

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)**

**MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES (MAFF)  
DEMOCRATIC REPUBLIC OF EAST TIMOR**

**THE STUDY  
ON  
INTEGRATED AGRICULTURAL DEVELOPMENT  
OF  
EAST TIMOR  
COMPLETION REPORT  
FOR  
IMPLEMENTATION OF THE PILOT PROJECT  
ANNEX**

**SEPTEMBER 2003**

**SANYU CONSULTANTS INC.**

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**ANNEX A. SOCIO-ECONOMIC SURVEY**

## ANNEX A. SOCIO-ECONOMIC SURVEY

### 1. Number of Sample Farmer

No.	Turnout Name	Sumple Number hh (=household)
1	Jambula1	3
2	Jambula2	3
3	Iruinlend	3
4	Ihunwen	3
5	Hatuun	3
6	Kilela	3
7	Demoni	3
8	Wedadean	3
9	Inkeru	2
10	Hatusadan	3
11	Ilatun	5
12	Mataes	4
13	Wesor	3
	Total	41

The total sample number is 41 households. Basically, Study Team tried to collect three households from each secondary canals, and turnout names of the canals are showed in the left table, which shows from up to down of the main canal. In Inkeru, which is the main project site, Study Team had collected three farmers but one of them was an exceptional huge farmer, therefore it was omitted.

The sampling method was almost random because enumerators visited farmers without definite aim except selecting three households from each secondary canal. But there was a tendency for them to select a household that had easy access to visit, such as a kiosk, big farmer, and official, who were seemed wealthy farmer, comparatively. Therefore the average of this survey might be a little higher than the real one.

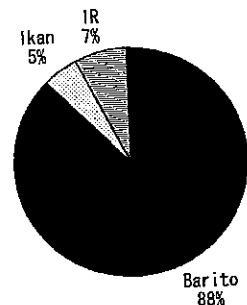
### 2. Family Structure

Number of family member: Ave= 5.9people, n= 41, Med= 6.0, Max= 11.0, Min= 2.0  
 Typical family structure is consisted two generations, parents and children. According to the above data and the observation, it is described that family number is parents and four children.

### 3. Paddy Cropping in 2002

3.1 Variety of paddy (household): Barito= 88%, Ikan= 5%,  
 IR5=IR8=IR64= 2%

Barito is the most popular variety in this area. Some farmers call it "Marito" but correctly, it is Barito. Though there are a few answers of using "R5" or "R8", they seem the series of IR.



3.2 Planted area: Ave= 1.4ha, n= 41, Med= 1.0, Max= 3.0,  
 Min= 0.5

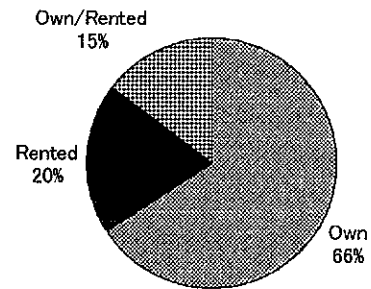
3.3 Production: Ave= 2.5ton, n= 41, Med= 2.0, Max= 7.0, Min= 1.0

3.4 Unit Production: Ave= 1.9ton/ha, n= 41, Med= 1.7, Max= 4.0, Min= 0.8

plants rice about 1.0 ha and produces 1.7 ton of paddy in the season of 2002.

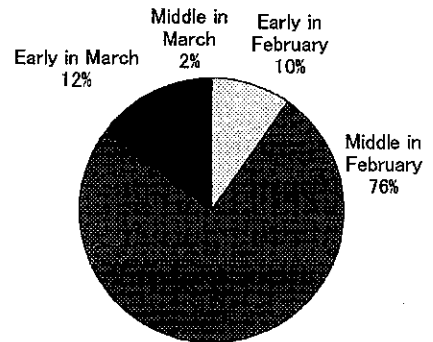
3.5 Land tenure (household): Own= 66%, Rented= 20%, Own/Rented= 15%

Land rental fee is the half of the products.



3.6 Transplanting Season (household):

Early in February= 10%,  
Middle in February= 76%,  
Early in March= 12%,  
Middle in March= 2%



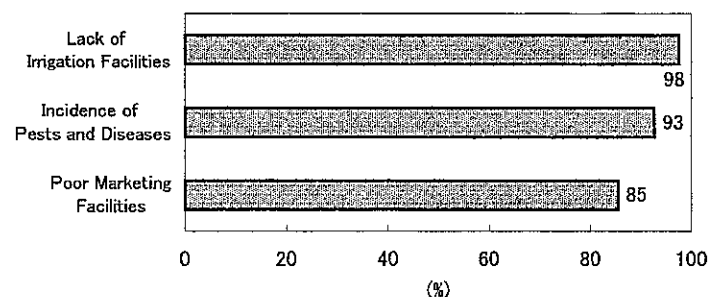
3.7 Cropping period: Ave= 120days, n= 41, Med= 110, Max= 170, Min= 90

Average cropping model is that they transplant in the middle of February and harvest in the end of May.

3.8 Serious problems on farming operation (household):

- No.1= Lack of irrigation facilities (98%)
- No.2= Incidence of pests and diseases (93%)
- No.3= Poor marketing facilities (85%)

Farmers in Inkeru complained their damage of a harmful insect that seemed a kind of shield bug in the first workshop at the project site.



#### 4. Irrigation System

4.1 Water fee to Marino: Practice= Rice 50kg/ha

According to Study Team expert of farmers' organization, farmers pay above quantity in kind to their Marino, who manages irrigation water in each secondary canal, as their salary. Some farmers understand that it is the water fee for

irrigation system.

4.2 Are you ready to contribute to WUA in cash or kind? No= 100%

We ask this question to farmers who do not understand the Marino's salary as the water fee for irrigation system.

4.3 How much do you get the production if the irrigation system works well?

Ave= 2.2ton/ha, n= 41, Med= 2.0, Max= 5.0, Min= 1.3

Farmers expect about 20 % up of the yield.

4.4 Do you belong to a farmer's group for irrigation now? Yes= 100%

4.5 What is your responsibility? Maintenance of canal= 98%

Digging and cleaning of canal is done by every farmer, communally just before the beginning of irrigation.

