the headquarters is transferred to the regional office. With receipt of the affirmative judgment, FFW is qualified to implement the proposal and required to inform the Aldeia immediately that it has officially been allowed to implement the proposal.

At the same time, WFP distributes the form to make a list of participants. The Aldeia needs to submit the list of participants to WFP to implement FFW.

Because WFP usually starts to accept applications around September, it is necessary to submit a proposal around July to clear the above procedure.

The following are the most important points to utilize FFW.

- Extension workers need to understand the FFW scheme completely.
- Extension worker explain fully the scheme to inhabitants and make them understand it completely.
- Extension workers adequately make arrangements with the FFW officials of the WFP regional office.

Column 5: Good case of facilitating farmer participation and gaining access to external resources

In connection with the work Extension, me as the field extension staff, is responsible in the village of Bucoli, hoping that: Farmers with a conscience to maintain existing knowledge to strengthen their activities in rural areas.

Rehabilitation irrigation and ICM systems implemented by JIRCAS, gave a good profit for farmers in the village of Bucoli, especially in Aldeia: Uaisemo, Lulihene, Macadai de Baixo, these activities are done so very well for working with local leaders, farmers, and MAP staff (Extension).

Among my observations briefly, and with all due respect I do not forget to say thank you to JIRCAS.

Written by: Mr. Domingos Jose Freitas (former Extensionista in charge of Bucoli Suco, MAF)

{ DO }

Chapter 7 Let's implement support activities for vitalizing rural community!

{The estimated time required for the support to improve the infrastructure of farming villages is 3–5 months, and that required for the support to improve the farming technique is about 8 months. However, each of them is subject to the size of the support.}

7.1 An example of the development of rural infrastructure

(1) Support to rehabilitate irrigation canals

The shape of an irrigation canal varies with the topographical condition. Irrigation canals are divided into two kinds. One is a canal to collect water from big- to medium-sized rivers in the relatively flat terrain, and the other is a canal to collect water from small rivers or springs. In the case of big- to medium-sized rivers, irrigation canals are constructed or rehabilitated by MAF projects. In MAF projects, irrigation canals lined by concrete or a structure, such as gate and diversion work, are constructed.

MAF does not conduct a project to collect water from small rivers and springs. In this case, farmers need to renovate irrigation canals by themselves.



Example of the present condition of a water resource



Example of the present condition of a water channel

The following case concerns an existing earth canal that farmers rehabilitated by themselves. Farmers are supplied with foods by WFP if they utilize FFW, which is WFP's existing support scheme.

Farmers can rehabilitate earth canals using their own tools. The work can roughly be divided into three stages.

Table 7.1 Three major stages of the work

	Work stage	Major operation
(i)	Mow	Mow grass and trees in the existing earth canal.
(ii)	Excavate the canal	Excavate and broaden the canal.
(iii)	Heighten the dike of the canal	Heighten and broaden the dike of the canal.



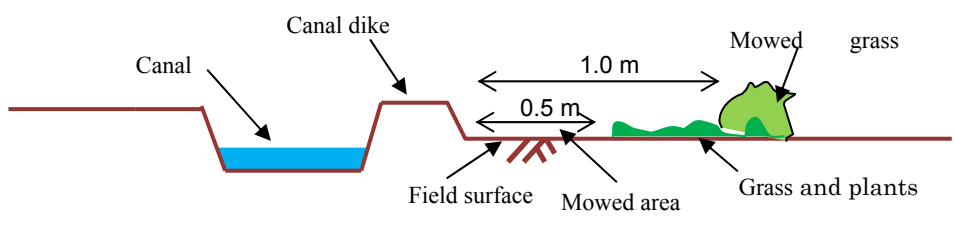

Mowing in the field



Excavating a canal

The following table shows the points to note and to instruct in each stage of the work.

Table 7.2 Work division and points for each work division

	Work division	Work method
(i)	Mow	<p>Mowing should precede excavating the canal and heightening the dike to facilitate these two operations. Mow grass and plants in the area about 0.5 m from the canal dike on both sides of the canal.</p> <p>< Points ></p> <p>Mowed grass and plants should not be put by the canal but on an area more than 1 m away from the canal. If possible, they should be on the valley side of the canal. This makes subsequent excavation very easy and prevents mowed grass and plants from being washed out when rainwater flows into the canal.</p> <p>At the same time, mowing allows for efficient earthwork (cut earth from the paddy field) and diking.</p> 
(ii)	Excavate the canal	<p>Excavate the shallow part and narrow part. Fragment rocks as needed. Pile the excavated soil and rocks on the canal dike.</p>  <p>Canal that was uniformly renovated</p>

		<p>< Points > Make a marking and excavate to make the section as even as possible. Make the mark using a local tree.</p> <div data-bbox="395 306 890 674" data-label="Image"> </div> <p>Excavate with the mark to show the canal</p> <div data-bbox="922 329 1382 674" data-label="Image"> </div> <p>Mark (An H-shape mark made of wood and string)</p>
(iii)	Heighten the dike of the canal	<p>If the canal dike is not height enough and not wide enough, put the soil produced by the excavation on the existing dike to make it higher and wider.</p> <p>< Points > Compaction is very important to mound on the existing dike. Using tools is advisable to compact the soil efficiently instead of tapping it and subsequently treading it. Tools can be made of wood available locally. Compact the soil more than five times by using the tools. It is possible to make a tool using a coconut tree.</p> <div data-bbox="411 1099 896 1469" data-label="Image"> </div> <p>Farmers compact using tools they made by themselves.</p> <div data-bbox="959 1099 1426 1469" data-label="Image"> </div> <p>Farmers get rid of the roots of big grass and plants from the soil piled up by the canal dike.</p> <p>Get rid of tall grass and plants if they exist in the soil piled up by the canal dike because soil that contains grass and plants is difficult to compact.</p> <div data-bbox="927 1592 1417 1957" data-label="Image"> </div> <p>Tool for compaction that farmers made using a coconut tree</p>

The following are pictures of the canal taken before and after the rehabilitation was carried out taking into consideration in the above points.



➡ Shows the direction of water flow

Other measures such as protection by vegetation or sandbags are available to protect the slope of the dike.

The following figure shows an example of the standard section.

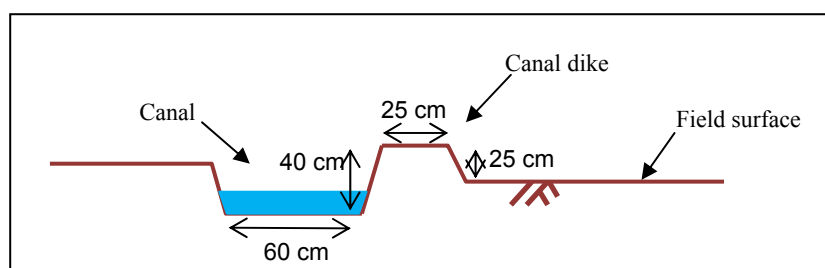


Figure 7.1 Standard section of a canal

(2) Support to make a maintenance plan for the irrigation canal

Even if irrigation canals are renovated by FFW and rice cultivation starts using the ICM method, the effect of the renovation is temporary without proper maintenance of waterways and proper utilization of irrigation water. In addition, the understanding and cooperation of villagers are indispensable for the activities for renovation, and villagers are required to take the initiative in joint utilization and maintenance of irrigation canals.

To make a maintenance plan for the irrigation facilities, JIRCAS and MAF jointly (1) comprehended the water utilization and organized problems and improvement plans, (2) formulated rules to utilize irrigation canals and made a maintenance plan by group activities, and (3) built the diversion gate, which is made of materials easily available locally and has an easily maintainable structure.

As the following cases show, the above processes (1) helped villagers nurture the shared awareness of the fair and systematic distribution method of irrigation water and (2) motivated villagers to maintain facilities positively as the users of water.

