

FINAL REPORT

**BY :
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**JICA EXPERT IN FARMER'S GROUP STRENGTHENING
INTEGRATED AGRICULTURAL AND RURAL DEVELOPMENT
PROJECT IN SOUTHEAST SULAWESI PROVINCE**

I. INTRODUCTION

1. Background information

(General nature of the project for which the expert required)

A recent study of the Government of Indonesia has concluded that 16.0% of Indonesia's population of 185 million, numbering 29.6million, live below the poverty line. Like in most other developing countries, the population of Indonesia is predominantly rural, with more than 70 % of them living in rural areas, eking out a living farming. In the absence of established irrigation facilities, the farmers have to depend on the seasonal rainfall to nourish the crop and sustain the agricultural activities.

The current population of South East Sulawesi stands at less than 4 million, growing at an annual rate of 2%.

Approximately 60 % of the population are below 18years of age. According to the Government statistic, 30 % to 35% of the households have to feed, clothe, house and educative persons with less than Rp.87.750(US \$ 42) per month.

Considering these factors, the Government of Indonesia focusing its development priority on the Agricultural sector, with more emphasis on the individual farmers and farmer groups, in order to assist them improve their agricultural yield and thereby their income. The population of Indonesia, fourth largest populated country in the world, is beginning to have effects on the size of land holdings, with average landholding varying between half an hectare to one hectare of land. Thus the Government's efforts are directed at improving the yield per hectare of land and consequently, increase the income of the agriculturists.

However, it must also be pointed out, that the Government does not view the agricultural development efforts in isolation, but rather sees such efforts in the overall development context of the provinces. As such these efforts are appropriately tied in with the overall provincial and regional development plans, in order to contribute towards the promotion of "Integrated Agricultural and Rural Development Plan in the Province of Southeast Sulawesi". These efforts are intended to ensure a balanced Regional Development Program and help the efforts towards poverty alleviation, which continues to receive priority attention in then "5th Five Years National Development Plan (REPELITA.V) of Indonesia". The Japanese Technical

Cooperation and Assistance Program will be implemented in coordination with and in support of, the efforts by the Government of Indonesia.

In line with the Government priorities, this Project was designed to introduce and impart appropriate knowledge and technology to the individual farmers and farmer groups and thereby, contribute towards the Agricultural and Rural Development of the least developed Regions of the country. The Project has been design to address and adapt to the natural and social conditions in the rural area, aimed at increasing of farmers' income and the improvement of their living standard through higher productivity. This the Project seek to achieve through the introduction of higher agriculture technology and the diversification of agricultural production.

2. Specification for the post:

1) Post title :

JICA Expert-

The Integrated Agricultural and Rural Development Project under the scheme of Ministry of Agriculture.

2) Duties for which the expert was responsible:

Farmer's group strengthening

3) Period of service:

August 26, 1991 through August 25, 1994 (Three years)

II. PROJECT GOALS AND PROJECT ACTIVITIES

1. The Goals of the Project

Final Goal:

Alleviation of rural poverty and improvements in the living conditions of farmers, living in the eastern parts of Indonesia, through the Integrated Agricultural and Rural Development program.

Intermediary Goals :

Increasing the income level of farming communities through the introduction of high yielding varieties of crops and thereby increase the yield per hectare of land and contribute towards increased living standards of the rural people.

2. Main Project Works:

This project was intended as a development model for the rural areas of Southeast Sulawesi. Main activities of the project consisted of the following:

- 1) Construction of Irrigation Facilities.
- 2) Demonstration and training on the field management technique and land reclamation.
- 3) Construction of agricultural support and rural facilities.
- 4) Guidance on improved farming techniques and practices.
- 5) Mechanization of the farming system to increase yield per hectare.
- 6) Encourage farmer's participation in the development through the strengthening of farmer's groups.

These activities were supported by the scheme of Project cooperation system of JICA, which consisted of technical assistance, construction of agricultural infrastructure and training activities. The System of JICA Cooperation and structure of work flow in the Project is shown Fig. 1.

3. Role of "Farmers Group Strengthening" in the project:

This program of agriculture and rural development was intended to develop strong self-reliance among the farmers and their society through enhancement of the farmer's participation, improving their efficiency and thereby increasing the productivity, in order to improve the overall standard of living of the people.

The process of strengthening the farmer's participation in the development process, consisted of strengthening the existing groups and establishing new groups. The actual activities under this sectional program are as follows:

- 1) A detail study on Farmer groups existing activities.

The existing conditions of administrative structures of the Farmer groups in villages are investigated, for the understanding of farmer's participation in Village Development Programs :

- a) Present activities in the village

Before construction works started, basic data of the villages and farmer's participation in the rural development.

- b) Review of the village formation

Study on some projects and farmer groups on the following types of activities:

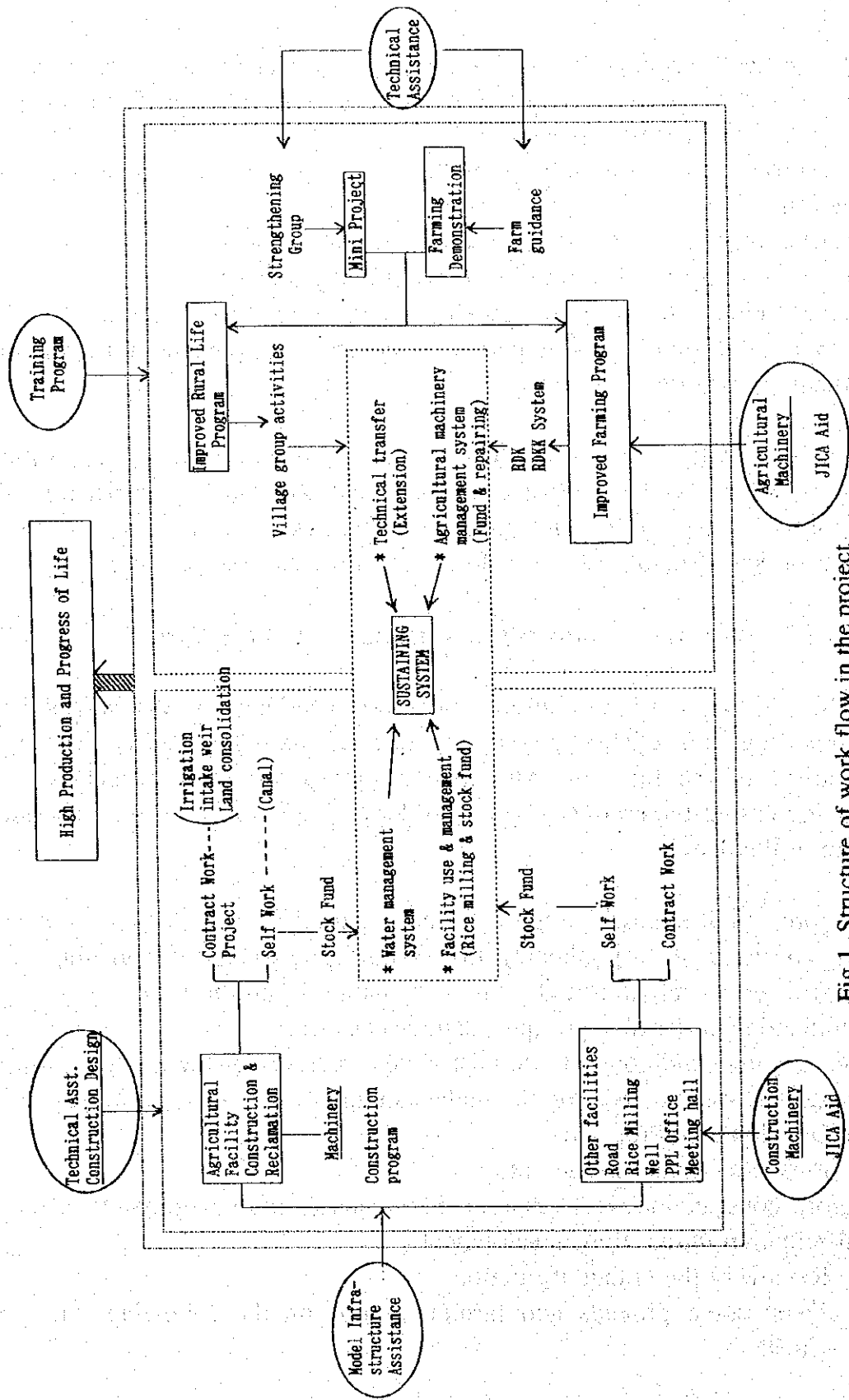


Fig.1 Structure of work flow in the project

- Rice Growing farming
- Upland Crops farming
- Estate Crops farming
- Sago farming

2) Formation and Strengthening of Farmer's group in the construction activities.

Formation and Strengthening of farmer's group to participate in the construction works and farming works.

- a) Strengthening the groups and orientation to the groups about construction works.
 - b) Assist the groups formation for P3A, KUD, etc.
 - c) Counseling and guidance for group activities which are development works, stock fund system and other related works.
 - d) Maintaining the facilities and sustaining the activities by the group (Rice Milling Unit, Thresher, Power Tiller, Dryer, etc.).
- 3) Supporting activities for the strengthening of rural groups.

a) Mini-project:

Supporting group activities which poultry, vegetable gardening, fruit tree seedling, mini field management, improved local food, cashew nut processing, etc. by woman's group, youth farmer group and other farmer's group.

b) Union Farmer's Group (UKT), Water Users Association (P3A), Rural Cooperative Association (KUD) supporting activities. Improved farming linked up with them by RDK, RDKK method (Farm planning method, See **Annex III**).

4) Training to the farmers and groups.

Carrying out the training to rural people and its group for accelerating the development:

a) Farmer's Group

- Strengthening of farmer's group
- Strengthening of rural women's group
- Improvement of rural life

b) Other training

- Farmer's youth training
- Less experienced farmers training
- Farmer's day
- Study tour to improved farming areas

4. Structure of Work Flow of the Farmer's Strengthening

This field activity was related to all of the activities in the Project, especially promotion of 3 groups in the village. The farmer's group activities were directly related to agricultural production. Women's groups and youth groups in a village can also assist and support the rural community development. In this Project, development of agricultural infrastructure was one of the main tasks. But small scale construction works requires more man power from the villagers. Therefore, these development works required the participation of farmers themselves. Paddy land development consisted of 3 main works which are irrigation-intake weir, canal construction and land consolidation. Irrigation-intake weir was constructed by the contractor. Land consolidation was managed by the Project directly. Canal construction was done by the contract works of farmers group. Through these construction works, the Project treated a stock fund system in a group. A part of labor payment on construction was stocked in a farmer group for supporting their next phase of activities.

After completion of the land development, the facility is intended to be managed by the Water User Association, P3A, which are needed to strengthen the groups. The farmer groups can introduce the improved farming system in this area, by way of RDK/ RDKK system; planning definitive, supply, grouping are treated in farmer's group.

Another activity of this section is introducing agricultural machinery rental system and stock fund; the machine was supported by JICA aid.

Machinery will be operated and managed by operator who are selected from among the villagers. All of the management fee/expenses will be balanced by income from rental fee.

Some portion of the rental fee should be retained in the group for the replacement/repair of machinery (reduction fee). These activities can help to improve the farming. Other groups (woman's group and youth group) can implement the group activities named "Mini-Project", that can planned on a small scale by themselves. Such Projects can support the activities by supplying a part of materials and technical assistance.

Through carrying out the activities of Mini Projects, the groups can be made active and strengthened. Another aim of the Mini-Projects, is the

sustainability of the group activities; introducing revolving system or selling business are intended to strengthen sustainability for example, a group will issue 100 hen from the Project as assistance and after one year the group should return 100 hen to the Project, to be distributed to other members of the group (See Fig. 2).

5. Survey of Farmer's Group and Present Situation of village

When development activities are started in a village, survey of farmer's groups, agriculture field conditions, society condition and other basic matters are investigated.

As farmer's group in the villages were investigated, member's family, age, ownership of lands, other jobs beside farming were also included to the list for investigation. Ethnic status of the members was also investigated in the survey, because paddy/rice cultivation has been done mostly by the transmigrants. Main traditional agriculture in Southeast Sulawesi people, Tolaki, is upland rice growing by shifting cultivation and sago palm agriculture. But recently, paddy/ rice cultivation became dominant agricultural produce in this area. It can be said, therefore, that paddy/rice has been newly introduced by immigrant people, who are Buginese, Torajanese, Javanese, Balinese, etc.. The technology of paddy cultivation has been transmitted by the transmigrant to Tolaki people. Sometimes Tolaki people also cultivate paddy in their land holdings by themselves, through their experience gained in working in paddy production land holding of the transmigrant people.

Farmer's group system is needed for the paddy/rice growing, to ensure equitable management of water resources in the society, Especially, water for irrigated paddy fields should be managed efficiently, to benefit the whole society and/or the groups.