4.6 Did you or your parents belong to a farmer's group for irrigation in the past (before 1996)? Yes= 5%

4.7 What was the responsibility? Maintenance of canal= 100%

There are few farmers participated in WUA in the past.

4.8 Do you know the WUA was recently established? Yes= 10%

4.9 If yes, how do you feel? Good= 100%

4.10 What is the reason in 4.9? Help for having responsibility, understanding of WUA, solving of irrigation problems

The ratio of farmers who know the new WUA is no more than 10 %, but all farmers who recognize the organization approve it.

## 5. Machinery and Bullock Use

5.1 Method of land preparation (household): Rencah= 95%, Tractor= 5%

5.2 Quantity of land preparation work by rencah: Average= 7days/ha, n= 39hh

5.3 Quantity of land preparation work by tractor: Average= 5days/ha, n=2hh

Tractor users are only two farmers, which is not enough information.

5.4 Possession of bullock (bullock user): Owned= 79%, Rented= 21%

5.5 Possession of tractor (tractor user): Owned= 0%, Rented= 100%

5.6 Rental fee of bullock: Average= 40\$/ha, n= 5hh

5.7 Rental fee of tractor: Average= 25\$/ha, n= 2hh

Rencah uses from 10 to 30 bullocks per one time. Many farmers own them communally.

5.8 Method of threshing (household): Manual= 44%, Machine= 56%

5.9 Quantity of threshing work by manual: Average= 10days/ha, n= 18hh

5.10 Quantity of threshing work by machine: Average= 2days/ha, n= 23hh

5.11 Possession of threshing machine (machine user): Owned= 13%, Rented= 87%

5.12 Rental fee of threshing machine: Average= Paddy 92kg/ha, n= 20hh

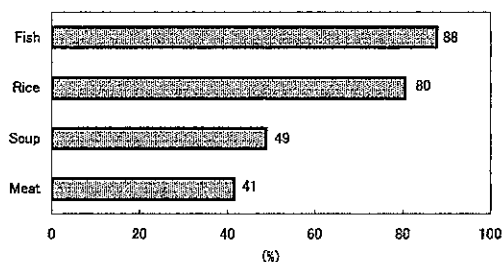
This manual includes threshing equipment worked by foot. On the other hand, a threshing machine is worked by an engine.

- 5.13 Method of milling: Manual (household)= 56%, Machine= 44%
  - 5.14 Quantity of milling work by manual: Average= 7days/ha, n= 9hh
  - 5.15 Quantity of milling work by machine: Average= 2days/ha, n= 18hh
  - 5.16 Possession of milling machine (machine user): Owned= 11%, Rented= 89%
  - 5.17 Rental fee of milling machine: Average= 1\$/rice50kg (n= 9hh), 5\$/day (n= 7hh)
- The estimate of manual milling is difficult since they do in many times as the need arises.

## 6. Major Meals

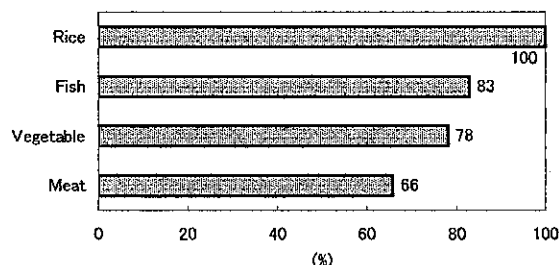
### 6.1 Major menu of breakfast:

Fish= 88%, Rice= 80%, Soup= 49%,  
Meat= 41%



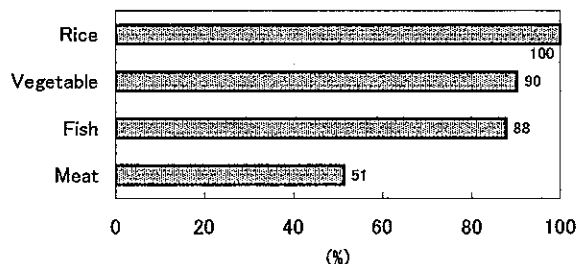
### 6.2 Major menu of lunch:

Rice= 100%, Fish= 83%,  
Vegetable= 78%, Meat= 66%



### 6.3 Major menu of supper:

Rice= 100%, Vegetable= 90%,  
Fish= 88%, Meat= 51%

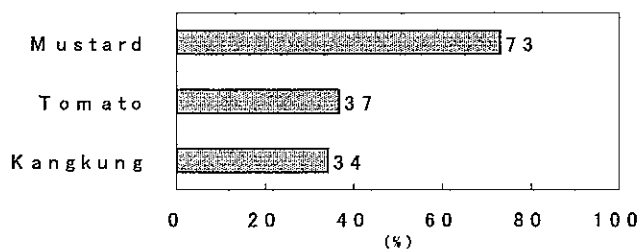


In all households, people have rice in supper and lunch. Fish enriches their meals.

## 7. Major Products in Backyard

### 7.1 Major vegetable in backyard:

Mustard= 73%, Tomato= 37%,  
Kangkung= 34%



### 7.2 Major fruit in backyard:

Banana= 63%, Papaya= 54%

### 7.3 Major fowl in backyard:

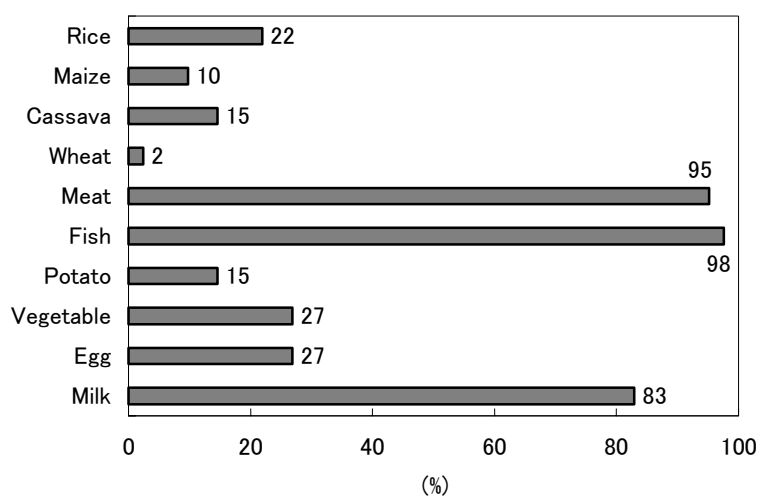
Chicken= 41%, Pig= 22%

A lot of kind of vegetable and fruit are grown in their backyard.