1) Comprehend the reality of water utilization inside the village and organize problems and improvement plans

First, problems were organized based on the knowledge obtained through dialogues with the Aldeia

Chief and key informants like the water manager.

- It is not made clear who renovates the canal when livestock destroy the renovated canal.
- The water manager takes the initiative, but inhabitants are passive because they just perform their roles since nonperformance is subject to penalty.
- The traditional method to block the weir using soil and gravels does not satisfy the water sharing function because it easily allows for water leakage and washout.

The following improvement measures were devised for the above problems.

- Formulate rules on the maintenance of irrigation facilities and let inhabitants of the Aldeia share common understanding.
- Inhabitants are required to get involved positively in the maintenance of irrigation facilities as the users.
- Introduce a structure for water sharing that is constructed with locally available materials and easy to maintain.

2) Activities to make the maintenance plan of irrigation facilities

(1) Formulate rules on utilizing irrigation facilities on an Aldeia level

Based on the above considerations, JIRCAS and MAF had many discussions with the Aldeia Chief and the water manager and formulated the “Rules on Utilizing Irrigation Facilities on an Aldeia Basis,” which incorporated their opinions and suggestions as much as possible. The rules stipulate the maintenance of irrigation canals, setting of the irrigation period for each crop (rice, corn, and vegetables), collection of water charge, and penalty. Of these items, inhabitants have traditionally been working on the maintenance of irrigation canals, setting of the irrigation period for each crop, and collection of water charge. The penalty was added to the rules through discussions with inhabitants. Rules were written in Tetun, and the Aldeia Chief and the water manager confirmed the content and signed them in agreement.



Aldeia Chief (second from the left) explains the rules on utilizing irrigation facilities.

Rules on Utilizing Irrigation Facilities on an Aldeia Basis (tentative translation)

Policy for formulating the rules

- The rules should be fair, transparent, and easily understandable.
- The rules specify the role and responsibility of inhabitants and Kab-uai, who is the water manager in the Aldeia.
- The rules comprise the following four items.

1. Maintenance of irrigation canals

When an irrigation canal is destroyed for whatever reason, the farm family that uses it for its paddy field needs to repair it. Kab-uai confirms whether the canal was repaired.

2. Irrigation period by crop

Irrigation water should be supplied to the following crops according to the specific period.

- Rice: about 6 months between January and June
- Corn and vegetables: about 5 months between August to December

Kab-uai is responsible for the change, and no women are allowed to manage irrigation water.

3. Collection of water charge

Water charge is not paid in cash. Farm families are allowed to pay by sheep, chickens, rice, and alcohol beverage. Kab-uai collects water charges and provides them to be used in a traditional practice performed once a year in the Aldeia to do such work as cleaning the canal for smooth water utilization.

4. Penalty

No farm family is allowed to change the flow of irrigation water on purpose or in secret. If Kab-uai finds a violation, he/she can impose a fine of 100 dollars on the violator. Should the violator be unable to pay the 100 dollars, Kab-uai can stop supplying the irrigation water to him.

If the irrigation canal is destroyed by livestock and is not repaired, Kab-uai can impose a fine of 100 dollars on the farm family to which the livestock belong. Should the farm family be unable to pay the 100 dollars, the livestock will be slaughtered.

(2) Maintenance plan for the irrigation canal by group

If the irrigation canal is damaged by a natural disaster like cataract and no one can handle the damage independently, a group is responsible for the maintenance. Inhabitants are required to participate actively in the maintenance as the users.

JIRCAS and MAF made the “Maintenance Plan for Irrigation Canal by Group” through discussions with the Aldeia Chief and the water manger, which is the same method used to formulate the “Rules on Utilizing Irrigation Facilities on an Aldeia Basis.”

The plan stipulates, in Tetun, (1) the leader and farmers who take charge of the maintenance of each canal in Lulihene Aldeia, (2) means of communications when irrigation canals are destroyed, and (3) obligations and rights (planned) of the water manager who provides irrigation water and farmers who use irrigation water.

The above rules and the maintenance plan for the irrigation canal based on group activity are not



Discussion between the Aldeia Chief, water manager, JIRCAS official, and MAF official to make a maintenance plan of irrigation canals

designed for the Aldeia alone, and they can be applied to the Suco that is one level above the Aldeia level. The Aldeia Chief explained them to inhabitants in the Suco meeting, and they are used as the unified rules in the Suco.

(3) Build an easily maintainable diversion gate

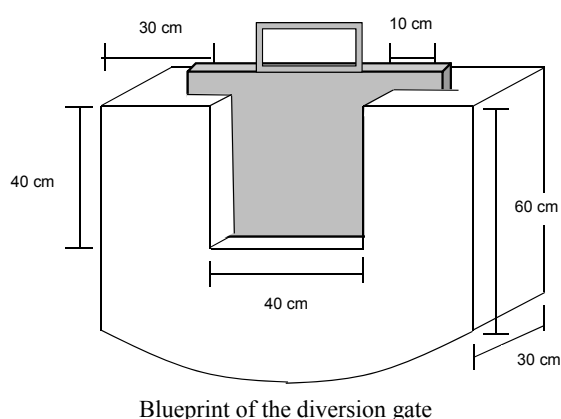
As a result of discussions between the JIRCAS official, MAF official, Aldeia Chief, and water manager, it was decided to install the diversion gate in the diverging point where water leakage and washout occur frequently. The diverging point is located near the spring most important for the Aldeia.

The diversion gate is a small concrete structure because it needs to prevent water leakage besides being hard to be washed out. In addition, it should be made of materials locally available and easily maintainable. The figure on the left-hand side below shows the blueprint of the diversion gate. It is the standard model widely used in the farming area in Timor-Leste.

Aldeia inhabitants built the diversion gate using materials, such as concrete and sands, supplied by JIRCAS. A total of eight farmers participated in the work, and two of them were experienced in building concrete structures.

The JIRCAS official and the MAF official jointly explained the structure and implementation procedure to the skilled people using the blueprint and taught the mix ratio of cement and sand in the field.

For reference, the material cost per diversion gate was US\$6.5 for cement, US\$4.0 for sand, and US\$2.5 for wood (used for the sliding door and formworks), making a total of US\$13.0.



Aldeia inhabitants build the diversion gate under the guidance of JIRCAS and MAF officials

Background

Upon regaining its independence in 2002, Timor-Leste faced numerous challenges. Foremost amongst these were achieving political stability and improving the living conditions of the population. One of the most important aspects of poverty in the country is the widespread food insecurity and chronic malnutrition. Improved food security and nutrition have therefore been at the top of the economic and indeed political agenda of the Government. One of the means to achieve improved food security is to increase production and productivity by better land utilization and linking communities with outside markets. The United Nations World Food Programme has supported the most food insecure communities of various districts in creating productive agricultural and other rural assets through the so-called food for work modality: in exchange of a nutritious daily family ration of mixed food commodities, people work on the rehabilitation or creation of assets such as roads and irrigation canals. That way, their immediate food security is enhanced through the rations, but more importantly, the longer term food security of the community is improved thanks to the asset thus created.

In order to make technically sound and sustainable Food for Assets projects, WFP was seeking the help of like minded and experienced partners. The Japan Green Resources Agency (J-Green) / Japan International Research for Agricultural Science (JIRCAS), approached WFP Timor-Leste in 2007, offering its technical expertise in agricultural and irrigation techniques. Based on its feasibility study in 2007, JIRCAS started providing technical assistance to MAF (Ministry of Agriculture, and Fisheries) of Timor-Leste in 2008. It drew a 3-year implementation plan from April 2008 to March 2011. The cooperation with WFP in 3 FFW/A irrigation projects in Uaisemu, Lulihene, Macadai-de-Baixo aldeias under Bucoli suco of Baucau district—was a part of the implementation plan, and as a result, two irrigation canals were completed and a third one is in process.