However some farmer's group have also been formed for other farming activities, such as, upland management, estate crops management, livestock management, etc..The survey of farmer's group was done individually, village to village. And data can be shown follows (Annex 1) :

6. Construction Works and Farmer's Group Activities

Most of the works are managed by the Project. The Project has classified

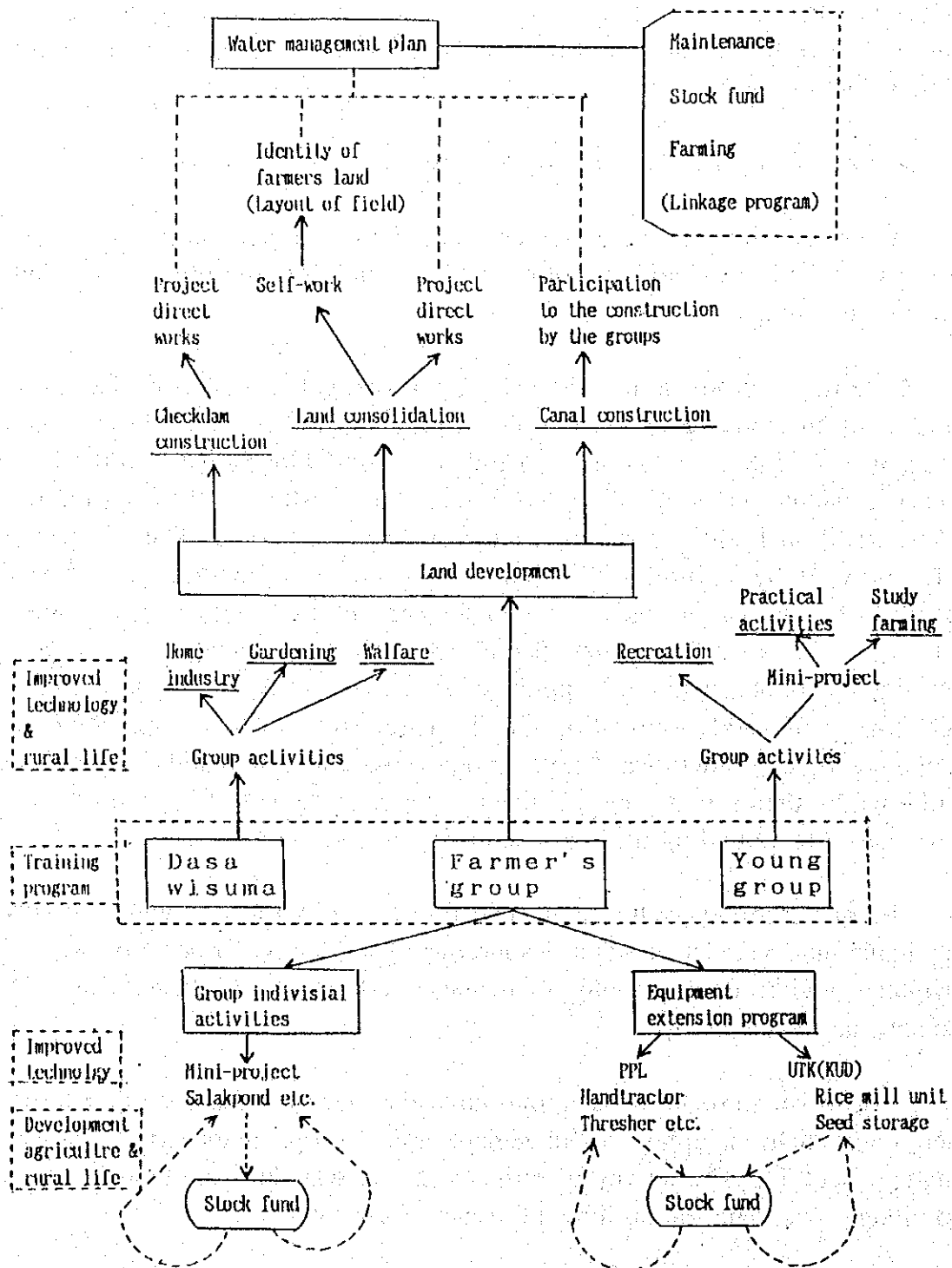


Fig.2 Farmer's group strengthening activities

3 categories of construction works.

1) Major/large scale construction works by the Contractor ; which are Intake Weir and accessory work, PPL Office, Meeting Hall and Cattle Fattening Yard.

2) Land reclamation by the project staff.

3) Small scale construction : canal excavation, well digging by the farmer's group.

Especially canal reclamation and well digging works were done by the farmer's group. Therefore, they can be described in detail, the schedule of construction.

The schedule of Meeting and implementation on construction works participated by farmer's group

June	12	1st village explanation and discussion
July	1	General explanation about the development plans to officials concerned who prefecture, Sub-district villages.
Aug.	25	In-house meeting in the Project
	27	2nd village; explanation and discussion
	29	In-house meeting
Sep.	23	village; explanation and discussion (Detail discussion about construction)
	3	Fixed position of the work by farmer ' s group
	5	Start the excavation works in canal by farmers group
	11	1st payment and stock fund
	18	2nd payment and stock fund
	24	3rd payment and stock fund
	26	4th payment and stock fund and completion of the work.

7. Stock fund system and project sustaining system

(Machinery rental system & stock fund repairing system & sustaining)

Farmer's Group strengthening activity has introduced stock fund system to the farmer's group or village society. Technology transfer method is mostly introduced /applied to the farmer's in the agricultural development project, as

part of the efforts to ensure Project sustainability. However, technology transfer alone can not achieve the project sustainability in a practical sense. It is necessary to approach the concept of sustainability through technical and financial support in the Project.

Technical assistance can be widely used as training method and financial support can be applied by loan or grant assistance. But stock fund system can also help the introduction of sustainability for the finance component of the Project. Our Project has practiced the technical transfer through farmer's training program and financial sustainability by stock fund method through rental system of machinery and excavation work of canal.

8. Other activities in the villages

(Mini-project & Training in a village)

1) Stock fund on excavation work of construction :

Direct construction works were managed by the Project. Farmers participated in these works by the system of Swadaya, contracted with farmer's group. After completing the works, the groups can gain the labor charge. However, groups should reverse 25 % or 30% of labor fee for the stock fund to the group. This stock fund can be used the group farming activities such as purchasing of fertilizers and chemicals, tools, etc. Some experiences in the villages are shown in the following tables.

2) Stock fund on rental system of machinery:

Several machinery which are provided by the Project, are introduced for farmer rental system and stock fund system. Fig.3&4 shows balance of the rental fee, how to use in several machines. Ratio of stock fund is fixed by the project depending on the machinery. Most of the stock fund can be used for the renewal of machinery, for reduction cost, etc.

3) Rice milling unit management system and stock fund

Rice milling unit was constructed by the Project for the promotion of farming activities which is presently supplying valuable rice being sold in the village. There is much demand for milling rice in the village. The Project recommended to the farmer's group to maintain and sustain the unit, and to introduce the stock fund system. The operation and management of the unit was handed over to KUD. If there is no KUD, Union Farmer's Group should be responsible to manage the unit. Income from the unit should be made clearly to balance the expenditure which are included in the stock fund. Stock

SISTIM PENGOLAHAN MESIN-MESIN DI DESA

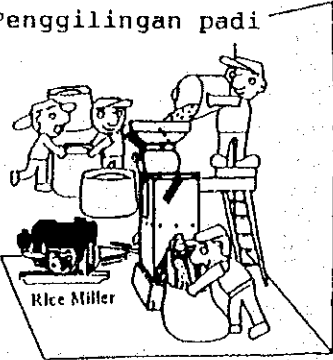

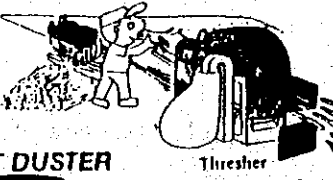
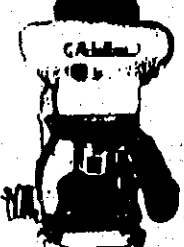
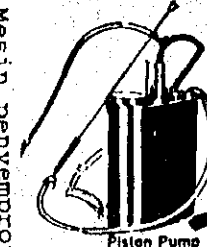
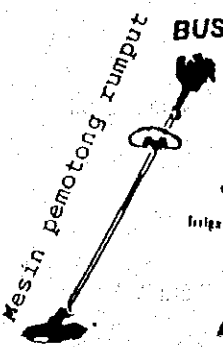

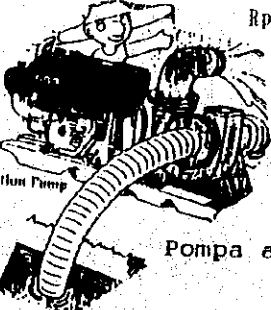
	Upah Pemakaian	Pengoperasian	Penyusutan	Tabungan
<p>Penggilingan padi</p>  <p>Rice Miller</p>	10 % Jasa Giling	35 %	10 %	20 % 35 %
<p>Traktor tangan</p> 	<p>Sawah Rp. 110.000/ha</p> <p>Lahan Kering Rp. 75.000/ha</p>	47 %	33 %	20 %
<p>Mesin perontok padi</p>  <p>Thresher</p>	Jasa Perontok 10%	50 %	40 %	10 %
<p>MIST DUSTER</p>  <p>Mesin penyemprot</p>	Rp. 1.000/hari	-	50 %	50 %
<p>BUSH CUTTERS</p>  <p>Piston Pump</p>	Rp. 1.000/hari	-	50 %	50 %
<p>Mesin pemotong rumput</p> 				
<p>Alat penyemprot manual</p> 				
<p>Pompa air (irigasi)</p>  <p>Irigation Pump</p>				

Fig.3. Rental systems of farm machinery to the farmers in the project.

SISTIM PENGOPERASIAN PENGGILINGAN PADI

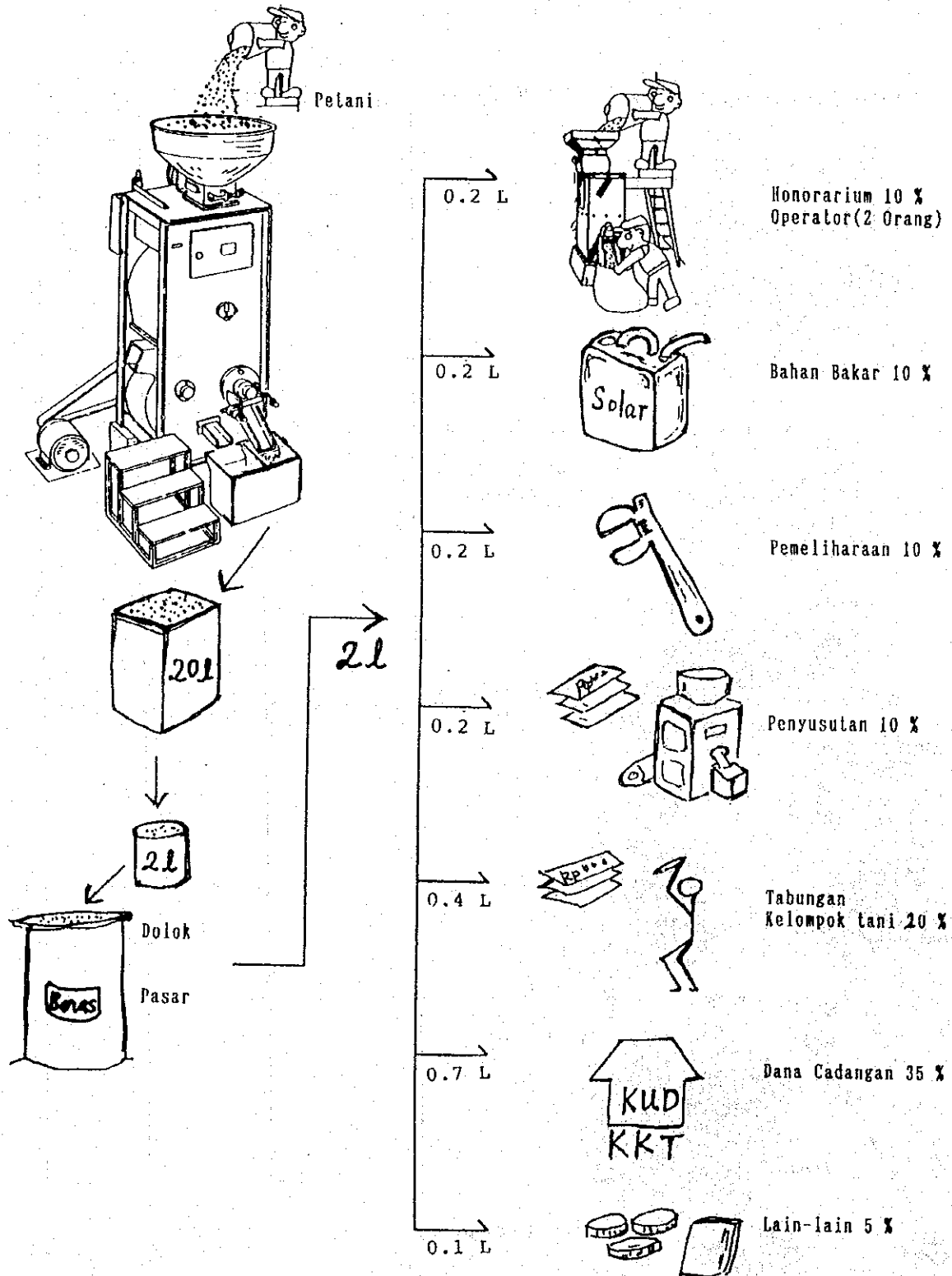


Fig.4 Management systems of rice milling units in the project

Table 1 Stock fund of Farmer's groups by the works of irrigation canal construction in Ranomeeto Village