## 8. Monthly Purchase for Food

Item	Applicable Household (Without 0)							Total (With 0)			Unit Price	
	n		unit	Ave	Med	Max	Min	unit	Ave	Med	\$	unit
	hh	%										
Rice	9	22	kg	64	50	100	25	kg	14	0	15.0	/50kg
Maize	4	10	kg	5	5	5	4	kg	0	0	0.9	/kg
Cassava	6	15	kg	5	5	7	3	kg	1	0	0.8	/kg
Wheat	1	2	kg	5	5	5	5	kg	0	0	0.7	/kg
Meat	39	95	kg	4	4	15	1	kg	3	4	2.5	/kg
Fish	40	98	unit	21	20	40	1	unit	20	20	0.7	/unit
Potato	6	15	kg	4	4	8	1	kg	1	0	0.7	/kg
Vegetable	11	27	bunch	109	30	600	20	bunch	29	0	0.1	/bunch
Egg	11	27	egg	30	20	150	5	egg	8	0	0.1	/egg
Milk	34	83	bottle	5	4	10	2	bottle	4	4	0.5	/bottle

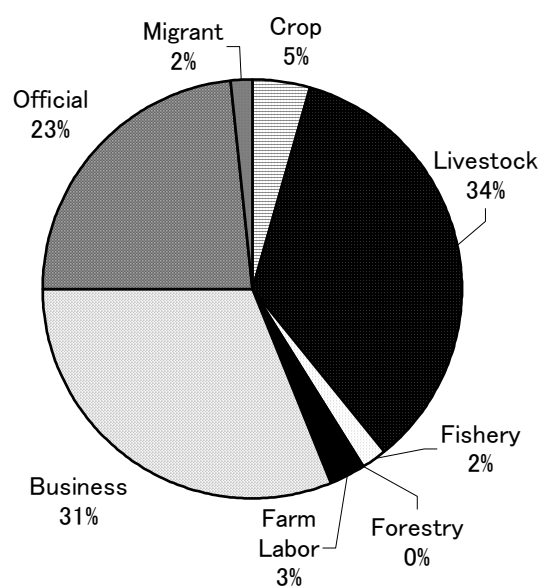
“Applicable Household” is farmers who buy each food. Rice for example, 9 households buy them, and the average is 64 kg/hh.





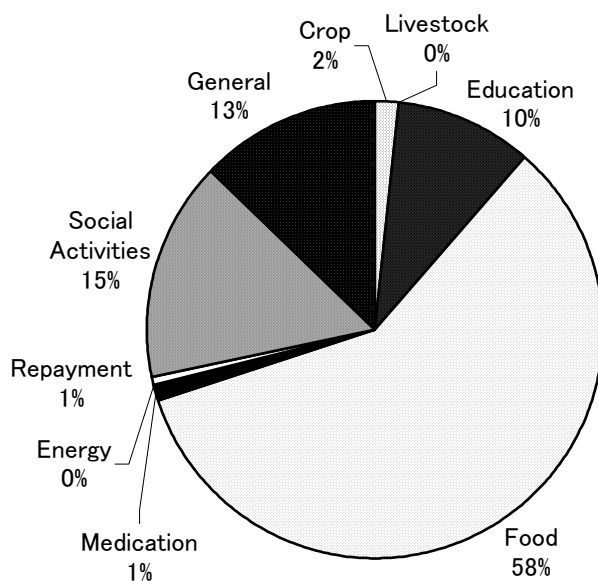
### 9. Annual Income (excluding self consumption)

Item		Applicable Household (Without 0)						Total (With 0)		
		n		Ave	Med	Max	Min	Ave		Med
		hh	%	\$	\$	\$	\$	\$	%	\$
Crop	Rice	31	76	39	30	120	10	29	4	30
	Mustard	1	2	20	20	20	20	0	0	0
	Kangkung	1	2	30	30	30	30	1	0	0
	Banana	8	20	17	18	25	10	3	0	0
	Papaya	2	5	13	13	15	10	1	0	0
	Mango	2	5	15	15	20	10	1	0	0
	Total	31	76	46	50	120	10	35	5	30
Livestock	Bull	15	37	507	300	2,750	150	185	24	0
	Pig	24	59	83	55	600	25	48	6	30
	Goat	19	46	58	50	100	25	27	3	0
	Chicken	14	34	27	20	100	10	9	1	0
	Total	30	73	369	238	2,750	50	270	35	145
Fishery		3	7	193	120	360	100	14	2	0
Forestry		2	5	30	30	40	20	1	0	0
Farm Labor		12	29	71	55	240	30	21	3	0
Business		8	20	1,243	600	6,000	80	242	31	0
Official		4	10	1,854	1,800	2,520	1,296	181	23	0
Migrant		2	5	240	240	360	120	12	2	0
Total		41	100	776	360	6,000	65	776	100	360



### 10. Annual Expenditure (excluding self consumption)

Item		Applicable Household (Without 0)						Total (With 0)		
		n		Ave	Med	Max	Min	Ave		Med
		hh	%	\$	\$	\$	\$	\$	%	\$
Crop	Fertiliser	29	71	10	10	10	10	7	1	10
	Chemical	30	73	6	5	10	5	5	1	5
	Tool	2	5	8	8	10	5	0	0	0
	Labor	1	2	1	1	1	1	0	0	0
	Machine	1	2	30	30	30	30	1	0	0
	Fuel	1	2	1	1	1	1	0	0	0
	Total	33	80	16	15	30	5	13	2	15
Livestock		1	2	20	20	20	20	0	0	0
Education		25	61	116	40	500	0	71	10	15
Food		41	100	428	324	2,370	94	428	59	324
Medication		16	39	17	13	50	5	7	1	0
Energy		1	2	20	20	20	20	0	0	0
Repayment		3	7	57	50	80	40	4	1	0
Social Activities		39	95	119	100	500	3	113	15	100
General		34	83	113	60	1,000	10	94	13	50
Total		41	100	730	508	4,380	171	730	100	508