It was a pilot programme but methods were used differently in an integrated way. To drive the programme, a steering committee was formed among four agencies; JIRCAS, MAF, WFP and GTZ. Each agency has played a specific role: MAF had taken responsibility to select communities and NGOs, whereas GTZ was responsible to teach communities improved paddy cultivation methods. JIRCAS handled technical aspects to construct the irrigation canal and WFP provided food to the project's beneficiaries.

Effects of integration

1. Perhaps it was a first time that the Uaisemu and Lulihene, villagers united together and discussed the root causes of the low production, identified resources and developed tools and techniques using locally available materials especially in Lulihene. Participatory methods were applied by JIRCAS which created a platform for villagers for the discussion.

2. The participatory research model motivated villagers to be mentally, physically, resourcefully involved during the life cycle of the irrigation project. Villagers felt ownership because the canal was rehabilitated with familiar methods in all aspects of the work.

3. Area selection, baseline survey, PRA, irrigation facilities, farming technologies, extension mechanism were conducted in a very participatory manner. In this exercise, community preparation was time consuming but it was essential to make the project sustainable. Targeted households got involved in assessing of needs, and in identifying locally available skills and resources. They also participated in the planning, implementation and evaluation of the activities. The whole exercise has increased confidence among people and increased a sense of ownership with regards to the community assets

4 In Lulihene, before rehabilitation of the irrigation canal, only 43 hectares of land were

irrigate, and even they did not have regular flow of water. But now 130 hectares are irrigated by a 3 km canal, and used for paddy. It benefits more than 114 households (appr 600 people).

5. After constructing the canal, GTZ demonstrated methods of paddy cultivation in all its stages, from seed selection, through transplanting, and weeding, to harvesting and threshing. This constituted a practical learning exercise for farmers.

6. Subsequently, the farmers of Uaisemu shared their experience with the farmers of Lulihene. In the next step, Lulihene farmers will share their experience with the Macadai-de-Baixo community where the next activity under this cooperation project will be implemented.

Integration and partnership have once again proven essential for community development. WFP is pleased to be a partner of three different agencies with the common goal of improved food security.

Written by: Mr. Madhav Prasad Shivakoti (Head of Baucau Sub Office, WFP)

7.2 An example of the improvement of the farming technique

Because many rural communities produce rice, it is an effective measure to increase the productivity of rice production and stabilize food supply for the revitalization of rural communities.

GTZ Timor-Leste implements the ICM method to increase the productivity of rice production under MAF's leadership. The following case shows how to introduce the ICM method as a support to improve the farming technique and make it acceptable to rural communities.

(1) What is the ICM method?

The ICM method is a farming method that allows for efficient and effective cultivation by improving the traditional method to increase rice yield, improve the quality of rice, and reduce equipment and materials needed for rice production. Please see Table 6.3 in 6.3(1) above for the difference between the traditional cultivation method and the ICM method.

(2) How to introduce the ICM method

The following steps should be followed to introduce the ICM method.

(i) Explain the ICM method

(ii) Conclude the memorandum on the introduction of the ICM method

(iii) Start to introduce the ICM method

Because the above steps should be executed under the leadership of the local GTZ officials, it is vital to collaborate and keep close communications with them.

(3) Procedure to introduce the ICM method

The procedure to introduce the ICM method is as follows.

(i) Explain the ICM method

It is necessary first to know whether the Aldeia or Suco wishes to introduce the ICM method, whether it has problems with the traditional cultivation method, and whether it is satisfied with the rice yield. It is advisable to ask the Aldeia or Suco with the above information whether it wishes to improve the current cultivation method.

Each regional GTZ office has officials in charge of ICM introduction, and each of them is assigned his/her Aldeia or Suco for ICM introduction. It is necessary to hold a meeting to explain the ICM method in communication with the GTZ officials. Target farmers are those planning to introduce the ICM method and those interested in the ICM method.

In the explanatory meeting, farmers get a concrete explanation on what the ICM method is, what the difference between the traditional cultivation method and the ICM method is, and what work they should do. The explanatory meeting has a question-and-answer session, and GTZ officials answer the questions and listen to opinions from the farmers and discuss with them until they get complete understanding of the ICM method.



A GTZ staff member explains the ICM method.

(ii) Conclude the memorandum on the introduction of the ICM method

The form of the memorandum is distributed among participants at the conclusion of the meeting. The memorandum mentions what both farmers and GTZ should do as shown below (see 6.3(1) above).

Farmers should sign the memorandum if they agree with it on the roles mentioned and implementation of the ICM method as they were informed in the explanatory meeting. The Aldeia Chief confirms the memorandum signed by farmers, adds his/her signature to each memorandum, and submits the memorandums bearing farmers' signatures and the Aldeia Chief's signature to GTZ.

(iii). Start to introduce the ICM method

The memorandum is concluded when the GTZ official signs the memorandum he/she receives from the Aldeia Chief. With the conclusion of the memorandum, GTZ starts to give necessary training to the Aldeia or Suco inhabitants. The following chart illustrates the flow up to the start of the ICM method.

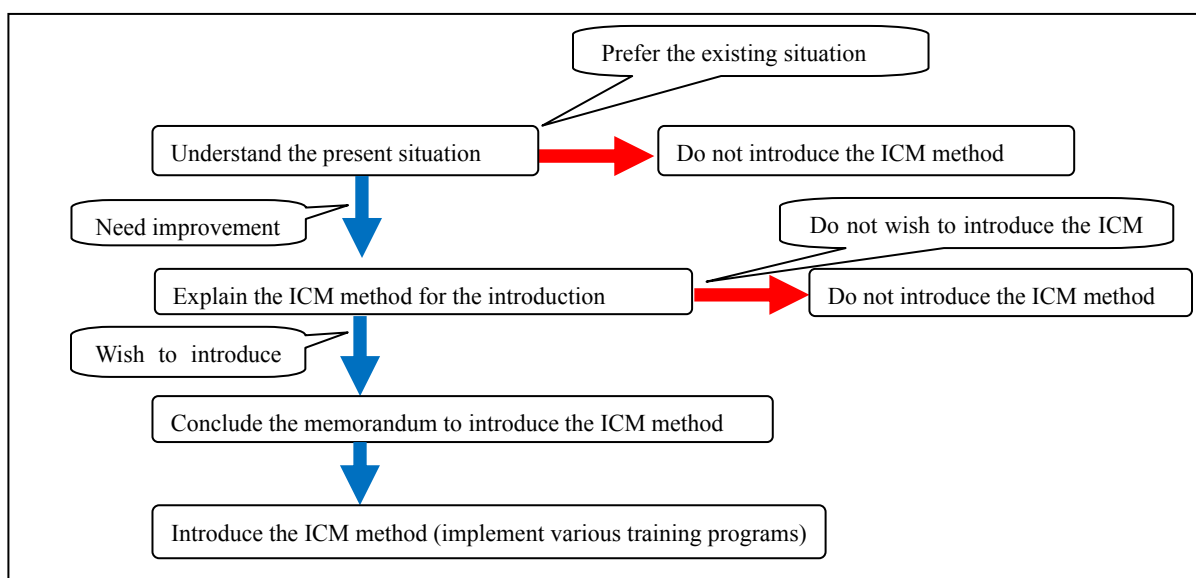


Figure 7.2 Flow up to the introduction of the ICM method

(4) Implement the ICM method

In the ICM method, training necessary in each stage is given to farmers. They are required to implement what they learned in the training in their paddy fields.

The five basic training programs are as follows:

- (i) Training on making nursery beds
- (ii) Training on transplanting
- (iii) Training on weeding
- (iv) Training on pest control
- (v) Training on harvesting (evaluation)

GTZ officials mainly give the above training programs. The training schedule is set through discussions between the Aldeia Chief, farmers, and GTZ officials.

Weeding is one of the most important duties mentioned above. Unless eradicated completely, weeds produce pests and affect decreasing crop yield directly. Weeding is hard work in the traditional cultivation method, but it is easy in the ICM method because the ICM method uses regular planting. The following pictures show the comparison between weeding in the traditional cultivation method and that in the ICM method.