RANOMEETO VILLAGE

NO.	NAME OF FARMER'S GROUP	FIRST EXCAVATION (m)	PAYMENT (Rp.)	SECOND EXCAVATION (m)	PAYMENT (Rp.)	TOTAL STOCK FUND (Rp.)
1	Andinu	105	627,000	46	380,000	360,000
2	Tunas Makmur	100	752,000	37.5	279,000	325,000
3	Makmur Jaya	100	751,000	50	376,000	363,000
4	Makmur Samaturu	100	1,116,000	37.5	301,000	403,000
5	Kegiatan Samaturu	105	751,000	37.5	363,000	376,000
6	Sri Mangiyub	100	634,000	37.5	340,000	321,000
7	Harapan Makmur	100	663,000	37.5	372,000	333,000
8	Mokora Meindio	100	815,000	50	384,000	383,000
9	Sri Kembang	100	821,000	37.5	278,000	361,000
SUB TOTAL		910	6,930,000	371	3,073,000	3,225,000

- * Total of stock fund is Rp. 3,225,000
- * Workss started on September 5, 1992 and ended on September 26, 1992

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Table 2 Stock fund of Farmer's groups by the works of irrigation canal construction in Palangga Village

PALANGGA VILLAGE

NO.	NAME OF FARMER'S GROUP	FIRST EXCAVATION (m)	PAYMENT (Rp.)	SECOND EXCAVATION (m)	PAYMENT (Rp.)	TOTAL STOCK FUND (Rp.)
1	Landebawo/Sorume 1	79.4	373,000	50	175,000	136,000
2	Meohai/Sorume 2	75	359,000	50	138,000	123,000
3	Samaturu/Sorume 3	84.8	416,000	50	181,000	149,000
4	Mokoau/Sorume 4	75	351,000	50	154,000	125,000
5	Monapa/Sorume 5	75	349,000	23.6	98,000	111,000
6	Saramase/Sorume 6	74	320,000	38	99,000	104,000
7	Tosiba Jaya/Sorume 7	75	373,000	50	131,000	125,000
8	Padaidi/Sorume 8	75	312,000	25	91,000	100,000
9	Sipatokong/Sorume 9	50	373,000	50	150,000	130,000
10	Sama Jaya/Sorume 10	75	348,000	25	92,000	110,000
SUB TOTAL		738.2	3,574,000	411.6	1,309,000	1,213,000

File : STOCK

Total of stock fund = Rp. 891,000 + Rp. 322,000 = Rp. 1,213,000

- * Date of 1st payment on August 2nd, 1993
- * Date of 2nd payment on August 11th, 1993
- * Work started at July 25 and ended at August 10, 1993

**Table 3 Details of the revenue of farmer's group for canal lining
BK0 - BK1 and BK1- BK1KR (Kiaca village in 1994)**

NO.	NAME OF FARMER'S GROUP	DISTANCE (m)	COST (Rp.)	FIRST SAVING IN BANK 30 %	DISTANCE (m)	SECOND SAVING IN BANK	TOTAL SAVING
1	Mujur	100	336,000	100,000	80	69,000	169,000
2	Tekukur Indah	100	400,000	120,000	80	85,000	205,000
3	Alam Raya	100	457,000	137,000	60	49,000	186,000
4	Bina Karya	100	354,000	106,000	60	58,000	164,000
5	Merпали Indah	100	354,000	106,000	60	54,000	160,000
6	Harapan Makmur	100 18 23.2	970,000	290,000	90	139,000	429,000
7	Subur	100 20 23.6	693,000	208,000	60	110,000	318,000
8	Suka Maju	100	478,000	143,000	60	60,000	203,000
9	Mekar	100	631,000	189,000	60	50,000	239,000
10	Wekiri Indah	100	417,000	125,000	-	-	125,000
11	Tak Disangka	125	473,000	142,000	90	77,000	219,000
	TOTAL	1,209.8	5,563,000	1,666,000	700	751,000	2,417,000

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Table 4 Report of stock fund and utilization of Hand Tractor
in Ranomeeto village (1993)

/2, 1993.

NO	NO OF TRACTOR	RECEIPT (Rp.)	TARGET (Rp.)	EXPENDITURE (Rp.)	STOCK IN THE BANK (Rp.)
1	B9	739,825	1,290,630	563,112	176,713
2	B7	595,250	705,650	338,400	256,850
3	B1	1,167,200	1,395,350	636,162	531,038
		2,502,275	3,391,630	1,537,674	964,601

Ranomeeto Februari 4, 1994
P P L Ranomeeto,

(S U M I)

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NIP. 080.073.805

NOTE :

1. Income target (Rental charge) = Rp. 3,391,630
2. Receipt from farmers = Rp. 2,502,275 (73,78%)
- 
- Balance = Rp. 889,355 (26,22%)

fund should also be divided for 3 items as follows:

- i) Stock fund for renewal machine (reduction fee)
- ii) Stock fund for promotion of farmer's group activities (compensation money to farmer's group according to their milling amount)
- iii) Stock fund for KUD activities

The percentage of earnings under stock fund system, to be allocated under each of the above three categories, is to be decided in a meeting of the farmer's groups. Recommended proportion/percentages is shown in Fig. 3 and Fig. 4.

Present situation of stock fund by canal excavation in Ranomeeto, Palanggar Kiaea village is shown in table 1. And one farmer's group used the stock fund to buy fertilizer for the members on May 1994. The stock fund of other villages, Palangga and Kiaea, shown in Table 2 and Table 3, and stock fund rental fee of hand tractor is shown in Table 4.

## **9. Mini Project in the Groups**

A number of small scale economic activities were carried out in the group's villages, by the farmer's group, farmer's youth group, and farmer's women groups.

The project supported the activities of the groups by way of material assistance and technical advice/support.

Several activities carried out under this Mini Project detailed as below (see **Annex I.**)

## **10. Establishment of Working Group the Project**

The Project has introduced several working groups for the activities which are in the office and villages. The working groups can help to make smooth functioning and provide linkage service for the various sections. The work flow of the Project activities established working groups is shown in Fig. 5, and details of group roles are as shown **Annex II.**

## **11. Case study of agricultural development through the activities of "Farmer's group strengthening"**

### **11.1 Ranomeeto village.**

WORK FLOW OF THE PROJECT ACTIVITIES .

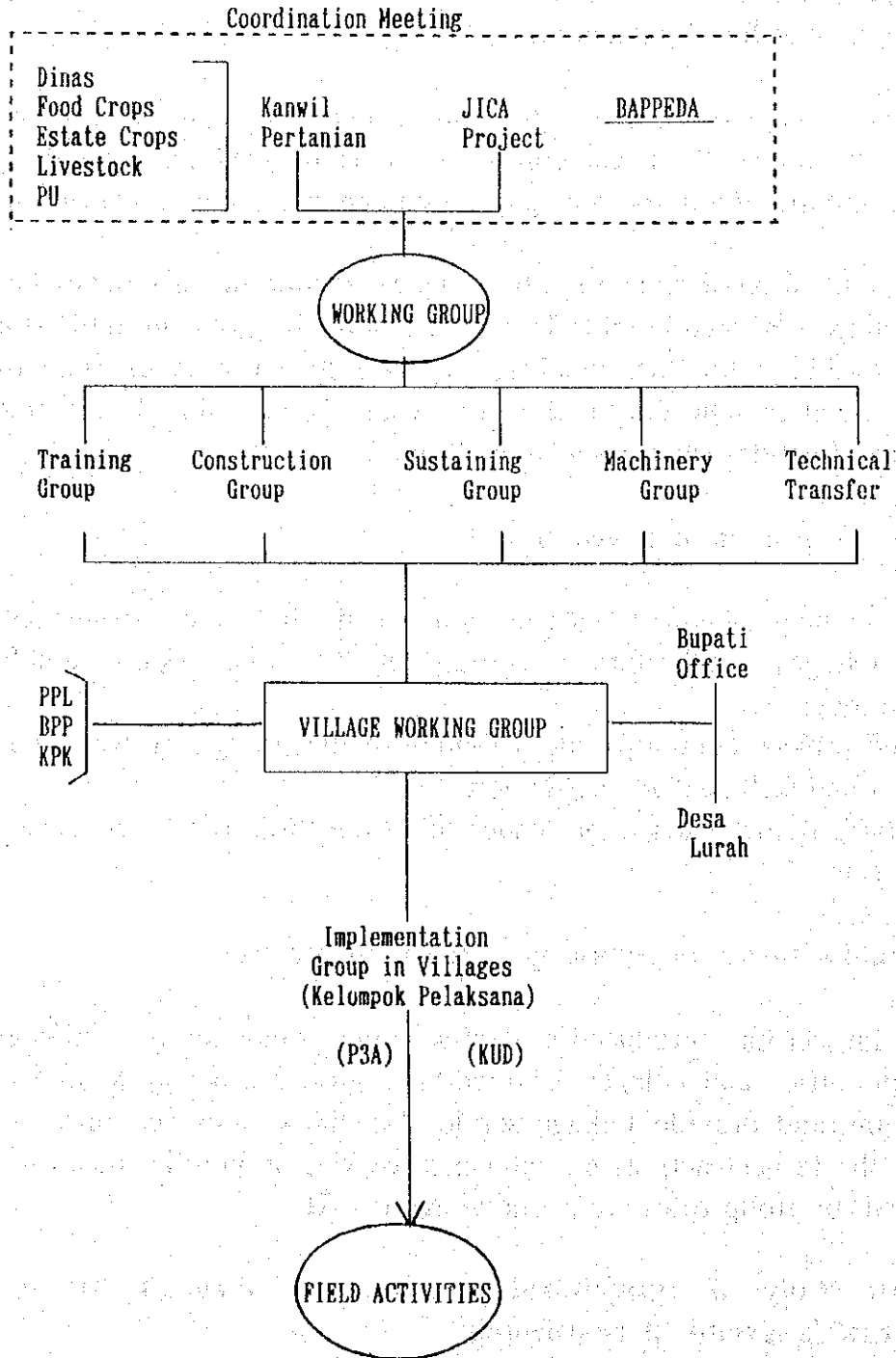


Fig. 5 Work flow of the projet activities

## 1) Condition of Ranomeeto village

### i) Geographical and Natural condition

- Swamp area: southeast part (Cyperaceous weed & Alang-alang)
- Hilly area: northwest part (estate crops)
- Soil condition: much silt content and low pH(pH6.5-4).  
drainage is not good and less organic matter.
- Rainfall :1,800 mm
- Temperature:32-20°C
- Limited long river (limited catchment area)

### ii) Social condition

- Mixing ethnic Tolaki, Java, Bugis

## 2) Analysis of present condition in Ranomeeto village

### i) Farmer's group

9 groups when project activities were started. 11 groups are now operational.

### ii) Youth group

1 group when project activities were started, 3 groups are now operational.

### iii) Farmer's woman group

Dasa Wisma activities only 1 group was established during the Project cycle.

### iv) P3A

### v) KUD

## 3) Farming and farmer's group

### i) Present farming

- Paddy
- Upland
- Estate

ii) Improved farming and group activities were introduced.