### 11. Desires to Improvement

11.1 Do you have desire to improve income, individually?

Yes= 95%, Strongly Yes= 5%

11.2 Do you have desire to improve income, communally?

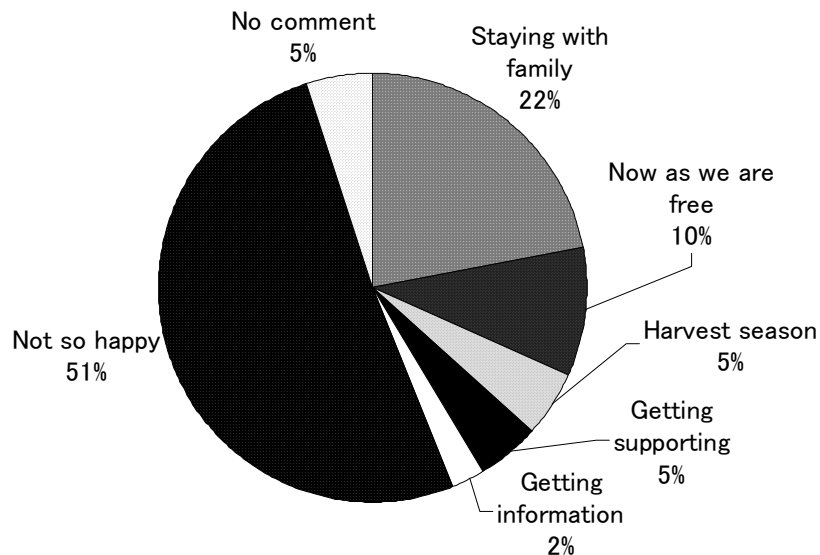
Yes= 95%, Strongly Yes= 5%

11.3 Do you have desire to improve skill of your job?

Yes= 88%, Strongly Yes= 12%

**12. When do you feel happiness?**

Staying with family= 22%, Now as we are free= 10%, Harvest season= 5%,  
 Getting supporting= 5%, Getting information= 2%  
 Not so happy= 51%, No comment= 5%

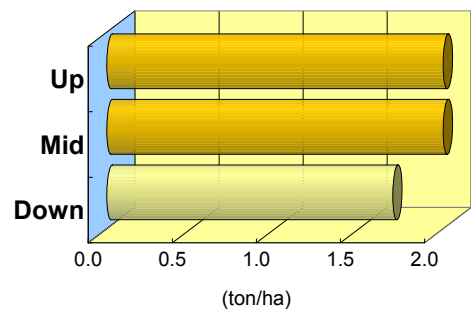


**13. Relation between Locations of Fields and the yields**

Step 1: In order to see relation between locations of fields in the main canal and the unit yield, the yield data were divided into three divisions, up, middle and down stream of the main canal. Calculating each average of the unit yield, the figure of the down stream is lower 0.4 ton/ha than the average of up and mid stream. This result of calculation is shown in the following table.

**Location of Fields in the Main Canal and the Yield**

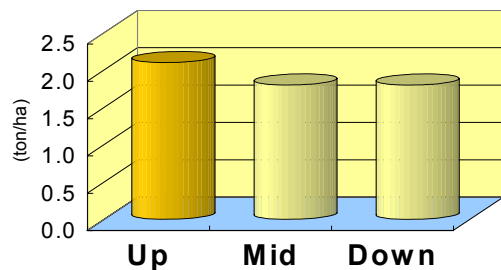
No.	Turnout Name	n (hh)	Unit Yield (ton/ha)	Place of Main Canal	Average (ton/ha)
1	Jambula1	3	2.2	Up	2.0
2	Jambula2	3	2.0		
3	Iruinlend	3	2.0		
4	Ihunwen	3	1.6		
5	Hatuun	3	3.0	Mid	2.0
6	Kilela	3	2.2		
7	Demoni	3	1.9		
8	Wedadean	3	1.5		
9	Inkeru	2	1.4		
10	Hatusadan	3	1.2	Down	1.6
11	Ilatur	5	1.7		
13	Mataes	4	2.3		
14	Wesor	3	1.2		
Total		41	1.9		1.9



Step 2: In order to see relation between locations of fields in the secondary canal and the unit yield, the yield data were divided into three divisions, up, middle and down stream of the secondary canal. Calculating each average of the unit yield, the figure of the up stream is higher 0.3 ton/ha than the average of mid and down stream. This result of calculation is shown in the following table.

**Location of Fields in the Secondary Canal and the Yield**

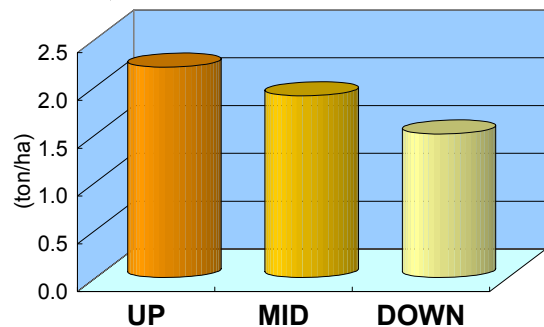
No.	Turnout Name	n (hh)	Unit Yield (ton/ha)	Secondary		
				U	M	D
1	Jambula1	3	2.2	3.0	1.5	2.0
2	Jambula2	3	2.0	2.0	1.5	2.5
3	Iruinlend	3	2.0	2.5	1.5	2.0
4	Ihunwen	3	1.6	1.5	1.7	1.5
5	Hatuun	3	3.0	4.0	2.0	3.0
6	Kilela	3	2.2	1.5	3.5	1.5
7	Demoni	3	1.9	1.7	2.0	2.0
8	Wedadean	3	1.5	-	2.0	1.2
9	Inkeru	2	1.4	1.5	-	1.3
10	Hatusadan	3	1.2	1.0	-	1.2
11	Ilaturun	5	1.7	-	1.3	-
12	Mataes	4	2.2	2.3	2.0	2.3
13	Wesor	3	1.2	-	1.3	1.0
	Total	41	1.9	2.1	1.8	1.8



Step 3: In order to see relation between locations of fields in the main and secondary canal and the unit yield, the yield data were divided into three divisions, UP, MID and DOWN stream of the main and secondary canal. The figure of the UP stream is higher 0.3 ton/ha than the average of MID stream, and the MID is higher 0.4 ton/ha than the one of DOWN stream.