Paddy field where the traditional cultivation method is used



Weeds flourish because no weeding is given (direct seeding)

Paddy field where the ICM method is used



Weeding is easy because regular planting is used

(5) Results of the introduction of the ICM method

In the ICM method, GTZ officials evaluate the results of the paddy fields where the ICM method was introduced and ones where the ICM method was not introduced after harvesting. The evaluation is made through a workshop of local farmers (Farmers Field Day), whose participants comprise farmers, people concerned with Aldeia and Suco, and officials of the District Agriculture Office.

The following case shows the farmers Field Day was held by JIRCAS, and it was attended by the Suco Chief, Aldeia Chief, farmers who introduced the ICM method, farmers who plan to introduce the ICM method, officials in charge of irrigation of the District Agriculture Office, and extension workers in charge of the sub-district. The ICM method was introduced to three paddy fields for a total area of 530.4 m². The irrigation canal for these paddy fields was rehabilitated in the previous year.



A GTZ official evaluates the results achieved by the ICM method on a Farmers Field Day



Participants of a Farmers Field Day have a discussion

The traditional method produced rice at the rate of 1.1 ton/ha, but the ICM method allowed the three paddy fields to produce 120 kg of rice at the rate of 2.3 ton/ha.

The following three measures are supposed to have been helpful to double the rate.

- The irrigation canal was rehabilitated in the previous year. The rehabilitated canal made it possible to secure irrigation water when it was needed.
- Paddy fields were prepared for rice planting more elaborately than usual.
- Because regular planting was adopted, weeding became easier.

Present situation:

The Japan International Research Center for Agricultural Sciences (JIRCAS) approached the Rural Development Project (RDP) managed by GTZ to cooperate in a research program in Bucoli village in three locations (Uaisemu, Lulihene and Macadai-de-Baixo) in January 2009. From the Ministry of Agriculture the directorates of Irrigation, Crop production and Extension are involved. WFP is providing rice as initiative (Food for Work) to farmers who are joining in the program.

The goal of the JIRCAS Research:

Demonstrating and analyzing the use of local materials in the design, construction and operation of irrigation systems for paddy fields.

The contributions of the involved partners:

JIRCAS supports farmers to build or repair the canals of irrigation, GTZ advises farmers in improved rice production ICM to increase rice production, MAF support farmers with hand tractors and others equipments.

The strength of this cooperation:

Here a demonstration takes place wherein all components of rice production are looked after and production is optimized (Good Agriculture Practice -GAP-). The Farmers and the extensionist can observe and experience how a well managed rice field and the optimum production method can increase the rice yield.

Stable and sufficient water supply for irrigation in combination with good farming techniques leads to increased rice production. If farmers already invest high cost to build or repair the irrigation system but do not yet follow the right techniques in production, the extra cost for irrigation maintenance are not covered through an increased production.

On the organizational site it is a good example of how different organization can contribute and use their specific know-how and skilled staff to achieve a common objective.

Our observation so far:

Farmers in Bucoli village or especial in the demonstration area the farmers followed the instructions to rehabilitate the irrigation system since they were rewarded with rice for their work. In the rice production farmers followed the first steps in seed bed preparation and planting, however, did not yet follow all steps of ICM. Among the steps not yet followed was weeding in right time (15 days and 25 days after transplanting) which is still the most limiting factor in good production. But from GTZ site we still have the commitment to go ahead, we must look for some strategies how to convince farmers to follow all components of the ICM system. GTZ still supports MAF extensionists to assist to use the irrigation with optimum results.

From our site JIRCAS is one of international organization we (GTZ Staff) like to work together, because JIRCAS motivates farmers to use local material to repair or build the irrigation system (no high cost to repair irrigation systems) and not creating dependence to materials from outside of our country, East Timor. GTZ together with MAF introduced ICM system which does not need high inputs either and can use local available seeds to increase rice production. We are not in favor to give free materials to the farmers.

Outside Bucoli we are giving training to the farmers about compost or organic fertilizer to apply to their rice field. Because in order to increase rice production we must follow all ICM components like: good seeds, good land preparation, good irrigation, planting young seedling, good nutrition management, good plant production up to harvest. From GTZ site we know that is not easy to change farmers attitude and to adapt a new system like ICM, but step by step and together with MAF and various organization like JIRCAS and others we can achieve our objective (farmer increase their income by adapting good farming techniques, like ICM).

We hope this work and cooperation is adaptable and we must continue and maintain our cooperation.

Thank you for the good relationship and team work up to this time.

Written by: Mr. Benjamin Guterres (Coordinator of Farming System, GTZ Baucau)

Column 8: Integration effect of village support programs (MAF)

MAF standpoint of the effect of supporting the integrity of the various variations of activities to rural society.

1.organization integrity is very important to formulate the perception of society, especially the plantations and building owners in the rice fields of rural area well as a new State, Timor-Leste requires the development of the concept of sustainable integrities appropriate also for self-reliant, and build community in the independence and globalization.

2. strengthen cooperation between relevant organizations with the development of good agricultural integrities International, National, Regional, ONG and local communities

3. Increase the participation of the agricultural community in a way how to improve their lives through support integrities that farmers can live independently of their own accord for the future in order to fill the independence of Timor-Leste.

4. increase the capacity of farmers about extension mechanism for the community

Written by: Mr. Diny Quintao (Staff Member of National Directorate of Irrigation and Water Management, MAF)

{ CHECK }

Chapter 8 Let's share the results of support activities!

(Method to utilize intra-village communication, method to hold a workshop and field day, and method to evaluate the activity results)

{The time required to support intra-village communication: about 1 week to build a signboard, about 1 week to hold a workshop and field day including preparations, and about 1–2 months to monitor activities for the evaluation of the activity results.}

8.1 Method to utilize intra-village communication

Various means of communication are available. They include mass media, such as TV, radio, and newspaper, and printed matter like magazines. Signboards can be positioned as one of the means of communication. It is necessary to think over what signboards are used for.

Signboards for a company

- To show the presence of the company
- To publicize the company's philosophy and attitudes toward work
- To advertise the company's products and services and have them purchased

Signboards for the public

- To show the presence and location of facilities and services
- To inform them about the utilization of the facilities and services
- To distribute information on how to lead a safe life (on how to avoid risk)

It is advisable to ask Aldeia inhabitants to get together and build a signboard in cooperation with them.

The following case shows how JIRCAS built a signboard.

JIRCAS positions the introduction of the means to spread its support activities through collaboration between communities as one of its activities and has installed a publicity signboard to show its activities to inhabitants not only inside the Aldeia but also in other Aldeias (Sucos).

One signboard was built for each of the three model Aldeias (Uaisemu Aldeia, Lulihene Aldeia, and Macadai-de-Baixo Aldeia). Each of the signboards carries the name of the Aldeia and support agencies (JIRCAS, MAF of Timor-Leste, WFP, and GTZ).



Build a signboard of the project



Completed signboard of the project and its environment

8.2 Method to hold a workshop

(1) Objective to hold a workshop

A workshop is not merely an event attended by inhabitants. Instead, it comprises the activities developed by various inhabitants in the community, whether they are ordinary inhabitants or administrative officials, who get acquainted with the thoughts and feelings of others through collaboration and discussion and share various ideas in the course of rural development.

Especially, in a project intended for people concerned with Sucos and Aldeias, it is necessary to hold a workshop and debriefing session to report and verify the activity results for complete understanding and consent of the inhabitants.

(2) Method to proceed with a workshop

Preparations are necessary to hold a workshop attended by inhabitants. Before holding a workshop, it is necessary to explain the objective, place, and time of the workshop to the Suco Chief and Aldeia Chief and make a program of the workshop.

It is necessary to decide the time through discussions with the Aldeia Chief and Suco Chief because it is preferable to hold a workshop in the agricultural off-season to attract as many inhabitants as possible.