## 4) Other activities in the village

### i) Mini-project

### ii) Training

## 11.2 Project implementation in the case of Ranomeeto Village

### 1) Method and systems of the project implementation

#### i) Establishment of working group in the project.

Since the Project scales to ensure "Integrated Development" of villages,

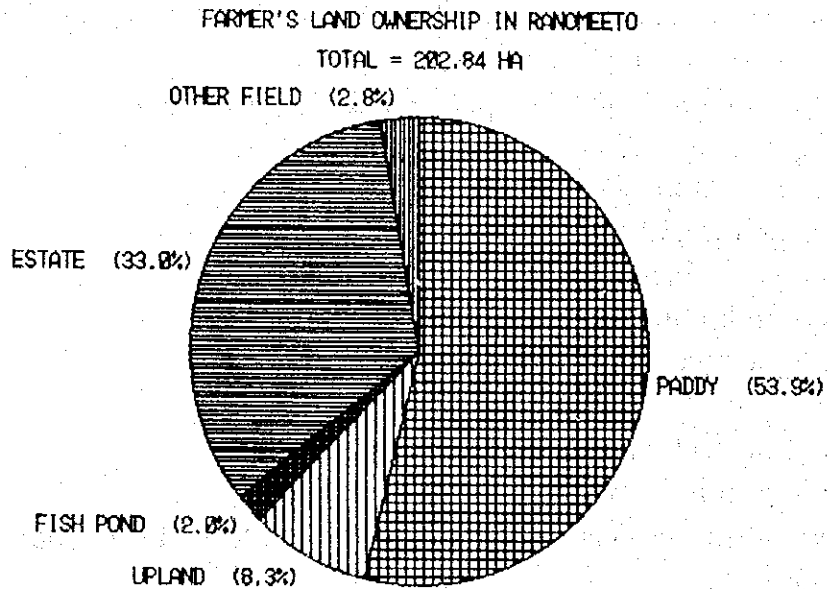


Fig. 6 Utilization of farmer's land (farmers's group) in Ranomeeto village

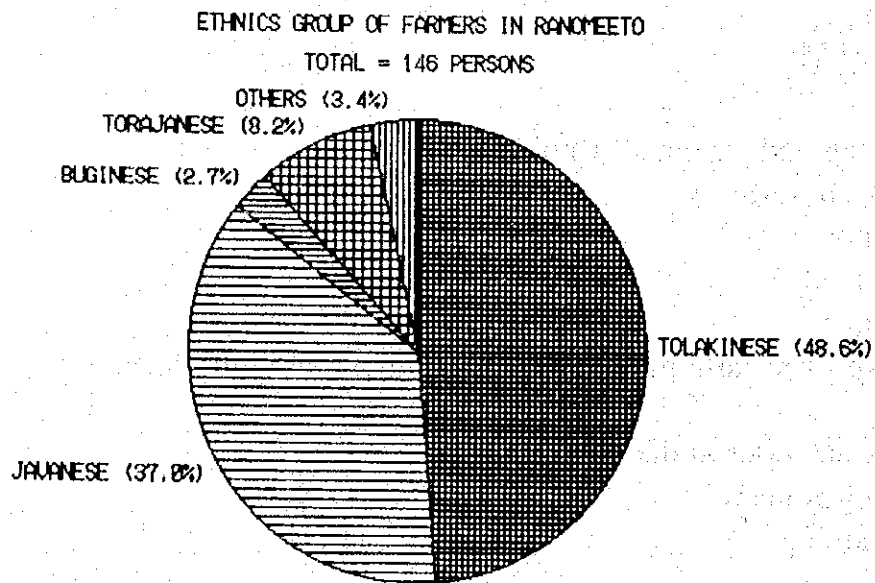
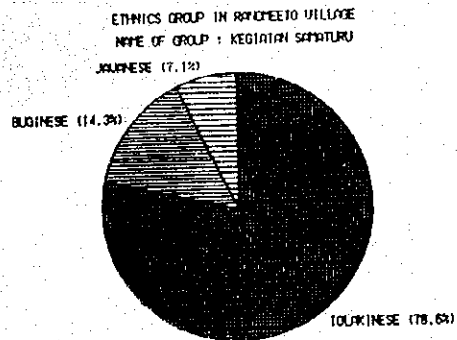
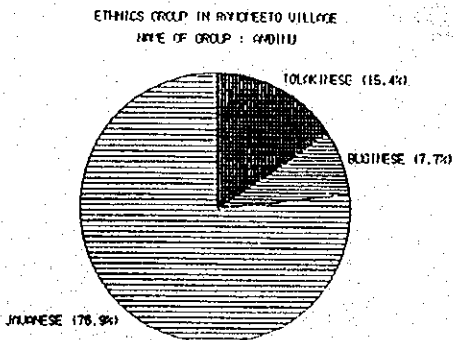
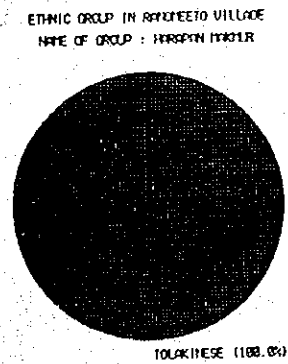
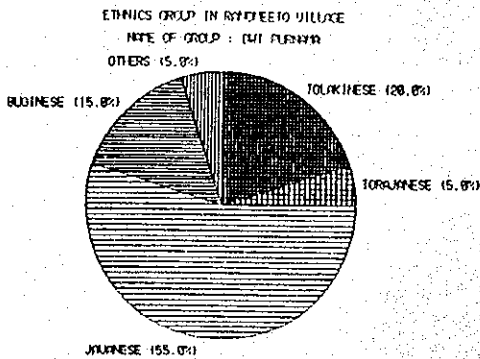
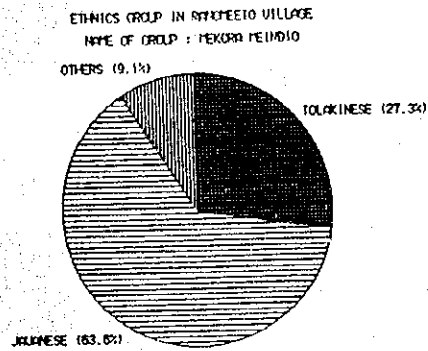
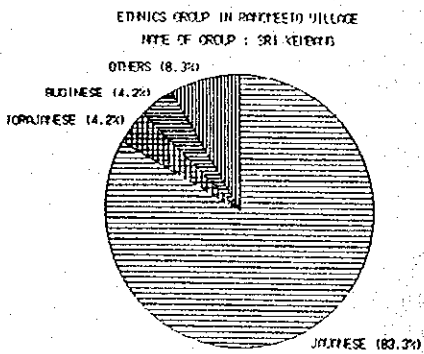
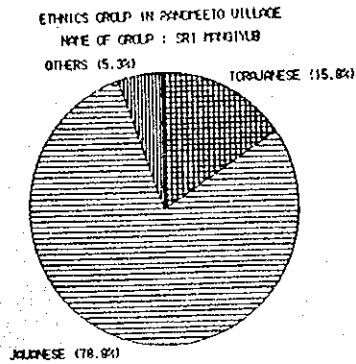
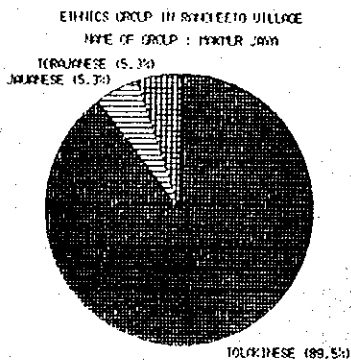


Fig. 7 Ethnic group of farmers in Ranomeeto village

Fig. 8 Ethnic group composition in each farmer's group of Ranomeeto Village

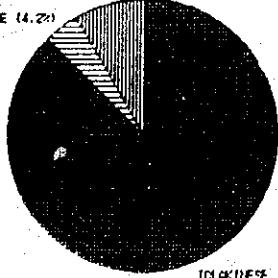


ETHNIC GROUP IN RANDEETO VILLAGE

NAME OF GROUP : HAKUR SAKURU

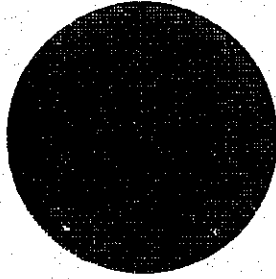
OTHERS (8.3%)

JAPANESE (4.2%)



ETHNIC GROUP IN RANDEETO VILLAGE

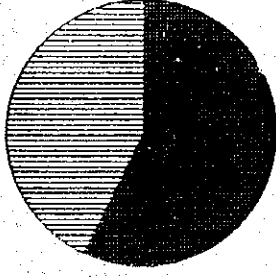
NAME OF GROUP : HAKS HAKUR



ETHNIC GROUP IN RANDEETO VILLAGE

NAME OF GROUP : SUNGER SARI

JAPANESE (42.9%)





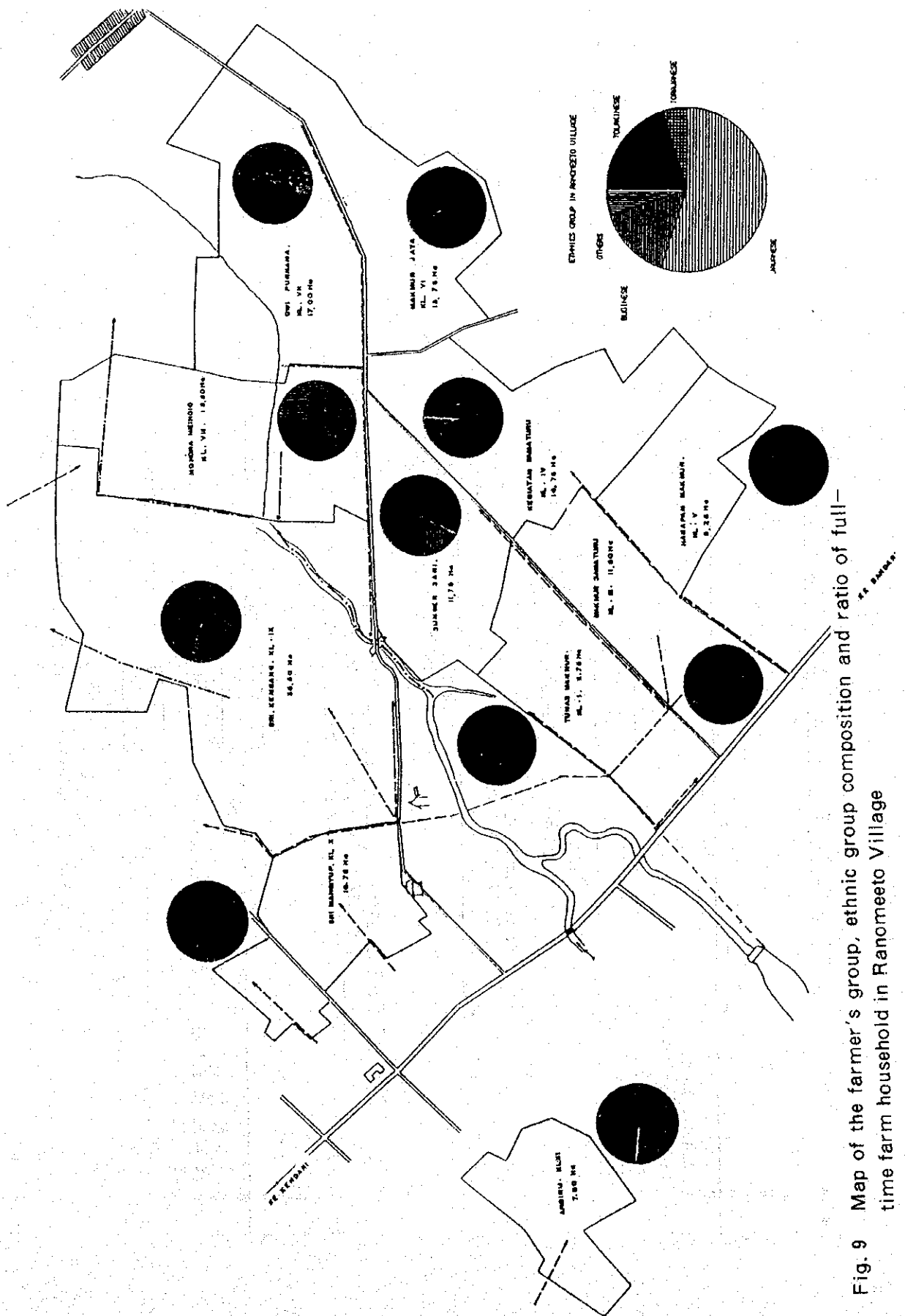


Fig. 9 Map of the farmer's group, ethnic group composition and ratio of full-time farm household in Ranomeeto Village