**Location of Fields in the Main and Secondary Canal and the Yield**

	UP	MID	DOWN
Main	Up&Mid	Up&Mid	Down
Secondary	Up	Mid&Down	Up
(ton/ha)	2.2	1.9	1.5



No.	Turnout Name	n (hh)	Unit Yield (ton/ha)	Secondary		
				U	M	D
1	Jambula1	3	2.2	3.0	1.5	2.0
2	Jambula2	3	2.0	2.0	1.5	2.5
3	Iruinlend	3	2.0	2.5	1.5	2.0
4	Ihunwen	3	1.6	1.5	1.7	1.5
5	Hatuun	3	3.0	4.0	2.0	3.0
6	Kilela	3	2.2	1.5	3.5	1.5
7	Demoni	3	1.9	1.7	2.0	2.0
8	Wedadean	3	1.5	-	2.0	1.2
9	Inkeru	2	1.4	1.5	-	1.3
10	Hatusadan	3	1.2	1.0	-	1.2
11	Ilatun	5	1.7	2.3	1.3	-
12	Nambaka	1	2.3	2.3	-	-
13	Mataes	3	2.2	-	2.0	2.3
14	Wesor	3	1.2	-	1.3	1.0
	Total	41	1.9	2.1	1.8	1.8

Above results do not mean that the reason of the difference is quantity of irrigation water, because yield is a result of all factors, such as soil, variety, fertilizer, chemical, weeding, etc. But it is estimated that the difference of water quantity is one of the reasons of the difference of the yield, since paddy field located in down stream of irrigation canal is hard to take enough water compared with the up stream field.

## **ANNEX B. SOIL TEST**

## ANNEX B Soil Test

### B.1 Objective

Soil test was done to clarify the contents of nitrogen (N), phosphorus ( $P_2O_5$ ) and potassium ( $K_2O$ ) in the soil of demonstration farm.

### B.2 Progress of the Soil Test

#### B.2.1 Soil Test Laboratory

Here in East Timor, chemical analysis for soil samples is not possible since there are no laboratories according to the MAFF staff. Although the MAFF recently obtained the chemical analysis equipments, they have not yet installed and no analytical specialists are available.

In Indonesia, there are laboratories. In the course of the meeting with MAFF on 18 November 2002, it was revealed that one MAFF staff had a three-month training at the Center for Soil and Agroclimate, Bogor, Indonesia. Through the staff, the Study Team contacted the Center and decided to ask the Center to do chemical analysis.

#### B.2.2 Soil Sampling

On 29 November 2002, the last day of the planning workshop, soil samples were collected from the three plots in the demonstration farm 'Site A'.

#### B.2.3 Packing and Sending Samples

Each soil sample was put into a zip-lock plastic bag and packed in a box. After the series of procedures for quarantine and getting importation permission from the Indonesian Embassy in Dili, the three soil samples (approximately 500 g each) were sent to the Center for Soil and Agroclimate, Bogor, Indonesia on 4 December 2002. Although the expected arrival date to the Center was 9 December 2002, the package arrived the Center on 16 December 2002. The analysis results are shown below.

Results of Soil Chemical Analysis

Sample	N(%)	$P_2O_5$ (Olsen) (ppm)	$P_2O_5$ (Bray1) (ppm)	$K_2O$ (Morgan) (ppm)
X	0.07	7.8	4.5	94.0
Y	0.07	6.1	3.8	94.1
Z	0.04	5.8	3.8	83.7

Source: JICA Study Team

**Collection of Soil Samples from the paddy fields in the Demonstration Farm**

Date: 29 November 2002

Site: Ailili Village, Manatuto Sub-District, Manatuto District, East Timor

Soil Sample X : Plot A-1



Soil Sample Y: Plot A-3



Soil Sample Z: Plot A-4





## **ANNEX C. WORKSHOPS**

## **ANNEX C. WORKSHOPS**

### **C.1 Planning Workshop**

#### **C.1.1 Participants**

The planning workshop was conducted with the farmers of the project area for five days from November 25 to 29, 2002. Prior to the workshop, the meetings were held with the MAFF's officials in Dili and the DAO in Manatuto on November 18 and 19, respectively for explaining and discussing the framework and procedures of the workshop. The invitation letter to the workshop was then prepared by the Study Team, and sent through the DAO to those pre-listed by the DAO. The Study Team had requested the DAO to invite the following personnel;

- District and sub-district officers in agriculture sector
- Chiefs of the villages (from four villages located in the Laclo Irrigation System)
- Representatives of the farmers in the System (they should cover the whole irrigation area)
- WUA (water users association) officers
- Other advanced farmers
- Representatives from the Mobile Brigade (MB)

The list of the participants is shown in [Table C.1-1](#). It was observed that some farmers participated in the workshop without being invited, but they were agreed to be there as this was considered as one of the indications that the farmers were interested in the project. Regretfully, most of the district officers and all chiefs of the villages attended only a couple of hours of the first day. No sub-district officers attended.

#### **C.1.2 Workshop Program**

The workshop was conducted in the project area at the premise of a farmer. The program is shown in [Figure C.1-1](#). At the commencement, two issues were emphasized; (1) the project approach is highly participatory, and therefore requires active participation and commitments of the farmers at all stages of the project, and (2) the Project does not intend to give things away to the farmers, but rather intend to introduce a cost-sharing system which requires the users pay for what they are benefited.

The farmers cooperated well for the smooth conduct of the workshop, and the intended activities in the program were mostly accomplished.