In addition, it is advisable to make an invitation with the date, starting time, and place and distribute it to people concerned to inform inhabitants about the workshop without fail and draw as many inhabitants as possible.

The following is the program of the workshop held by JIRCAS.

<u>Date</u>	December 17 (Thursday)
<u>Time</u>	9:00–13:00
<u>Place</u>	Meeting Building of the Bucoli Suco Chief
<u>Program</u>	
9:00	Registration
9:30	Opening Speech
9:40	Summary of the Study Program in FY 2009
10:00	Role of NGO in the Pilot Program
10:15	Review of the Pilot Program in Macadai-de-Baixo Aldeia in 2009
10:25	Review of the Pilot Program in Lulihene Aldeia in 2009
10:35	Review of the Pilot Program in Uaisemu Aldeia in 2009
10:45	Comments by MAF, WFP, GTZ, and JIRCAS
11:15	Field Observation
12:00	Refreshment
13:00	Closing Remarks

The explanation of the workshop program is followed by the exchange of opinions with inhabitants. Proposals submitted by the inhabitants should be considered carefully and organized as action plans to show the direction of future activities. Although the workshop allows for the collection of various opinions, it is sometimes difficult to proceed with it and summarize exchanged opinions. Should there be any difference in opinion between inhabitants and the organizer, it is necessary for both parties to understand the questions and problems instead of hastily forming a conclusion without the consent of the inhabitants. It is advisable to discuss these questions and problems with patience and consider focusing on them in the next workshop.

(3) Introduction of a case of the workshop

A workshop was held by JIRCAS to share the project results with inhabitants of the Suco (March 14, 2009). It drew a total of 39 participants, 26 of whom included the Suco Chief, Aldeia Chief, and others from six Aldeias and 13 of whom were from MAF, Baucau District Agriculture Office, WFP, GTZ, Baucau Sub-district office, and local NGOs.

Both Uaisemu Aldeia and Lulihene Aldeia implemented a support program last year. The former executed the support program to renovate the irrigation canal and the latter carried out the support program for the development of the Aldeia. The representatives of farmers involved in each of the programs made a presentation. The representatives related specific activities that they performed, such as setting the seasonal calendar and compacting soil.



In the opinion exchange with the participants, several questions were raised about the survey. A participant asked whether the representative of Bucoli Suco could attend the training that JICA was providing on the maintenance and operation of hand tractors in the neighboring district where JICA implemented the Manatuto irrigation and rice cultivation plan. He was assured that he would get an answer to his question after JIRCAS received advice from JICA. Another participant asked whether the earth canal was durable enough in relation to the renovation of the irrigation canal. He was informed of the importance of appropriate maintenance because the maintenance method is instructed and taught in the program to show its importance. Questions were also asked about the quality of foods provided by FFW and attachments of hand tractors provided by MAF. Arrangements were made to ask WFP and the District Agriculture Office to answer these questions. This workshop was effective to facilitate communication between the Suco and the support agencies.

8.3 Method to hold the Field Day

(1) Objective to hold the Field Day

The objective to hold the Field Day is to conduct a comparative study between the ICM method and traditional cultivation method and share the study results between the cultivator and the people concerned. (See 7.2(5) above.)

(2) Method to proceed with the Field Day

The Field Day should be held immediately after the rice cultivated by the ICM method is harvested. It is first necessary to understand the growing pattern of rice beforehand, confirm the time of harvesting and grain thrashing with the cultivator, and subsequently talk with the GTZ official in charge of the ICM method to fix the schedule of the Field Day. Inform the cultivator, Aldeia Chief, Suco Chief, and the District Agriculture Office of the schedule and invite them to the Field Day. The Field Day is held on the paddy field in which the ICM method was introduced.

The central aspect of the Field Day is the evaluation of the ICM method by the GTZ official. Through the facilitation of the GTZ official, a comparison is conducted between the ICM method and the traditional cultivation method in terms of such issues as the amount of seeds used, work time in nursery bed, work time for transplanting, work time for harvesting, and crop yield. Based on the comparison of these issues, the cultivation by the ICM method is evaluated to find what was excellent, what was fair, and what should be improved. All participants are asked to share the information and exchanged opinions to use them as feedback for the next time.

It is advisable that extension workers take on the role of facilitators on the Field Day.

8.4 Method to evaluate activity results

It is possible to confirm what effects the project activities had on the local community and inhabitants through daily contacts with inhabitants and periodical monitoring. (See the column below.) It is necessary to confirm what changes the project brings to the local community, namely, in the context of “changes that arise in the regional society due to external intervention.”

Monitoring means checking the progress of the predefined plan, objective, and instructions as needed. There are two ways to monitor.

- (i) Monitoring on a daily basis—this is an accumulation of daily observation and recording.
- (ii) Monitoring on a periodic basis—in this monitoring method, it is effective to follow changes using the monitoring sheet based on the daily record.

It is important to confirm such issues as what changes the project activities brought to the inhabitants and whether anything other than inhabitants was affected. Although many things can be confirmed by monitoring, it is advisable to conduct a social survey to measure the influence on the target people when the project ends, should it be necessary to analyze the influence of each issue in an integrated manner.

However, if financial constraints do not allow for a survey by a third party, it is advisable to specify items that the agriculture office has to understand (e.g., area of wet-rice cultivation) and organize the answers that the extension workers collected from the Aldeia Chief and Suco inhabitants through interviews.

The following are the items monitored by JIRCAS and MAF in the target Aldeia in the pilot project, and they are the items judged necessary among those in the baseline survey conducted at the start of the pilot plan. (See Appendix 1 for the items in the baseline survey.)

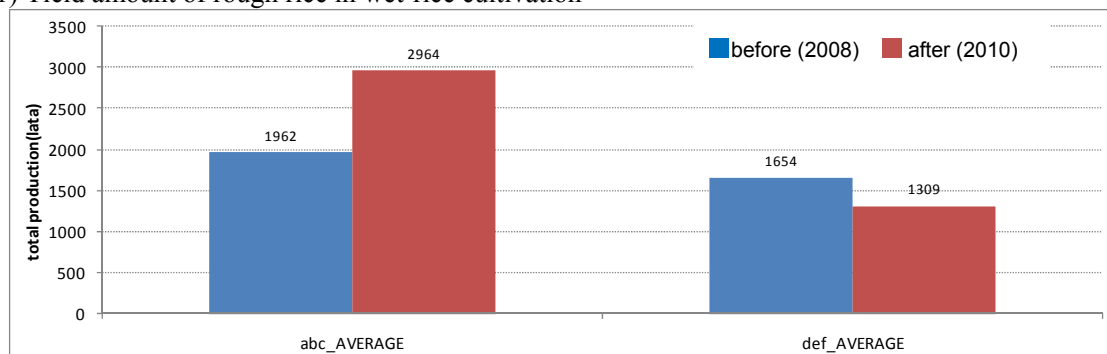
Because results and lessons obtained in one project have something in common with those obtained in other projects, they are highly likely to be utilizable.

- (i) Area, cropping season, yield of rough rice in wet-rice cultivation
- (ii) Annual production and annual consumption of milled rice
- (iii) Reserved irrigation water
- (iv) Opportunity to learn agriculture technology and the provider of the opportunity
- (v) Degree of participation in the collaboration to maintain irrigation canals

The following graphs compare the amount of rough rice in wet-rice cultivation and reserved irrigation water in July 2008, when the pilot project started, and those in January 2010, when it ended. The following are the comments made clear from the analysis.

The six Aldeias from “a” to “f” in the graphs are divided into two groups. The first group is made up of Aldeias from “a” to “c”, and the second group is made up of Aldeias from “d” to “f”. The first group has 20 households involved in one of the three projects, that is, formulation of an Aldeia development plan, FFW, or ICM. The second group has 20 households who are not involved in any of the three projects.