P3A SUMBER JAYA BARU RANOMEETO

BR0.a

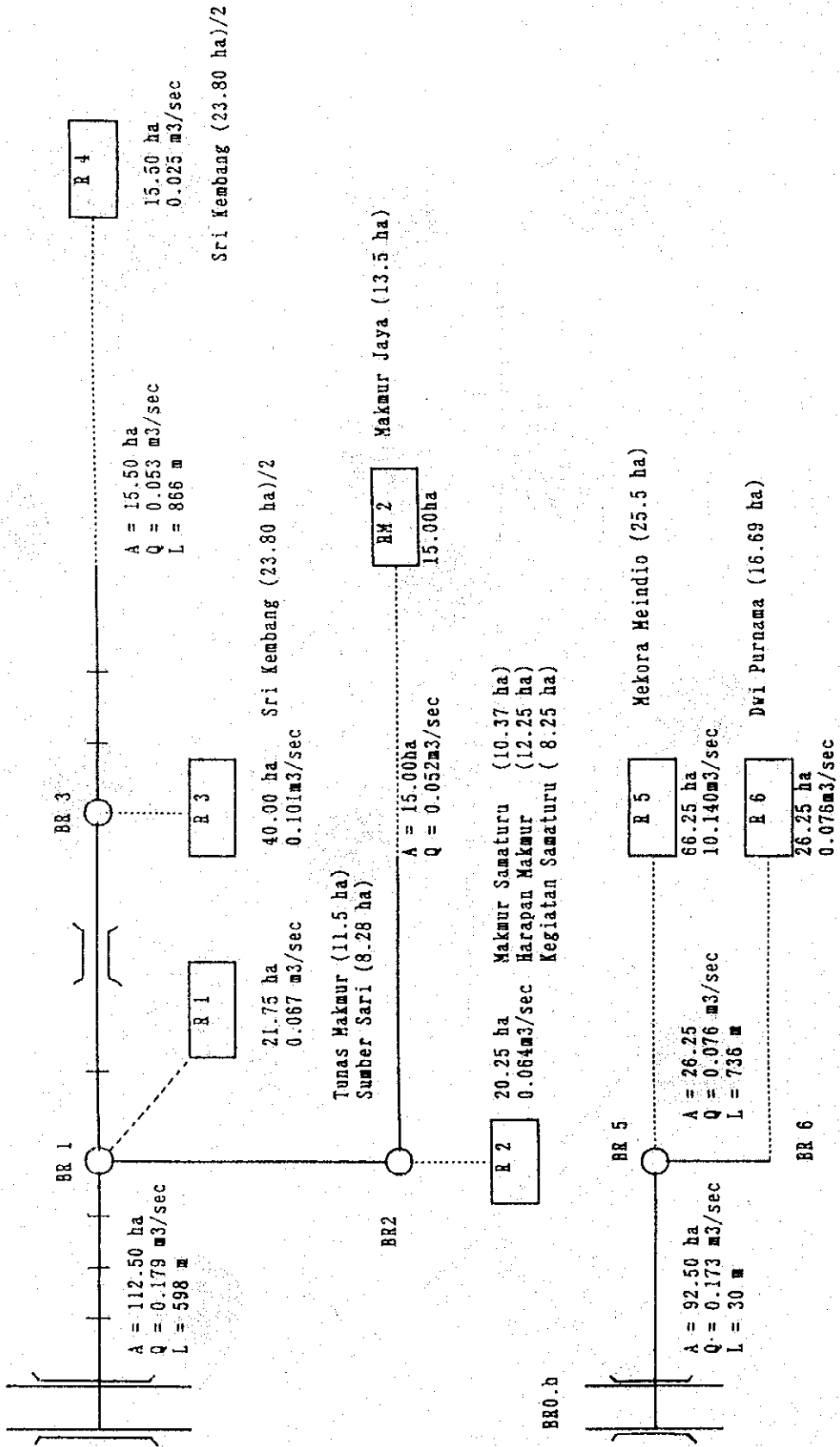


Fig.10 Irrigation systems in Ranomeeto Village

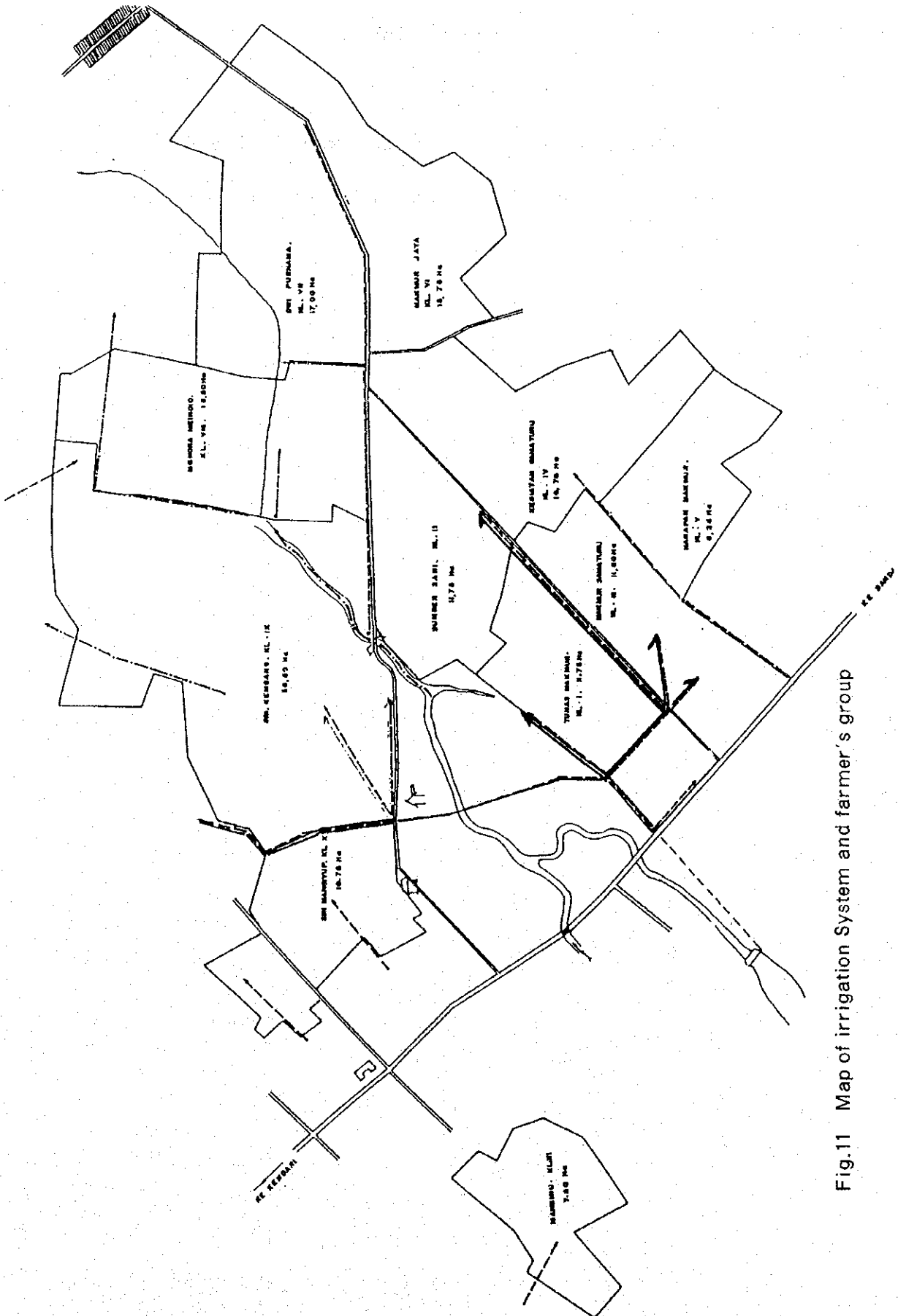


Fig.11 Map of irrigation System and farmer's group

12. Other Information in the villages

1. Basic data on the villages
2. Palangga farmer's group map and irrigation system.
3. Kiaea farmer's group and irrigation system

Table 5 Basic data on the villages

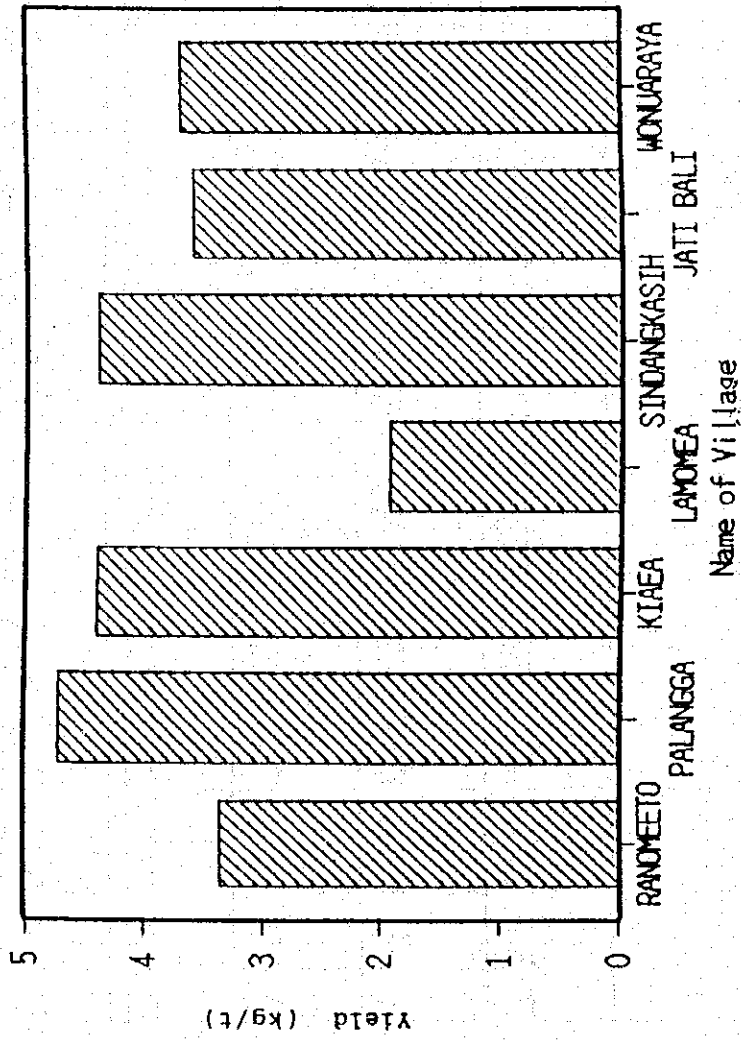
| Name of Village                      | Kanometo | Palangga | Kiaea | Lolobao | Lapulu | Laeaya | Sabulakoa | Onewila |
|--------------------------------------|----------|----------|-------|---------|--------|--------|-----------|---------|
| 1. Population                        | 1,808    | 1,427    | 1,275 | 660     | 1,340  | 1,006  | 1,301     | 787     |
| 2. Man                               | 914      | 732      | 634   | 309     | 662    | 485    | 653       | 408     |
| 3. Woman                             | 884      | 695      | 641   | 351     | 678    | 521    | 648       | 379     |
| 4. Household                         | 326      | 286      | 281   | 120     | 240    | 235    | 355       | 176     |
| 5. Farmers                           | 302(312) | 264      | 271   | 108     | 167    | 177    | 335       | 126     |
| 6. Other jobs                        | 13       | 22       | 15    | 6       | -      | 30     | 69        | 41      |
| 7. Density (person/km <sup>2</sup> ) | 115.2    | 26.2     | 30.8  | 7.6     | 19.5   | 40.6   | 40.9      | 66.6    |
| 8. No. of farmer groups              | 11       | 14       | 11    | 5       | 7      | 7      | 13        | 5       |
| 8-1 Food crops                       | 11       | 14       | 11    | 5       | 7      | 7      | 10        | 5       |
| Members                              | 205      | 396      | 340   | 103     | 300    | 137    | 256       | 56      |
| 8-2 Livestock                        | -        | -        | -     | -       | -      | -      | 1         | -       |
| Members                              | -        | -        | -     | -       | -      | -      | 25        | -       |
| 8-3 Estate crops                     | -        | -        | -     | -       | -      | -      | 2         | -       |
| Members                              | -        | -        | -     | -       | -      | -      | 60        | -       |
| 9. No. of farmers woman group        | 3        | 4        | 7     | 1       | 5      | 1      | 1         | 9       |
| 10. Member                           | -        | 91       | 182   | 38      | 88     | 25     | 15        | 108     |

continue

| Name of Village                | Ranomeeto | Palangga   | Kiaea      | Lalobao   | Lapulu     | Laeya   | Sabulakoa  | Onewila  |
|--------------------------------|-----------|------------|------------|-----------|------------|---------|------------|----------|
| 11. No. of youth farmer group  | 3         | 2          | 3          | 1         | -          | -       | 1          | -        |
| 12. Member                     |           | 55         | 87         | 28        | -          | -       | 27         | -        |
| 13. Other groups (Dasa W. etc) | DS 14     | DS 17      | DS 9       | DS 9      | DS 11      | -       | DS 10      | 1        |
| 14. Member                     |           |            |            |           |            |         |            |          |
| 15. Water user's association   | 2         | -          | -          | -         | Local 3    | -       | 1          | -        |
| 16. Member                     |           |            |            |           |            |         |            |          |
| 17. KUD (Cooperation)          | 1         | -          | -          | -         | -          | -       | 1          | -        |
| 18. Member                     |           |            |            |           |            |         |            |          |
| 19. Ethnich of farmers group   | 146       | 332        | 251        | 115       | 172        | 122     | 147        | 62       |
| 19-1 Tolakinese                | 71(48.6%) | 158(47.6%) | 186(74.1%) | 115(100%) | 58(33.7%)  | 98(73%) | 142( 3.4%) | 62(100%) |
| 19-2 Javanese                  | 54(37.0%) | 25( 7.4%)  | -          | -         | -          | -       | -          | -        |
| 19-3 Buginese                  | 4( 2.7%)  | 144(43.4%) | 65(25.9%)  | -         | 90(52.3%)  | 33(27%) | 5(96.6%)   | -        |
| 19-4 Torajanese                | 12( 8.2%) | -          | -          | -         | (Balinese) | -       | -          | -        |
| 19-5 Others                    | 5(3.4%)   | 5( 1.5%)   | -          | -         | 24(14.0%)  | -       | -          | -        |