#### **C.1.3 Stated Problems**

It was observed that the farmers had rarely thought logically of their problems; why the problems have happened, how the problems are linked each other, what actions are needed, etc. The immediate concerns of them were the lack of irrigation water as well as the

equipments necessary for rice production such as tractors, threshers, rice mills, excavators for canal cleaning and sprayers for pesticides. This tendency of the farmers of attributing a problem to “the lack of something” is said to be a common phenomenon in East Timor. This would be due to the reason that they were accustomed to be given things during the Indonesian Regime. It was therefore strongly felt by the Study Team that this sort of farmers’ dependency attitude should be directly tackled by the Pilot Project.

Through the construction of the problems tree, the farmers, though not all, seemed to have started understanding the intension of the Pilot Project as well as the workshop. Their participation to discussion was gradually increased. The problems tree was made based on the farmers’ statement, and the result is shown in Figure C.1-2. It was confirmed that this tree is very similar to the one made in Dili in last August through the workshop with the central and district agricultural officers and NGO staff. Thus, it may be said that the perceptions of the problems related to rice production are mostly shared among the major stakeholders in this sector.

#### **C.1.4 Approaches and Priorities**

The objectives tree was then made, and the identification of the possible approaches for solving the problems was followed. Nine approaches were finally identified as shown in Figure C.1-3.

The discussion was made by the groups of the villages for placing their priorities on those approaches (refer to Table C.1-2). In general, the high priorities were put on “training” and “irrigation canal” approaches. The irrigation canal approach received the highest attention because the farmers need to clean their secondary and other canals at this time just before irrigation water comes. “Weeding” approach seemed to be also highly needed; however, there was a risk of misunderstanding that farmers might have meant the preparation of lands that have been grassed for a long time. “Draft power” and “seeds” approaches came next, as the second highest needs. “Water management”, “nursery” and “fertilizer” are the third needs. Interestingly, “threshing and milling” approach is always ranked lowest.

#### **C.1.5 Project Components**

The next activity was to discuss how the Project is planned. Through the workshop, the farmers were explained that the objective of the Project is to raise their own capacities so that they may become able to alleviate the problems by themselves. It was also repeated that the project is not intending to give them something which could be used only for a short time, but rather to strengthen their abilities which could last for a long time.

Through the discussion for the project planning, the nine approaches were eventually integrated into four components; “Production Technologies of Rice”, “Farm Mechanization”, “Irrigation Canal” and “Water Management”. It was confirmed with the farmers that in this way almost all of the stated problems would be tackled by the Pilot Project

### **C.1.6 Project Design Matrix (PDM) and Plan of Operations (PO)**

The project design matrix (PDM) and the plan of operations (PO) for each component were then made (see Chapter I). For the PDM, most of the time was allocated to build “Narrative Summary” and “Inputs”. “Indicators” and “Important Assumptions” were left for the Study Team to complete later. In the discussion of the PO, the responsible persons for each activity were decided from the farmers, the Study Team and CARE. The names of the district officers could have been included if they had participated in the workshop.

The farmers were selected as the direct recipients of the project activities and formed into groups. The groups differ component by component. The necessary inputs for all activities were also discussed, including who should prepare what items, and what items the farmers should share the costs. The details of the cost-sharing system, e.g., how much the farmers should bear, who should collect money, where the money should be deposited, etc. were yet to be discussed and agreed. The discussions were supposed to be held in early January 2003 before the major activities started.

Through the workshop, the Study Team was able to discuss in details with the farmers on the current situations of farming, irrigation practices, farmers’ groups, etc. The important issues, which the Study Team should pay attention and take actions during the implementation period, were identified. Those issues are described in the main text.

**Table C.1-1 List of the Participants of the Planning Workshop (1/2)**

**FARMERS**

No.	Name	Village	Secondary Canal	Occupation	Remarks
1.	Sebastiao da Costa Oliveira	Ailili	Alaran	Farmer	
2.	Jose Filipe Soares	Ailili	Iruin Leen	Farmer	
3.	Mrs.Pascoela Soares	Ailili	Inkeru	Farmer	
4.	Luis Fernandes	Ailili	Inkeru	Farmer	
5.	Sebastiao de Carvalho	Ailili	Inkeru	Former Chief of Village	
6.	Paul Soares	Ailili	Inkeru	Farmer	
7.	Malikias de Carvalho	Ailili	Inkeru	Farmer	
8.	Zulmiro G.Ximenes	Ailili	Kilela	Farmer	
9.	Manuel Alves	Ailili	Hatu Wai	Farmer	
10.	Francisco Soares	Ailili	Hatsadan	Former Chief of Aldeia	
11.	Francisco Soares	Ailili	Iruin Leen	Farmer	
12.	Mabana Soares	Ailili	Dimoni	Farmer	
13.	Antonio de Carvalho	Ailili	Dimoni	Farmer	
14.	Francisco Soares	Ailili	Dimoni	Former Chief of Aldeia	
15.	Gaspar Soares	Ailili	Dilor	Farmer	
16.	Agostinho Soares	Aiteas	Wesor	Former Chief of Aldeia	
17.	Mariano Soares	Aiteas	Inkeru	Farmer	
18.	Sebastiao Soares	Aiteas	Inkeru	Farmer	
19.	Antonio Soares	Aiteas	Inkeru	Farmer	
20.	Joao de Carvalho	Aiteas	Hatu Wai	Farmer	
21.	Joao Soares Rai	Aiteas	Iruin Leen	Farmer	
22.	Manuel de Carvalho	Aiteas	Inkeru	Farmer	
23.	Joao Soares Lay	Aiteas	Inkeru	Farmer	
24.	Manuel Soares	Aiteas	Kilela	Farmer	
25.	Domingos Soares Antu	Sau	Inhunwen	Farmer	
26.	Antonio Soares Noco	Sau	Dimoni	Farmer	
27.	Simao Soares	Sau	Dimoni	Farmer	
28.	Vicente Soares	Sau	Dimoni	Former Chief of Aldeia	
29.	Domingos Soares	Ma'abat	Inkeru	Farmer	
30.	Sebastiao Soares	Ma'abat	Inkeru	Former/Present Chief of Sub Aldeia	
31.	Mrs.Engracia da Silva	Ma'abat	Inkeru	Farmer	
32.	Joao Soares Eok	Ma'abat	Hatusadan	Farmer	
33.	Benjamin Hale	Ma'abat	Hatusadan	Farmer	From Maliana
34.	Domingos Luis Soares	Ma'abat	Inkeru	Farmer	
35.	Domingos F.Soares	Ma'abat	Inkeru	Farmer	
36.	Manuel da Silva Buik	Ma'abat	Kilela	Former/Present Merino	
37.	Mario Oto	Ma'abat	Kilela	Farmer	
38.	Joao dos Santos	Ma'abat	Kilela	Farmer	
39.	Joao de Carvalho	Ma'abat	Hatu Wai	Farmer	