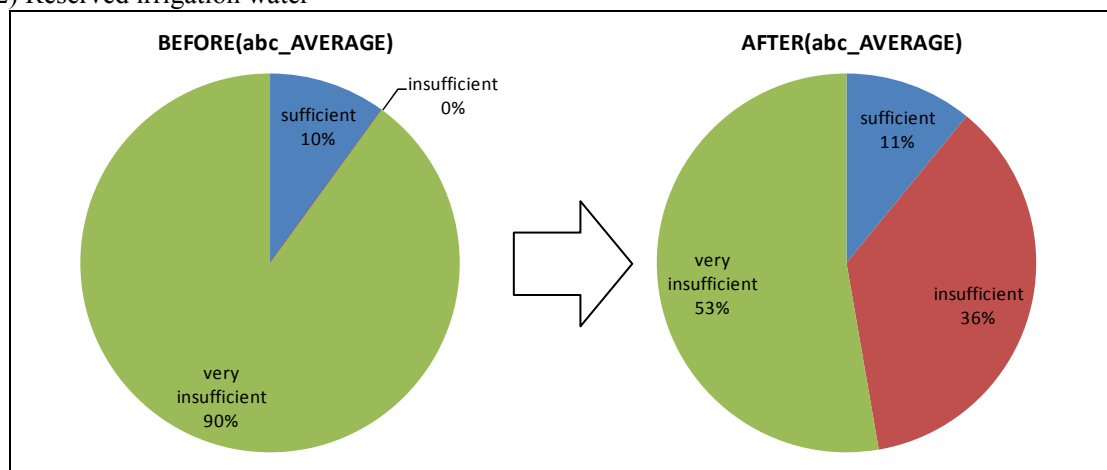
(1) Yield amount of rough rice in wet-rice cultivation



Comment for reference

- The 20 households of the three Aldeias “a”, “b”, and “c” increased the average amount of rough rice by 51%, and the 20 households of the three Aldeias “d”, “e”, and “f” decreased it after the pilot project as compared with before the pilot project.

(2) Reserved irrigation water



Comment for reference

- As for the reserved irrigation water in the dry season, 90% of the 20 households in Aldeias “a”, “b”, and “c” suffered from water shortage before FFW was implemented, but the rate decreased to 53% after FFW was implemented.

8.5 An example of the establishment and utilization of a committee

If inhabitants raise problems or give different opinions, it is necessary to report them in the general meeting with extension workers of the District Agriculture Office. All people concerned should share the information and work out solutions.

For smooth and effective implementation of support projects, JIRCAS set up the working committee made up of people concerned. JIRCAS regularly reported results of support activities and future plans and got advice and suggestions to solve any problems that had arisen.

Objective	Smooth and effective implementation of support activities
Organization	Chairman: Manager of the District Agriculture Office, senior district extension worker Members: Official of the District Agriculture Office, extension workers in charge, community development officer (CDO), representative of the Aldeia, and representatives of support agencies, such as WFP, GTZ, JICA, FAO of the United Nations, and others
Role	(i) Submit related information on such related issues as utilizable resources. (ii) Submit suggestions for problem solving. (iii) Evaluate results of support activities and approve activity plans. (iv) Spread effective support activities.

Needless to say, the activities of the committee improve the ability of the local administrative organization and strengthen the collaboration between related organizations. Depending on the content and scale of support activities, it is necessary to establish a joint governing board with upper level agencies like government agencies to create the possibility to incorporate the efforts to spread the participatory support activities in the policy.

The following table shows the case of the joint governing board established by JIRCAS.

Objective	Smooth and effective implementation of support activities
Organization	Chairman: Vice minister of the MAF Members: Director of irrigation water management, director of agriculture and plant cultivation, director of research, director of agriculture community development, and representatives of support agencies, such as WFP, GTZ, JICA, and others
Role	(i) Submit and share related information on utilizable resources. (ii) Submit suggestions for problem solving (central level and collaboration with related departments and divisions). (iii) Evaluate results of support activities and approve activity plans. (iv) Spread effective support activities (national level, level of a wide area).



Opinion exchange in the joint working committee chaired by the manager of the District Agriculture Office



Opinion exchange in the joint governing board chaired by the vice minister of the MAF

{ ACT }

Chapter 9 Let's Review the Aldeia development plan!

(Method to review the Aldeia development plan)

{The time required to consider the Aldeia development plan is 2–3 weeks and frequency to review the plan is once about every 3 years.}

Upgrading the formulated Aldeia development plan regularly makes it possible to formulate a better Aldeia development plan for the future. It is necessary to upgrade the plan in accordance with the appropriate procedure and with a view to increasing the feasibility.

9.1 Procedure to review the Aldeia development plan

It is advisable to review the Aldeia development plan in accordance with the following procedure.

(i) Collect opinions and information on the Aldeia activities

It is necessary to provide a time and place for the free exchange of opinions and experiences to farmers who have experience in formulating an Aldeia development plan. This allows for the collection of new information and better ways to devise measures on which the next Aldeia development plan should be based.

(ii) Confirm the implementation of the ongoing Aldeia development plan

It is necessary to confirm the implementation of the activities stipulated in the ongoing Aldeia development plan. If some activities have not been implemented yet, it is necessary to specify them and understand the reasons why they were not implemented.

(iii) Review the Aldeia development plan

If there are activities left unimplemented, consider whether they should be abandoned or transferred to the next plan with improvement in the aspects of “Farmers’ needs accompanied by specific vision,” “Optimal level that can be addressed by an Aldeia,” and “Selection of specific activities.”

(iv) Formulate the next Aldeia development plan

The Aldeia development plan should be upgraded or the next Aldeia development plan should be formulated in consideration of the reviewed activities and activities that need to be added. It is necessary to narrow down activities and give full consideration to describing activities in concrete terms.

(v) Activities to realize the next Aldeia development plan

To gain support to realize a new Aldeia development plan, such actions as providing information, supporting application, and making arrangements with related agencies should be taken.

9.2 Three important aspects to be taken into consideration

The following three aspects should be confirmed with reference to the specific activity for the consideration and review of the Aldeia development plan.

1. Farmers' needs accompanied by specific vision

Instead of simply mentioning “training on cultivation technique,” the description of the activity should be mentioned clearly, such as “training on the production of organic fertilizer and pesticide,” “training on the selection and preservation of the indigenous seed,” and “training on plowing using buffaloes” to formulate an Aldeia development plan that reflects farmers' needs with a clear vision of the training on the cultivation technique.

2. Optimal level that can be addressed by an Aldeia

In general, an Aldeia has strong needs for activities related to infrastructure improvement that it has difficulty addressing by itself. Although the final decision to implement or not to implement the plan is made in the discussion with the participants, it is necessary to decide whether their needs should be incorporated in the Aldeia development plan or should be left for future consideration in view of the feasibility of the activities.

3. Selection of specific activities

It is necessary to clarify the partner for the support activities that the Aldeia cannot perform by itself. In addition to collecting information on support agencies and their support content, it is necessary to select strategic activities based on information. Moreover, if the activities need support, the name of the supporter should be mentioned with the contact person. Such a specific Aldeia development program is useful to divide the role and clarify the responsibility for effective activity management and follow-up activities.

{ ACT }

Chapter 10 Let's disseminate the support activities to the vicinity!

(Method to introduce the mechanism to disseminate support activities among farmers and Aldeias)

{The estimated time to introduce the mechanism to disseminate support activities among farmers and Aldeias by learning and support: give support as needed. *Because this step is very important, the people concerned need to keep it in mind.}

Because the administrative system in rural communities, including services necessary to teach and disseminate agriculture, is very limited in itself, it is effective to introduce a community – community extension mechanism among the rural community besides collaboration in the reconstruction support for other Aldeias as a means to supplement and replace the administrative system. It is advisable to position the practice that farmers together teach and learn knowledge, know-how, and technology that they have acquired as the most important activity, and make Aldeia inhabitants adopt this practice whenever the opportunity arises.