Table 6 Paddy rice production (1993) in the villages of Kendari province

| NO  | NAME OF VILLAGE/<br>NAME OF FARMER GROUP | NO. OF PLANTS |          | FRESH YIELD           |        | DRY YIELD            |       |
|-----|------------------------------------------|---------------|----------|-----------------------|--------|----------------------|-------|
|     |                                          | 2.5m x 2.5m   | x1000/ha | kg/6.25m <sup>2</sup> | ton/ha | g/6.25m <sup>2</sup> | kg/ha |
| I   | BANOHEETO                                |               |          |                       |        |                      |       |
| 1   | ANDINU                                   | 195           | 312      | 2.2                   | 3.6    | 1806                 | 2888  |
| 2   | SRI KEMBANG                              | 173           | 276      | 2.6                   | 4.1    | 2153                 | 3434  |
| 3   | SUMBER SARI                              | 165           | 265      | 2.6                   | 4.1    | 2049                 | 3277  |
| 4   | MEKORA HEINDIO                           | 141           | 225      | 3.0                   | 4.8    | 2411                 | 3858  |
| 5   | SRI MANGIYUB                             | 157           | 248      | 1.9                   | 3.0    | 1588                 | 2541  |
| 6   | HARAPAN MAKHUR                           | 143           | 215      | 3.0                   | 4.7    | 2530                 | 4047  |
| 7   | MAKHUR JAYA                              | 144           | 230      | 3.1                   | 4.9    | 2823                 | 4517  |
| 8   | DWI PURNAMA                              | 137           | 219      | 2.5                   | 4.0    | 2013                 | 3221  |
| 9   | TUNAS MAKHUR                             | 170           | 272      | 1.9                   | 3.1    | 1440                 | 2303  |
| 10  | MAKHUR SAMATURU                          | 151           | 241      | 1.8                   | 2.9    | 1648                 | 2636  |
| 11  | KEGIATAN SAMATURU                        | 154           | 247      | 2.9                   | 4.6    | 2531                 | 4050  |
|     | AVERAGE                                  | 157           | 250      | 2.5                   | 4.0    | 2090                 | 3343  |
| II  | PALANGGA                                 |               |          |                       |        |                      |       |
| 1   | MEOHAI                                   | 105           | 168      | 2.9                   | 4.6    | 2226                 | 3561  |
| 2   | MONAPA                                   | 111           | 177      | 3.6                   | 5.7    | 2994                 | 4791  |
| 3   | SIPATOKKONG                              | 116           | 185      | 4.3                   | 6.8    | 3295                 | 5271  |
| 4   | LANDEBANO                                | 108           | 173      | 3.4                   | 5.5    | 2702                 | 4323  |
| 5   | TOSIBA JAYA                              | 111           | 177      | 3.8                   | 6.1    | 2863                 | 4580  |
| 6   | PADAIDI                                  | 115           | 184      | 4.6                   | 7.3    | 3627                 | 5803  |
|     | AVERAGE                                  | 111           | 177      | 3.8                   | 6.0    | 2951                 | 4722  |
| III | KIAEA                                    |               |          |                       |        |                      |       |
| 1   | HARAPAN MAKHUR                           | 111           | 178      | 3.8                   | 6.0    | 2856                 | 4569  |
| 2   | SUBUR                                    | 106           | 170      | 3.9                   | 6.1    | 2774                 | 4437  |
| 3   | SUKA MAJU                                | 120           | 192      | 3.6                   | 5.7    | 2991                 | 4785  |
| 4   | TAK DISANGKA                             | 100           | 160      | 3.0                   | 4.8    | 2397                 | 3834  |
|     | AVERAGE                                  | 109           | 175      | 3.6                   | 5.7    | 2755                 | 4406  |
| IV  | LAMONEA KONDA                            |               |          |                       |        |                      |       |
| 1   | LELEN DURO                               | 183           | 293      | 1.7                   | 2.6    | 1157                 | 1850  |
| 2   | BARU MUNCUL                              | 161           | 254      | 1.7                   | 2.8    | 1261                 | 2018  |
|     | AVERAGE                                  | 172           | 274      | 1.7                   | 2.7    | 1209                 | 1934  |
| V   | SINDANGKASLE                             |               |          |                       |        |                      |       |
| 1   | BUMI DAYA                                | 140           | 242      | 3.2                   | 3.3    | 2642                 | 4115  |
| 2   | TIRTA JAYA                               | 223           | 364      | 5.0                   | 5.2    | 2942                 | 4707  |
|     | AVERAGE                                  | 182           | 303      | 4.1                   | 4.3    | 2792                 | 4411  |
| VI  | JATI BALI                                |               |          |                       |        |                      |       |
| 1   | JURU 1                                   | 119           | 191      | 3.0                   | 4.7    | 2429                 | 3886  |
| 2   | JURU 3                                   | 107           | 171      | 2.6                   | 4.1    | 2066                 | 3305  |
|     | AVERAGE                                  | 113           | 181      | 2.8                   | 4.4    | 2248                 | 3596  |
| VII | WONUABAYA                                |               |          |                       |        |                      |       |
| 1   | KARYA DADI                               | 155           | 247      | 2.8                   | 4.4    | 2169                 | 3470  |
| 2   | SWADAYA JAYA                             | 152           | 242      | 3.6                   | 6.1    | 2457                 | 3931  |
|     | AVERAGE                                  | 154           | 245      | 3.3                   | 5.3    | 2313                 | 3701  |



PADDY RICE PRODUCTION IN 1993

Fig.12 Paddy rice production in several villages in 1993



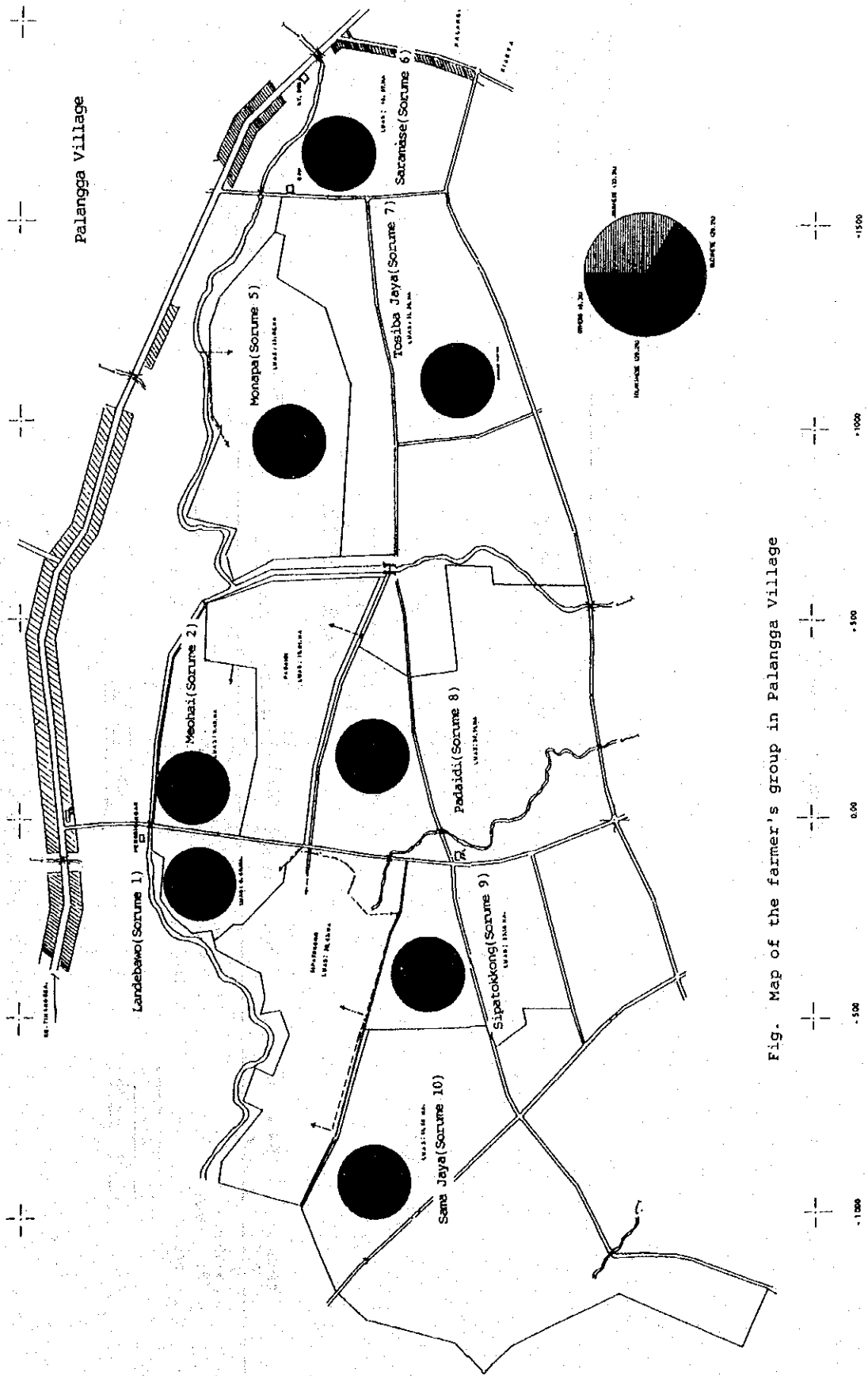


Fig. Map of the farmer's group in Palangga Village

Irrigation system in Pallanga Village

|                                    |
|------------------------------------|
| P 2 I g                            |
| 15.50 ha 0.053 m <sup>3</sup> /sec |

BP 3

A = 15.50 ha  
Q = 0.053 m<sup>3</sup>/sec  
L = 560.00 m

BP 3 b

|                                   |
|-----------------------------------|
| P 2 K r K n                       |
| 6.00 ha 0.025 m <sup>3</sup> /sec |

BP 3 a

BMP 2

|                                    |
|------------------------------------|
| MP 2 I g                           |
| 11.00 ha 0.041 m <sup>3</sup> /sec |

A = 11.00 ha  
Q = 0.041 m<sup>3</sup>/sec  
L = 388.00 m

BMP 2 a

BMP 2 b

|                                    |
|------------------------------------|
| P 2 K n                            |
| 10.00 ha 0.038 m <sup>3</sup> /sec |

BP 2

BP 2 c

BP 2 b

A = 42.50 ha  
Q = 0.195 m<sup>3</sup>/sec  
L = 635.00 m

|                                    |
|------------------------------------|
| P 1 K n                            |
| 17.50 ha 0.058 m <sup>3</sup> /sec |

BP 2 a

BP 1

BP 1 a

BP 1 b

A = 60.00 ha  
Q = 0.332 m<sup>3</sup>/sec  
L = 67.00 m



Fig.14 Irrigation system in Pallanga Village

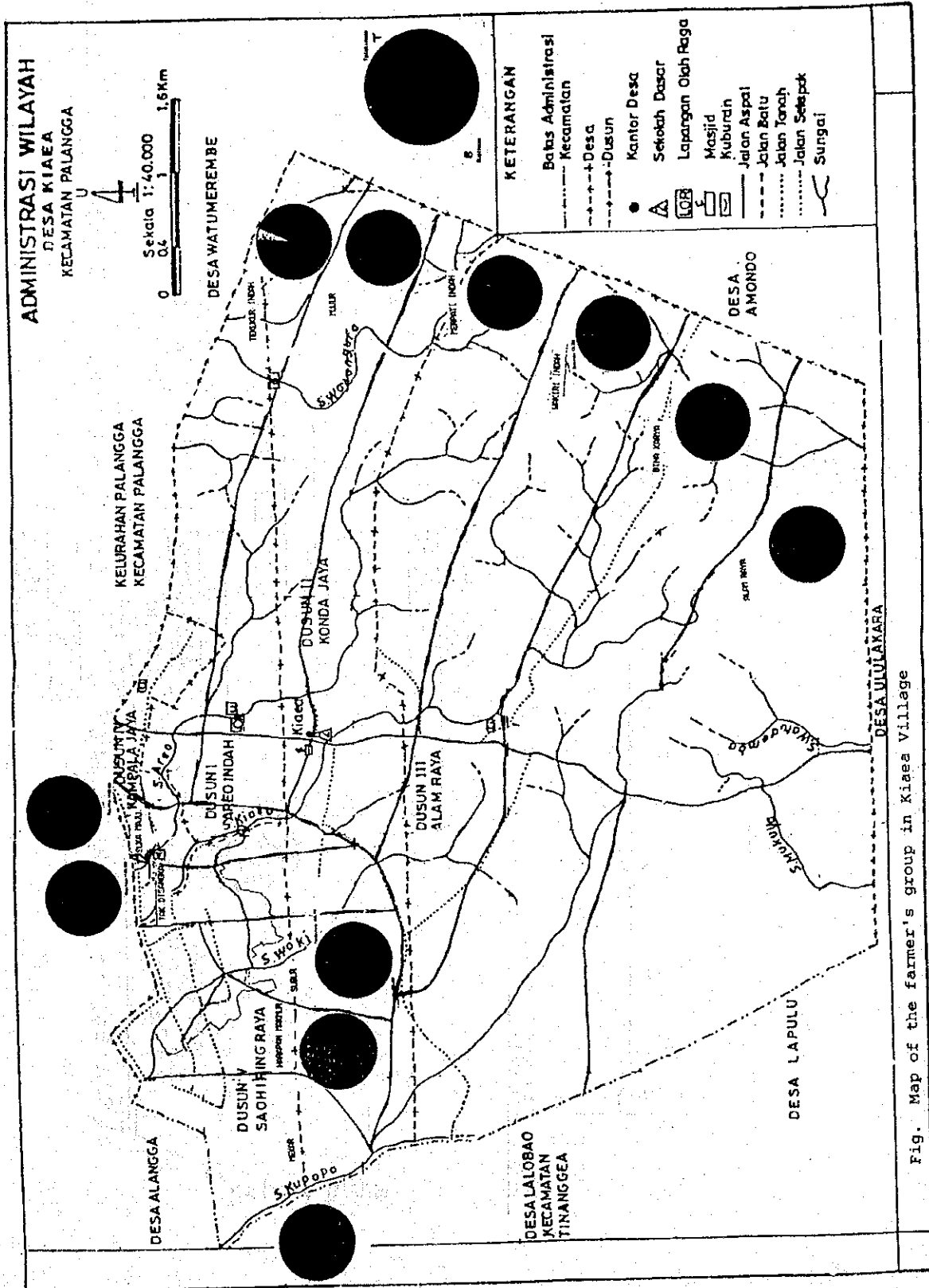
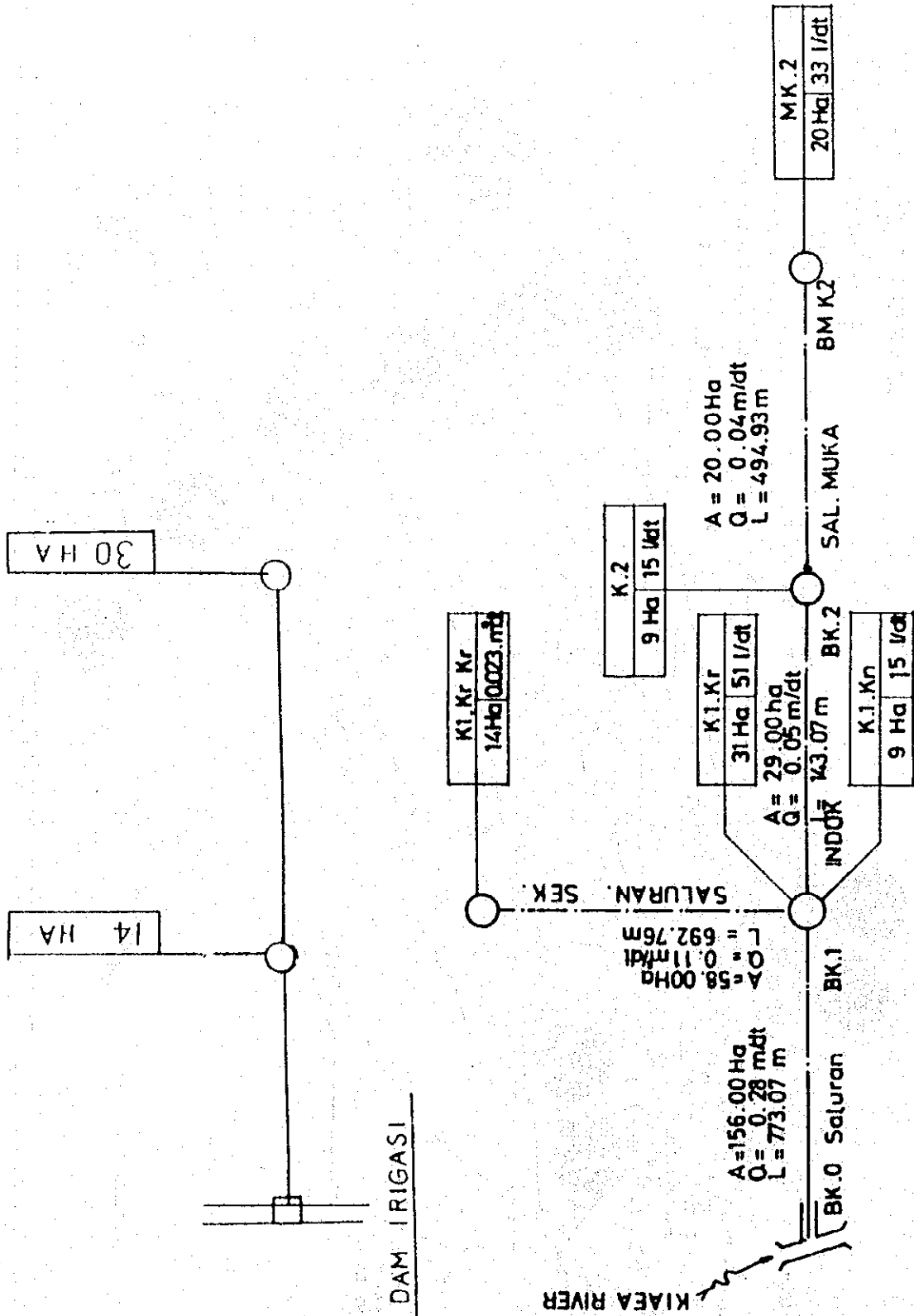