**Table C.1-1 List of the Participants of the Planning Workshop (2/2)**

**OFFICIALS**

No	Name	Office	Position	Remarks
40.	Egas da Silva	MAFF	Training Unit Co-ordinator	Moderator
41.	Julio Correia	MAFF	Research and Extension Center	
42.	Pedro Vital	District	District Irrigation Officer, Manatuto	
43.	Caetano Jose Soares	District	District Agriculture Officer, Manatuto	
44.	Lourenco Bronoizio Soares	WUA	President	

**NGO**

No.	Name	Office	Position	Remarks
45.	Marcelo Caetano de Sousa	CARE	Field Officer, Crop Production	
46.	Adalberto Gaspar	CARE	Field Officer, Farm Machinery	
47.	Thomas Francisco	CARE	Field Officer, Irrigation	

**JICA STUDY TEAM**

No.	Name	Office	Position	Remarks
48.	Seiji Takeuchi		Team Leader Development Planning	
49.	Keiji Iizuka		Farm Management/Agronomy/ Coordinator Team leader	
50.	Sakae Tamura		Farm Machinery	
51.	Hiroshi Okabe		Farmer/Fisherman Organisation	Moderator
52.	Tatsuya Ieizumi		Agro Fishery Infrastructure	
53.	Shohei Natsuda		Project Evaluation	
54.	Eichi Shibata		Participatory Development/Co-ordinator	

**Table C.1-2 List of the Priorities of the Approaches by Villages**

Priority	Ailili	Aiteas	Ma'abat	Sau
1	<b>Training</b> (including the use of fertilizer)	<b>Irrigation</b> (esp. canal cleaning)	<b>Irrigation</b> (esp. canal cleaning)	<b>Irrigation</b>
2	<b>Irrigation</b> (esp. canal cleaning)	<b>Training</b> (esp. farming, water management)	<b>Weeding</b> (need collective work)	<b>Weeding</b>
3	<b>Draft power</b> (including the use of draft animals)	<b>Weeding</b>	<b>Training</b>	<b>Training</b> (including other approaches - no more priorities)
4	<b>Seeds</b> (quality and uniformity)	<b>Draft power</b>	<b>Seeds</b> (need good quality)	
5	<b>Weeding</b> (need to make it faster)	<b>Seeds</b> (need good quality)	<b>Nursery</b>	
6	<b>Water management</b>	<b>Fertilizer</b>	<b>Water management</b>	
7	<b>Fertilizer</b>	<b>Nursery</b> (with fertilizer)	<b>Draft power</b> (animals and machines)	
8	<b>Nursery</b> (need collective work)	<b>Water management</b> (esp. suitable water depth for varieties and growth stages)	<b>Fertilizer</b>	
9	<b>Threshing and milling</b>	<b>Threshing and milling</b>	<b>Threshing and milling</b>	

**Figure C.1-1 PCM Planning Workshop Program**

**Workshop Program**

**Date:** from November 25 (Mon) to 29 (Fri)

**Time:** from 9:00 am to 4:00 pm

**Place:** To be announced by District Agricultural Officer

**Purposes:** (1) Identification of the problems in the area  
 (2) Discussion on the solutions  
 (3) Planning of the Pilot Project

**Participants:** - District and sub-district officers in agriculture sector  
 - Chiefs of the villages (from four villages located in the Scheme area)  
 - Representatives of farmers in the Scheme (should cover the whole irrigation area)  
 - WUA (water users association) officers  
 - Other advanced farmers  
 - Representatives from the MB (Mobile Brigade)  
 - NGO  
 - JICA Study Team

**Schedule:**

<b>Date</b>	<b>Activities</b>	<b>Outputs</b>
1) 25 (Mon)	(1) Explanation of the Pilot Project by JICA Study Team (2) Self-introduction by all participants (3) Discussion on the stakeholders in agricultural development of the area (4) Discussion on the problems in the area	
2) 26 (Tue)	(1) Continue - discussion on the problems in the area (2) Problems analysis	1. Problem tree
3) 27 (Wed)	(1) Objectives analysis (2) Discussion on the solutions – necessary approaches (3) Discussion on project design – design of the Pilot Project’s components	1. Objective tree 2. List of the necessary approaches
4) 28 (Thu)	(1) Continue – project design (2) Discussion on the details of project implementation – project activities, schedules, expected results, responsible persons (groups), etc.	1. Project Design Matrix (PDM)
5) 29 (Fri)	(1) Continue – details of project implementation (2) Discussion on the formation of responsible groups for the project implementation – roles and responsibilities of the farmers, officers, NGOs, JICA Study Team	1. Plan of Operations (PO)