The Aldeia whose farmers acquire knowledge, know-how, and technology through support activities teach them to the inhabitants of the next Aldeia. This mechanism, which allows farmers to disseminate what they have acquired through “support” and “learning” to other farmers and Aldeia, should be introduced in accordance with the following procedure.

(i)Teach new knowledge, know-how, and technology	Through the support for a specific group (the first group), teach new technology, knowledge, and know-how.
(ii)Teach how to acquire and improve what they have learned	It is necessary to make farmers understand fully and acquire what they have learned and to let them disseminate what they have acquired among participating farmers. For this purpose, instead of taking the one-way teaching direction from the teacher to the students, it is advisable to let farmers think about how to improve what they have learned and give them opportunities to exchange opinions.
(iii)Select the leader of farmers	Select an educated person suitable to be a leader who has acquired new knowledge, know-how, and technology on the basis of the observation of the support for the first group.
(iv)Demonstration by a farmer-lecturer	Invite the farmer selected in (iii) above as the lecturer for the support for the second group and let him demonstrate what he learned in (i) and (ii) above.
(v)Disseminate between communities	Repeat items 1 to 4 above. Through the repetition, support activities will disseminate from farmer A to farmer B, from Aldeia a to Aldeia b, and from Suco X to Suco Y, while they are growing in size (sealing up).

(vi) Role of an extension worker	<p>An extension worker has to play the following roles as a facilitator.</p> <ul style="list-style-type: none"> ✓ Visit the assigned Aldeia as often as possible. ✓ Collect information on problems, try to settle the situation caused by them, and report them to MAF. ✓ Exchange opinions between extension workers to help activities for spreading mentioned in (v) above to work efficiently.

Case of a community- community extension mechanism of support activities

(1) Sharing the experience of making an Aldeia development program

JIRCAS held a farmers' meeting to promote the mechanism to spread support activities and make them more effective and provided the place where participants of Macadai-de-Baixo Aldeia and the inhabitants of Lulihene Aldeia who participated in the making Aldeia development plan exchanged opinions and experiences freely. This measure worked well, and farmers who participated in the support activities in Lulihene Aldeia attended a series of all meetings and exchanged opinions and experiences. As a result, Macadai-de-Baixo Aldeia successfully made an Aldeia development plan that considered feasibility. In the hearing survey on the evaluation conducted of participants after the Aldeia development plan was formulated, collaboration with participants of other Aldeias was very popular, especially among women, and many said that collaboration helped them formulating the plan.



Participants discuss even during a break



Interchange with inhabitants of the Aldeia that already received support activities

(2) Share experiences of the rehabilitation of an irrigation canal support program

JIRCAS held a meeting to allow the inhabitants of Uaisemu Aldeia, who participated in the rehabilitation of an irrigation canal last year, to teach what they acquired and their experiences to the participants of Lulihene Aldeia, where irrigation canal rehabilitation plan is scheduled.



Experienced farmers teach farmers in the actual canal in the field



Experienced farmers explain their experiences

Approximately ten participants of FFW plan, including Lulihene Aldeia Chief and the group leader of the FFW plan, participated in the meeting, and farmers who participated in the support activities in Uaisemu Aldeia joined the meeting to talk about what teaching they had received and what method they had used to rehabilitate the irrigation canal. Moreover, they demonstrated the method in the canal scheduled to be rehabilitated for the participants of FFW in Lulihene Aldeia.

The farmers who participated in the rehabilitation of irrigation canal in Uaisemu Aldeia explained emphatically the importance of compaction the canal dike firmly. Farmers scheduled to participate in FFW listened to their explanation seriously.

(3) Spread the maintenance and management technique for hand tractors between Aldeias

In this case, the training on operation and maintenance of the hand tractors was held at the request of

the Aldeia and out of necessity. Attendants of the training who had acquired the know-how were given the opportunity to teach what they acquired to inhabitants of other aldeias. Appendix 2 is the memorandum agreed between the representatives of the community (Suco Chief and chiefs of related Aldeias) and the manager of the District Agriculture Office.

Column 9: Lesson and learnt in spreading support activities to other communities in the training on hand tractors

Lesson and learnt regarding community to community extension mechanism on the hand tractor training conducted in Bucoli Village

1. Farmers who had been trained on hand tractors will coordinate with the group that received a hand tractor Bucoli internally in the Village area will continue to process the operation and maintenance training for the hand tractor which is received by the farmer groups.
2. Farmer who had been trained on hand tractors also coordinate with the extension and the head of the group before the operation and maintenance training hand tractor to another group.
3. Extension going along with the head of the group who had received a hand tractor will provide training equipment to conduct training to other farmers who were not participating in training about a hand tractor.
4. Extension with the head of the group will be accompanying and facilitating the training process of hand tractors, including practice in the field, especially in the Bucoli Village.
5. Extension with the chairman of the group will evaluate implementation process of training hand tractor in the Bucoli village during a training on theory and intensive practice in the field.
6. farmers which gives training to farmers who else will make a report on implementation of the training to the extension, head of the group, and the village chief when implementation is completed.
7. Extension also will make a report to the Sub District coordinator extension when implementation completed.

Written by: Mr. Vasco B. da Costa Simões (Senior Extensionista, MAF Baucau)

Decree Law No.18/2008 of 19th June 2008 (The Organic Law) provide the legal basis for the operations and organization of the Ministry of Agriculture, with the structure and mandate work with equity, efficacy and efficiency towards the objectives of achieving food security and enhancing national economic growth. *Article 12* of the Organic Law provided for the establishment of a new National Directorate of (DNADCA) and set broad guidelines for its operations.

The Organic Law expressly charges the DNADCA with responsibility to define a national policy for extension, with the formulation of strategies, priorities and goals, and to participate in the *elaboration of plans, problems and projects for the 'respective area'*.

The National Directorate for Supporting Agro Community Development and Extension, DNADCA, has the mission of implementing programs for increasing agricultural production and for the agro-community development fund.

DNADCA is responsible for the following: To define the national policy for extension, formulation of its strategies, priorities and goals, and to participate in the elaboration of plans, programs and projects for the respective areas; Under cooperation with all Ministerial services, to establish a network of extension workers at the local level; At rural local level to disseminate relevant information for the farmers who have been upgraded by MAF Technical Officers; To ensure the implementation and stability of rural development programs, under strict performance linkage under Ministry supervision; To establish the coordination, operating procedures and implementation of the Agro-Community Development Fund; To ensure technical support for the proposals already approved for the Agro-Community Development Fund and, under coordination with the local Authorities, to monitor the implementation of the projects; To provide an annual report on activities; To undertake others duties as required.

The Organic Law formally mandates the national extension system with responsibility for the delivery of extension services and information to farmers, the implementation of the rural development plans of the Ministry, the operation and monitoring of the Agro-Community Development Fund in coordination with the local authorities, annual reporting to the Ministry, and other duties, as required.

The Organic Law also allocates a number of extension-related responsibilities to National Directorates other than DNADCA. These responsibilities will need to be harmonized with those of the new extension service to prevent duplication and maximize efficiency in the delivery of services at the Sub-District and suco levels.

DNADCA views agricultural extension¹ as ' a learning process by which the main agricultural actors and agricultural business players are capacitated to organize themselves and to access market information, technologies, capital and other resources in order to increase productivity, work efficiency, incomes and living standards, while also improving their understanding of the importance of sound environmental management.'

DNADCA therefore places emphasis on the role of extension in -building social capital through encouraging group formation, participation, cooperation, planning, organizational and leadership skill in communities, facilitating access to information and new technologies, supporting self reliance and problem solving skills, building business management, marketing and financial skills, managing natural resources sustainably.

The extension officers are also expected to become highly knowledgeable about the agricultural and social systems of their sucos and to become experts in the local farming systems. MAF experts that the extension officers will play a central role in the monitoring and reporting agricultural indicators in each suco, most importantly in the collection of key indicators of food production and local food supplies, along with any emerging threats to food security. MAF also requires the extension service to promote MAF's priority programs, such as rice intensification.