Fig. Map of the farmer's group in Kiaea Village

Fig.15 Map of farmer's group and ethnic group composition in Kiaea Village

Irrigation system in Kiaea Village



## **Annex I.**

### **MINI PROJECT IN F.Y. 1993/1994**

#### **1. RANOMEETO**

##### **1.1. Youth Farmer's Group**

###### **a. Chicken raising (Poultry) (3 groups)**

- Youth farmer's group of Tunas Karya was supported by JICA; 51 head chicken issued on June 30, 1993

- Youth farmer's group of Membiri was supported by JICA; 50 head chicken issued on July 19, 1993

- Youth farmer's group of Mowango Lipu was supported by JICA; 50 head chicken were issued on July 14, 1993.

**b. Hatching project of Tunas Karya 50 chicken, but this activity was not successful, because of inadequate feeding and care of the chicken.**

**c. Maize intercropping with groundnut culture of Tunas Karya some materials were supported by JICA, on August, 1993. Materials consist of:**

###### **1). Maize 10kg**

2). Groundnut 25kg

3). Fertilizers: Urea 50kg, TSP 25 kg and KCl 25 kg.

##### **1.2. Women Farmer's Group**

###### **a. Vegetable seed was supported by JICA on 1992**

- Long bean

- Eggplant

- Cucumber

**b. Salak Bali cultivation was supported by JICA 300 seedlings on April 23, 1994 for Lestari Women group.**

**c. Cashew nut step processing was supported by JICA 50 Kg to Lestari women group November 1993.**

##### **1.3 Farmer's Group**

Cropping system practice/cropping pattern was supported to 6 farmer's group on December 1993, consist of :

a. Farmer's group of Sri Kembang

b. Farmer's group of Dwi Purnama

c. Farmer's group of Makmur Samaturu

- d. Farmer's group of Andinu
- e. Farmer's group of Tunas Makmur
- f. Farmer's group of Sri Mangiyub

Total 6 farmer's group were supported by JICA with Lariang variety (50kg), soybean (25 kg), Urea (200kg), TSP(100kg) and KCl (100kg).

## 2. PALANGGA

### 2.1. Youth Farmer's Group

#### a. Chicken culture (2groups)

-Youth farmer's group of Tunas Harapan I was supported by JICA 11 head chicken on August 19, 1993.

-Youth farmer's group of Tunas Harapan II was supported by JICA 14 head chicken on August 19, 1993.

#### b. Groundnut culture (2groups)

-Youth farmer's group of Tunas Harapan I was supported by JICA in F. Y. 1992/1993.

- 1) Groundnut 25 kg
- 2) Urea 50 kg
- 3) TSP 25 kg
- 4) KCl 25 kg

-Youth farmer's group of Tunas Harapan II was supported by JICA in F.Y. 1992/1993.

- 1) Groundnut 25 kg
- 2) Urea 50 kg
- 3) TSP 25 kg
- 4) KCl 25 kg

### 2. 2. Women Farmer's group

a. Chicken culture (6 groups) was supported by JICA, 66 head chicken was issued on August 19, 1994.

b. Garden vegetable cultivation (8 groups) was supported by JICA in F.Y. 1992/1993 to 1993/1994.

Some kind vegetable seeds were issued by the Project

- 1) Long bean
- 2) Cabbage
- 3) Eggplant
- 4) Pepper

## 5) Vegetables

### 3. KIAEA

#### 3.1. Youth Farmer's Group

##### a. Groundnut Culture (2 groups)

-The activity of Youth farmer's group of Kondawa Jaya was supported by JICA which issued groundnut (25kg), Urea (50kg) TSP (25kg), and KCl(25kg), this activity was already practiced in F.Y. 1992/1993.

-Youth farmer's group of Areo Indah supported fertilizers as mentioned above, by JICA.

##### b. Vegetable production (1 group)

The activity of youth farmer's group of Tunas Muda was supported by JICA which supplied Long bean seed, cabbage seed, papaya seeds, This implemented in F.Y. 1992/1993

#### 3.2. Women Farmer's Group

The activity of garden vegetable cultivation:

This activity was supported by JICA, which supplied cabbage seed, Long bean seed, Tomato seed and kind vegetable seeds.

### 4. LALOBABO

#### 4.1 Youth Farmer's Group

-Activity of grass (alang-alang) field utilization; this is trial for youth group and activity on going process.

#### 4.2 Women Farmer's Group

-Vegetable garden cultivation, was supported by JICA about Long bean seed 0.25 kg, Tomato seed 2 packs, bayam 2 packs, Eggplant 4 packs, cucumber 1 pack and others.

#### 4.3 Farmer's Group

-Salak Bali cultivation 300 seed has been supported by JICA project on April, 1994

## **5. ONEWILA**

### **5.1 Farmer's Group**

**-Surjan cultivation system has been supported by JICA Project in F.Y.1993/1994**



## **Annex II.**

### **WORKING GROUP**

#### **I. Purpose and Procedure**

1. Smooth execution of project activities through proper coordination between each section.
2. The members should discuss the task operation of working groups.
3. The members are nominated from among several sections.
4. The constituents are experts and their counterparts.
5. The working groups should carry out the activities as follows:

#### **II. A Role of Each Group**

1. Training Working Group
  - 1) Program Coordination
  - 2) Arrangement (Preparation)
  - 3) Implementation
  - 4) Evaluation
2. Construction Working Group
  - 1) Construction design
  - 2) Construction Location Coordination
  - 3) Schedule
3. Machinery, Equipment Facility
  - 1) Registration
  - 2) Management System
  - 3) Utilization, Distribution, Method
4. Sustaining
  - 1) Investigation of sustaining system
  - 2) Fund/Capital re-cycling
  - 3) Technical recycling
5. Technical Transfer
  - 1) Technical adaptation system
  - 2) On farm testing
  - 3) Evaluation

### **III. DETAIL OF THE ACTIVITIES**

#### **TRAINING GROUP**

1. Adopt follow the decision of the Technical Committee and executing practical management works of the training.
2. Drawing up the schedule and curriculum for the training courses.
3. Arrangement of training lecturer, training place, materials, etc.
4. Arrangement works of trainee's invitation.
5. Coordination of each course.
6. Making evaluation reports.

### **CONSTRUCTION GROUP**

1. Following the decision of technical committee and doing practical management of the construction works.
2. Leading the farmers to the construction works.
3. Tool and material managements.
4. Making monthly work-report of the construction and submitting it to Technical Committee.
5. Coordination of farmer's group to implement the construction
6. Guidance for maintaining the facilities and reserving the stock fund to groups.

### **MACHINERY AND EQUIPMENT MANAGEMENT GROUP**

1. Adopt and follow the decision of the technical meeting and executing practical management works of machinery and equipment.
2. Maintenance of farm machinery and equipment of the project.
3. Delivery of farm machinery and equipment to project sites and registration works for each machinery and equipment.
4. Management of workshop and ware housing.
5. Spare parts and fuel managements and preparing their balance sheet.
6. Making operational reports of machines and submitting it to Technical Committee.

### **SUSTAINING GROUP**

1. Adopt and follow the decisions of the Technical meeting and executing practical management works of sustaining the Project activities.
2. Drawing up a plan for sustaining the Project activities.
3. Giving incentive to the farmers for sustaining the Project.
4. To acquire the methods of stock fund system and rental system of farms

equipment.

5. Guidance to the farmers' group for training the facilities.
6. Technical guidance to farmers and groups.

### **VILLAGE WORKING GROUP (UNION FARMER'S GROUP)**

1. Connecting and conducting meetings of administrative staff and farmers group.
2. Coordination and conduct of practical Project activities.
3. Ensure guidance for Project activities from technical committee to farmers/farmer groups.
4. Negotiations of details of works with the village people about construction area, direction of facility, etc.
5. Selection of participants for training.
6. Management of rental equipment and reserving rental fee.
7. Offering the farmer's plan idea or request of assistance from the Project.
- 8 Members:

Project Working Group  
Desa Lurah  
PPL/BPP/KPK  
Leader of Farmers' group  
Leader of women's group  
Construction Contractor  
BUPATI



**Annex III.**

**DEFINITIVE PLANNING OF FARMER'S GROUP (RDK)  
AND DEFINITIVE PLANNING OF INPUT NEEDS  
OF FARMER'S GROUP (RDKK)**  
(COMPLETED YEARLONG PLAN ON FARMING ACTIVITY AND  
ITS MATERIAL REQUIREMENT IN FARMER'S GROUP )

PEDOMAN PENYUSUNAN RENCANA DEFINITIF  
KELOMPOKTANI (RDK) DAN  
RENCANA DEFINITIF KEBUTUHAN KELOMPOKTANI (RDKK)

PROYEK PERTANIAN TERPADU DAN  
PENGEMBANGAN PEDESAAN  
DI  
PROPINSI SULAWESI TENGGARA (ATA-481)

DEPARTEMEN PERTANIAN BADAN PENGENDALI BIMAS  
JAKARTA, 1991



## (CHAPTER I)

### 1. Back Ground.

Coordination or intensification plan for priority crops had been made through a provision of governor in provincial level and a provision of Bupati in District level.

Those three kind of provision are as indicative plan which were made by all staff concerned. This indicative plan is top down planning.

Indicative plan in Kabupaten level is made based on all kecamatan and PPL together with kepala desa should discuss with farmers group about how many hectares are possible to do intensification in each farmer group. This plan is called Definitive plan that should be consulted with implementors. So it can be good arrangement for preparing agricultural materials by six of Credit distributors in each place.

Planning should be made based on the willingness of farmers. To avoid the difference between top-down planning and the farmers evaluation about the necessity of each location. Eventhough, the skillnes of the farmers in making planning is too limited, so, top-down planning and bottom up planning have to be give the priority on efforts to increase the yield and income of the farmers.

### 2. Objectives and Targets.

The objectives of RDK and RDKK are to gain a good serve from six place of credit distributors and facilities. Therefore the application of technology by farmers is conducted based on recommended technology.

The targets are every farmer can judge how many agricultural materials they need in farming activities for both credit and self support. Especially farmers who need to borrow some materials can get a loan from the credit agency. However government is not provide credit for all necessary materials but it can be possible to supply only certain materials.

### 3. Definitions.

1. RDK : Rencana Devinitif Kelompok (Definitive plan of Farmers group) is a planning of farmers group for all agricultural work through a Year. Which is made based on the results of the meeting within an group. RDK contains farming activities which are consist of data of farmers group. Target of area intensification, productivity, necessary plan of materials, capital, schedule and implementors etc.
2. RDKK : Rencana Definitif Kebutuhan Kelompok (Definitive plan of Farmer Groups Necessity). Is the ordering of agricultural materials of farmers group for one planting season of the result of farmer group meeting which contain of kind, number, and time of materials which they need and the way on purchasing (credit or non credit).
3. There are 5 kinds of credit pattern in supporting intensification program.
  - a. Credit of farming (KUT) is a credit for capital which is given by BRI (Indonesia People Bank) and other Banks that is allowed by Indonesian Bank (BI). This credit can be get through KUD (Village Cooperative Unit) by farmers who really need to do their farming activities or rice and secondary crops cultivations. Keep also is given for rising fish in the field (Mina Padi).



- b. Credit for primary cooperative for its members is a kind of credit that is given by BRI or other Banks that is allowed by Indonesia Bank (BI). This Credit will be flowed to KUD or primary cooperative for its members.