Problems Tree

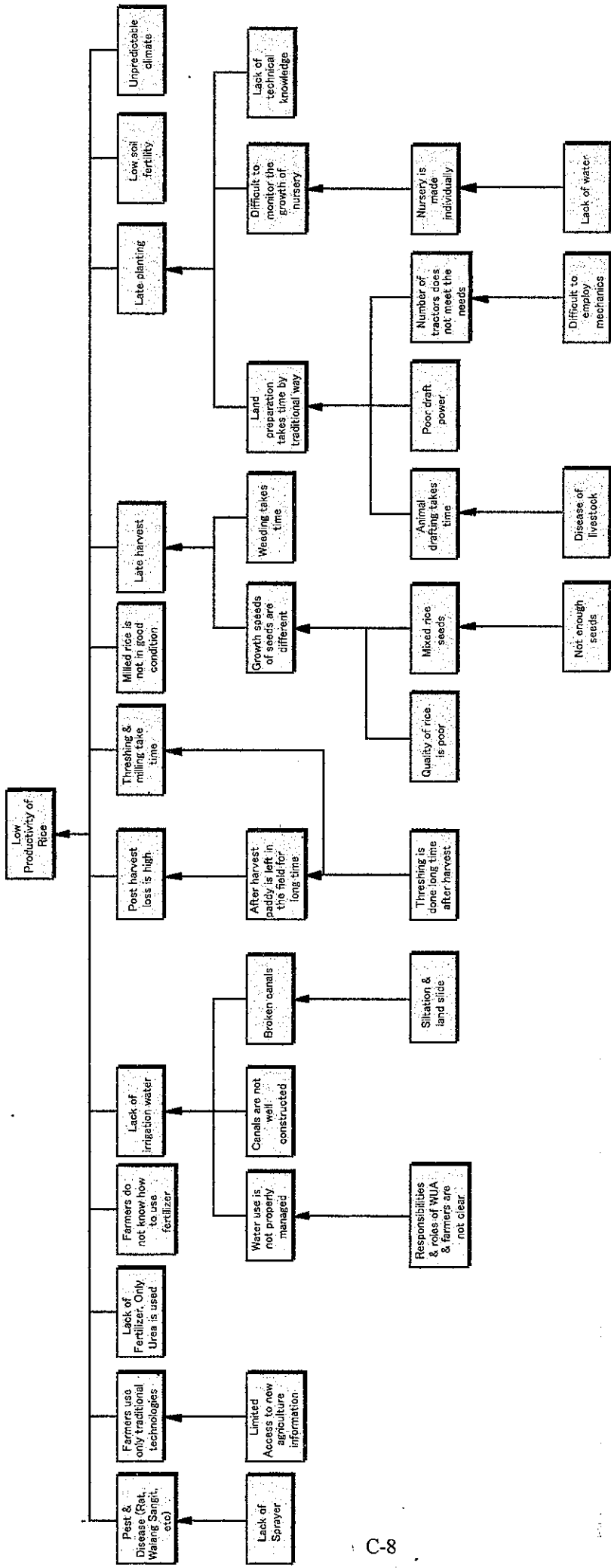


Figure C.1-2 Problems Tree

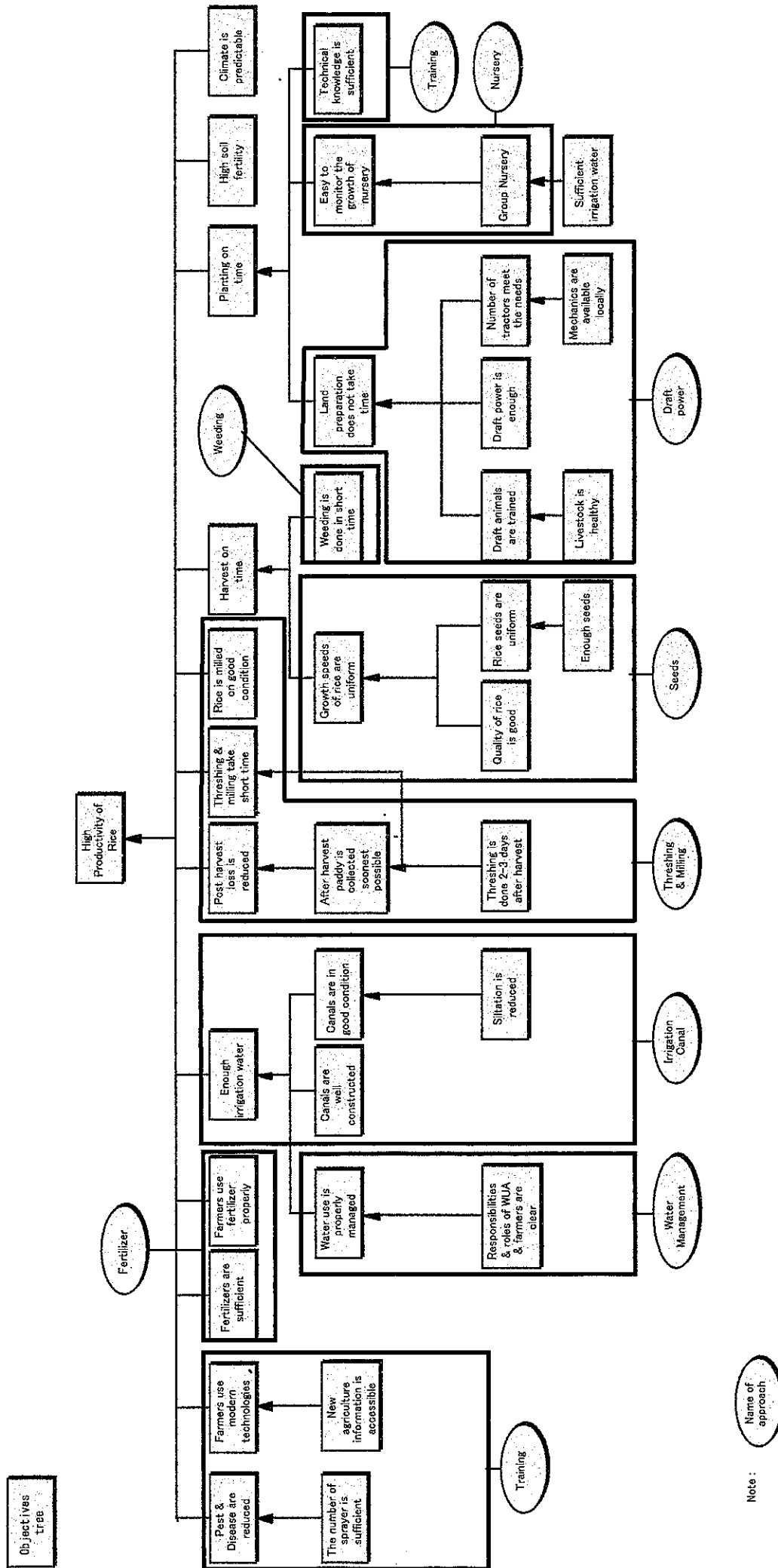


Figure C.1-3 Objectives Tree

Note :  
Name of approach