Similarly, the shared Goals of MAF and the DNADCA are the achievement of Sustainable

increases in national food production, food security and nutrition, Sustainable increases in farm incomes, Improved marketing of agricultural produce and the commercial development of agriculture, Improved capacity of farmers to participate in and benefit from development. I look forward to hear from you in case of any articles which is above mentioned do not reflected the cooperation between JIRCAS and DNADCA I will be welcome to constructive criticism, thank you for your cooperation.

Written by: Mr. Januario Marcal de Araujo (National Director of Agriculture Community Development, MAF)

AFTERWORD

HOW TO USE THE GUIDELINE IN ORDER TO DELIVER QUALITY WORK ON GENERAL

Use the Guideline to deliver quality work to the public: it must be based on strategic plans and general goals of the Ministry of Agriculture and Fisheries has been planned.

Must follow the following levels:

1. Observation knowledge and needs of farmers (observing the situation)
2. Approach widely
3. Expansion mode
4. Recommendations widely
5. Management widely
6. Guarantee financial, equipment and transportation



STRATEGIC

- Define clearly the work / the work is defined clearly by job counselor.
- Plan short, medium, long term
- Coordination of monitoring and evaluation work
- Regular meetings
- NGOs plan to the appropriate government plan
- Method: individuals, groups, beds, pilot, mass media, convey beside, convey experiences and subsidies with a clear agreement

THROUGH THE METHOD, APPROACH AND MANAGEMENT CREDIBLE

- Observing the situation to make equipment for the needs of the community
- Building through group / real plan group
- Supporting farmers through extension workers working group
- Developing and strengthening such communities initiative from local extension agents, group leaders, for social protection, social mobilization, social upgrading
- Establish training / centers of group of pilot activities to the supply of food
- Meetings involving many people to obtain their opinions and ideas from the public
- Supports the ability to build communities or groups of farmers through training to rural communities and regularly visit the place of extension
- Support farmers in the form of goods, equipment, brochures, and visits
- Treat the ladies with the men in training / plan to visit / implementation and evaluation
- Coordination with the Ministry of Agriculture and Fisheries national and district / region

Written by: Mr. Domingos Savio Cabral Ribeiro (District Director, MAF Baucau)

Appendix 1: Example of questionnaire of the baseline survey

Farmers Households survey

Identification

District:	Baucau
Sub-District:	Baucau
Suco:	Bucoli
Aldeia:	
Name of Interviewee	
Date of Interview	

1. General Information

Name of head of family																
Family structure (a number of persons)	total	Male					Female									
Age structure of family <u>check</u>	Family member															
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
0-9 years old																
10-19 years old																
20-29 years old																
30-39 years old																
40-49 years old																
50-59 years old																
60-69 years old																
70 and over																
Education																
Literacy (persons who can read newspaper in the family) <u>check</u>																
occupation																

Distance of house from the house of Aldeia chief(km)	
Distance of house from the cultivated paddy by the family(km)	
Access to portable water from your house(m)	

2. Land Tenure

status	total(hiban)	self used(hiban)	Rent(hiban)
Owned(hiban)			
Rented(hiban)			

Aldeia	
Name of Interviewee	

3. Cultivation

Kinds of crop	cultivated area (hiban)	total production (lata)	income (\$)	Planting season and harvesting season (drawing bar-chart)											
				Jun	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Paddy															
Maize															
Cassava															
Sweet potato															
Other tuber crops(kind)															
Groundnuts															
Candlenuts															
Vegetables															
Others															
What a more valuable crops?															

*1lata=12kg

4. Rice production and consumption

total rice production milled (lata/year)	Total(lata)	For self consumption (lata)	For rencah owner (lata)	For land owner (lata)	For social /culture events (lata)
family consumption of milled rice (lata/year)					

5. Livestock

	Water buffalo	Cow	Sheep	Goat	Hen	Horse	Pig	Others(Kinds)
heads								

6. Land preparation

check	Owned	Rented
Rencah		
Hand tractor		
Others(Kinds)		

7. Fertilizer

	Kinds	kg
Chemical Fertilizer		
Animal dung		
Other organic fertilizer		
Unused		

8. Pesticide

	kinds	kg
Used		
Unused		
Other methods		

Aldeia	
Name of Interviewee	

9. Sources of rice seeds

	Name of variety
Self production	
Procurement from	

10. Sources of seed of vegetables and seedling of fruits

	Name of vegetable
Self production	
Procurement from	
Cost(\$/year)	

11. Irrigation system condition

<u>check</u>	sufficient	insufficient	very insufficient
In rainy season			
In dry season			

12. Income

	From Agriculture	Out of agriculture (source of income, a amount)
A yearly income (\$)		

13. Expenditure

	For Agriculture	Others
A yearly expenditure (\$)		

14. Saving

A yearly saving (\$)	
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15. Borrowing

A yearly borrowing (\$)	
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16. Learning about agriculture technique

	a yearly a number of times	source
Learning about agriculture technique from other persons or organization		

Aldeia	
Name of Interviewee	

17. Participation in maintenance work

	days
Participation in maintenance of community irrigation facilities	

18. Appliances

	number	value(\$)
Kerosene stove		
Radio		
Sewing machine		

19. Problem of household regarding Farming

	<u>check</u>
Weather	
Lack of credit	
Lack of technical knowledge	
Lack of water on paddy	
Flood	
Poor harvest	
Low price of output	
Others(Kinds)	

Appendix 2: Example of a memorandum on training on daily inspection and maintenance of hand tractors

Memorandum on training on daily inspection and maintenance of hand tractors

1. Objective

As part of the joint program by JIRCAS and MAF to support Bucoli Suco, this training is given to realize more effective utilization of the hand tractors provided to Bucoli Suco by the government and spread support activities among Aldeias.

2. Targets of the training

- 1) Of inhabitants who received the training on the hand tractors intended for Bucoli Suco (from December 15, 2009 to December 16, 2009), two inhabitants each from Uaisemu Aldeia, Lulihene Aldeia, and Macadai-de-Baixo Aldeia with the endorsement of each chief
- 2) Three mechanics affiliated with Baucau District Agriculture Office
- 3) One extension worker in charge of Bucoli Suco

3. Content of the training

The major content of the training is to teach daily inspection and maintenance of the hand tractors and solve problems that the users from the above three Aldeias have. This is a 1-day program made up of the following sections.

- Share the technical problems that participants have in common and confirm the contents of the training (1 hour)
- Training (4 hours)
- Confirm and summarize important points (1 hour)

4. Expenses for the training

Expenses for the training are borne by JIRCAS. However, Bucoli Suco is responsible for the travel of participants from Bucoli Suco to the training site and the transportation of the hand tractor to the training site.

5. Spread technique and knowledge acquired in the training

The inhabitants from the three Aldeias stipulated in 2.1 above who attended the training have to deliver the following two training sessions under the auspices of Bucoli Suco and agree to become lecturers for them. The people affiliated with Baucau District Agriculture Office mentioned in 2.2 and 2.3 above have to attend the training organized by Bucoli Suco as advisers.

- 1) One-day training for inhabitants of his/her Aldeia
- 2) One-day training for inhabitants of neighboring Aldeias

6. Others

- 1) This memorandum is made in both English and Tetun.
- 2) The following signers decide the items not mentioned in the memorandum through discussions.

7. Signers

- 1) Chief of Bucoli Suco, 2) Chief of Uaisemu Aldeia, 3) Chief of Lulihene Aldeia, 4) Chief of Macadai-de-Baixo Aldeia, 5) Manager of Baucau District Agriculture Office, and 6) Representative of JIRCAS

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Column 4	Ms. Sabina dos Reis	Lulihene Aldeia in Bucoli Suco
Column 5	Mr. Domingos José Freitas	Former Extensionista in charge of Bucoli Suco
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