In the intensification program the government also provides a kind of credit for the member of primary cooperative. This credit Should be used for cultivating sugar plant and intensification of work cattle (Intek).

- c. Credit for small scale Business this credit is provided by several Bank in supporting small scale Business . this credit also can be used by farmers who intend to do intensification for all crops. every Bank has decided some conditions in using this credit.

4. Agricultural production Facilities is an input that used for increasing agricultural production such as : Seeds , Fertilizers, Pesticides, Vaccine etc.

5. Agricultural intensification is an efforts to apply technology in agricultural production to increase productivity and to keep the balance of natural resources.

## Chapter II

### FUNCTION OF RDK AND RDKK

#### 1. FUNCTION OF RDK

##### a. RDK is a realization of bottom-up planning

In the planning system that we use and known well is " Top-Down planning and bottom-up planning " means planning which is made for both systems should be synchronized.

Top down planning basically is a National plan on program of the Government. that plan has to be adopted in the provincial, Regencial, sub regencial and village level. Based on the condition of each level.

This plan should be followed by farmer groups to be projected as program of farmer group. it can be fill in the RDK. In other words that RDK is a process of transfere of program from Government to be program of farmer group which is organized in a group.

RDK should has some characteristics :

1. RDK is a result of discussion of farmer group member.
2. Suitable with Governmental program
3. RDK has support recommended technology.

##### b. RDK as a realization of cooperation among farmer group members.

RDK generally contains of farm intensification plan and farmer group's activities plan. by this plan each member can work accordingly. as well as in locking for an information ,Facility, material, capital and marketing of product.all members of farmer group have to follow RDK which they made together before.

RDK is farm intensification plan based on potentially, kind of crop, areal condition and the ability of the group.

In the acreage of " Supra insus " the contain of RDK . Should be based as result of the meeting in the unit of supra insus level and the result of the meeting in the compartment unit of supra insus level, (see annex 5).

c. RDK as a control for activity.

In RDK all activities could be seen clearly such as : kind of activities that will be done, schedule, location, and the person who will do it and who will take responsible and how to do it . this kind of RDK is very suitable and easy to understand for each member. at the other hand, RDK is very useful for guiders, PPL , Chief of village to control the activities of farmer groups. Are they doing those activities based on RDK which they made before ? if there is a part of activities is not so well running, so the guiders could giving a way on how to do it.

## 2. FUNCTION OF RDKK

a. RDKK as a way to guide farmer group in adopting recommended technology .

RDKK contains all necessities of farmer group on implementing farm intensification such as agricultural materials both credit and cash and other expenses. All farmers are not understand yet what kind of materials are needed on doing good farm intensification like good quality seed (Superior Seed), fertilizers and other growth hormones.

Therefore, in making RDKK, farmer group could not be let to make by them selves, but should be given a guidance so that they can adopt recommended technology.

One training should be given to farmers on how to make RDKK by using stimulation system. This training can be done at technical meeting of PPL. The objective of this training to make good implementation in the field.

- b. RDKK as a way to speed up flow of credit and agricultural materials.

RDKK should be filled clearly what materials really they need, how many for each materials, when is needed, what location and it will be get by credit or cash. So, KUD will be able to provide easily. In other word, RDKK is an ordering list of farmer group to KUD.

- c. RDKK as a way to connect an institutional relationship between farmer group and KUD.

As a function of RDKK is a ordering should serve them according to what kind of materials are needed to promote inter-relationship between farmers group and KUD can be realized in arrangement of RPKUD which based on RDKK.

(CHAPTER III).

IMPLEMENTATION OF RDK AND RDKK ARRANGEMENT.

1. The procedure on making RDK.

The arrangement of RDK should be based on the result of discussion among member with in a group. Principally, RDKK is an agreement of member of farmer group in relating with farming management, preparation of farming facilities and marketing system by group. The meeting should be attended by kepala desa/lurah and farmers.

RDK is contain of :

- a. Kind of crop
- b. Area (Ha/Volume/head)
- c. Target of productivity
- d. Farming pattern/Planting pattern.
- e. Farming agreement which consist of :
  - 1. Meeting
  - 2. Arrangement
  - 3. Preparation of farming facilities, man powers and capital
  - 4. Sanitation
  - 5. Irrigation
  - 6. Soil preparation
  - 7. Nurseling
  - 8. Planting
  - 9. Pest and disease control
  - 10. Management
  - 11. Post harvesting
  - 12. Marketing
  - 13. Repayment of credit
  - 14. Saving
- f. Cooperation among farmer group, KUD and commercial agency

Preparation of RDK is a part of a Rural Development plan. after wards RDK is decided in the farmer groups meeting on Agricultural activities day (June/July)

The further activities are as follows :

| NO | MONTH         | ACTIVITIES                                              | ATTENDANCE                | GUIDERS/<br>SUPERVISOR                     |
|----|---------------|---------------------------------------------------------|---------------------------|--------------------------------------------|
| 1. | June-July     | Farmer group meeting for arrangement of RDK             | Farmer group              | Camat, Field extension worker, Kepala desa |
| 2. | July          | Propose of contain of RDK to head of Bimas in Kecamatan | Field extension worker    | Head of implementer of Bimas in Kecamatan  |
| 3. | July          | Propose of RDK plain to head of BIMAS Kabupaten         | Member of Bimas Kecamatan | Secretary of Bimas Kabupaten               |
| 4. | July - August | Discussion of RDK plan in the Bimas Kabupaten           | Member of Bimas Kabupaten | Head of Bimas                              |

RDK which is resulted from the meeting of farmer group should be made for one year period and involve all crops that will be cultivated in region of farmer group, especially, for priority crops.

## 2. Procedure on making RDKK.

RDKK (Rencana Definitif Kebutuhan Kelompok = Definitive plan of farmer group's necessity).

RDK as a basic plan for arrangement necessity materials. So, KUD or other agencies easier to provide those materials. RDKK is a spelling out of RDK. RDKK should be made for one planting season.

There are three steps of farmer groups meeting on making a plan of farmer groups necessity :

- a. First step : Meeting for among prominents of farmer groups That should be attended by chiefs of farmer group (contact-farmer), all head of sections, such as credit and production facility section, pest and disease control section, irrigation section, secretary treasures etc.
- b. Second step : Meeting for all sub-group which is lead by every head of sub group of farmer groups in the same (neighboring area) they make a list of necessary materials both for cash and credit and when those materials are needed. This is very important for KUD to provide those all materials. It should be mentioned clearly of fix number of each materials are requested.
- c. Third step : Meeting for prominents of farmer group to discuss about the arrangement of :
  1. List of RDKK from every sub of farmer group.
  2. To fix the schedule activity and group movement and sharing of job.
  3. RDKK which was signed by contract-farmer should be sent to KUD as a credit ordering. The recapitulation of RDKK is conducted by PPL and it is informed to camat and secretary of Bimas in Kabupaten level.

To make sure that making of RDKK is right or not, RDKK should be observed by KUD and administration staff from BRI after that RDKK could be continued to BRI.

The model of RDKK blank for KUT (farming credit) can be seen in Annex 2 and for TRI in Annex 3.

To promote the farmers participation in big scale area within a group, it is necessary a good leadership of Master of Village (Kepala desa /Lurah) and Camat.

There are 5 (five) steps have to be conducted by lurah or camat on connecting the arrangement of RDK/RDKK :

- 1). Before planting season (about 2 month before), master of village should conduct a meeting with all contact-farmers who stay in the same village. The purpose of the meeting is to decide the schedule of farmer groups meeting.
- 2). To activate all member of farmer group in every farmer groups meeting.
- 3). Master of village should joint in the farmer group meeting or other staff on behalf of kepala desa.
- 4). To motivate the member of farmer group who is rare to joint the meeting.
- 5). Giving some guidance or correction to the member on making RDK/RDKK.

#### Chapter

#### (Ending)

By publishing this guidance book, we hope that farmer group will be able to make RDK and RDKK. Therefore flowing of Agricultural materials that farmers needed should consist of six principles of distribution and to do application technology by farmer will be easier. This book can be used as role on giving guidance to farmers groups in making RDK and RDKK.

Jakarta, November 1991

Secretary of Bimas



## **Agricultural Development as Part of Regional Development in Indonesia**

**(A case study of an integrated agricultural and rural development project in Southeast Sulawesi)**

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## **Introduction**

Agriculture is a field where the implementation of development assistance programs (technical cooperation and assistance) began early, and it also has a large number of projects for each specialized area. Agricultural development represents a comprehensive area that covers both the natural environment, the provider of a basis of production, and man, its user, and is an activity in which man has been engaged since prehistoric times.

The author therefore believes that agriculture should be undertaken in a manner suitable for each given period and region. Satisfying basic human needs as a food production activity, it constitutes an integral part of the modern economic and social system, and must not be neglected. With technical cooperation in the agricultural field, priority tasks have been set by leading international development assistance agencies, such as the UNDP, FAO, World Bank and Asian Development Bank for each successive period. Japan's assistance activities began with an agricultural center project in Cambodia, which was the embodiment of an early "point-by-point" development approach, called the model farm or agricultural extension cooperation program. This was later expanded into the regional agricultural development or regional agricultural extension and development program, with the corresponding development approach shifting to the so-called "from-point-to-area expansion", which pursued practical technology transfer. The approach then shifted to a research cooperation-oriented one, on the grounds that the fragility of recipient countries' agricultural infrastructure and organizational structure was limiting the effectiveness of such agricultural extension efforts. Namely, it was thought that extension schemes directly targeting farmers were not yet feasible and basic-level cooperation was more effective. After this, the favored international agricultural development approach further shifted to the current one, which emphasizes participation and balanced development as a means of solving basic agricultural problems, such as environmental pollution and poverty, from the viewpoint of global-scale development. With such frequent changes in approach, can the current form of international assistance adequately respond to recipient countries' agricultural development needs and thrive? Despite the changes in the form of cooperation and priority goals, aren't the needs at the grass-roots level still the same? The bottom line is how to help farmers deal with nature to increase their farming income. In this connection, the author took part in a participatory development scheme, an old but at the same time new technique in project-type cooperation, and would like to discuss future international agricultural development cooperation and assistance, using this experience as an example.

## **Practice of Participatory Development and Agricultural Development Technique geared towards Project Sustainability and its Evaluation**

### **1. Outline of Agricultural Development in Project-type Cooperation**

Eastern Indonesia is a region which has fallen behind other parts of the country amid nationwide development and modernization moves, and progress in its development is highly desired in view of the nation's economical and social balance. As part of this region, Southeastern Sulawesi occupies an isolated peninsula with no land links with other provinces, lined by 2000 m-class mountains along the northern border and surrounded by sea on all other fronts, and, for this reason, has been left out of developmental activities. The author and his colleagues as the activities of JICA Cooperation implemented an agriculture and rural development project covering eight villages in this region as a model case. The project site location map is shown in Fig. 1. The project aimed to achieve a modest productivity increase over the current level, through the development of a small-scale but effective agricultural infrastructure and provision of operational guidance, rather than constructing large-scale facilities, based on the bottom-up approach by encouraging the active participation of local farmers. The project can be summarized as follows:

- 1) Main agricultural infrastructure for the land development
  - i) Model development of unused arable land in the village, ii) construction, repair and improvement of canals, intake weirs, etc., iii) construction of ponds, wells, etc., iv) model development of paddy fields and upland for field crops and estate crops
- 2) Other agricultural infrastructure development works
  - i) Construction of farm roads, ii) construction of village meeting halls and extension office, iii) construction of rice mills, drying yard and seed storage facilities, and iv) construction of stock raising (animal husbandry) facilities
- 3) Implementation of construction programs on agricultural infrastructure designed for farmer participation
  - i) Contracting or direct implementation by project authority, ii) construction and management of branch irrigation canals by farmers, and iii) farmer-led selection of construction sites

- 4) Improvement of farming techniques for increased production
  - i) Establishment of farming model through demonstration of farming practices (paddy growing, upland crop growing, estate crop growing and live stocks ), ii) trial and extension of improved techniques, and iii) introduction of farm tools and small agricultural machines, such as hand-tractors and power-threshers
- 5) Establishment of systems aimed at invigorating activities and encouraging sustained project activities
  - i) Fostering of organizations (union farmers' group, water users' association and rural cooperative association), (ii) pooling of funds through farmers' groups, and (iii) operation and management of agricultural machinery, supplies and facilities by farmers' groups (rice mills, hand-tractors, etc.)
- 6) Activities with impact on rural development as a whole
  - i) Farmer training, ii) rural women training, and iii) assistance for group activities
- 7) Establishment of small-scale development models
  - i) Development plan taking full advantage of characteristic features of each village, and ii) expansion and invigoration of model development schemes based on a watershed existing farmers' group

In implementing the above programs, the easy acceptability of the development plan for local farmers is essential for project sustainability. By focusing on this point in the implementation of this project, a new approach to rural development and first-hand knowledge of local conditions at the village level were obtained. The results are shown below:

## **2. Existing Village Organization Structure**

Historically, the indigenous Tolakinese community maintained its unity around their king, called Mokole. The king ruled sub-districts through sub-district heads, called Putobu, picked from the king's relatives, with village heads, called Towomotou, chosen from villagers and appointed by the king. Each village head was supported by two assistants, called Pabitara and Posudo, who moved around the village to collect information and make arrangements for ceremonial events. This traditional organizational structure has also been utilized under the modern political system, and sub-district heads (camat) are appointed by the district head to administer their respective sub-districts (kecamatan). Each sub-district has about 10 villages, of which important ones ("kelurahan" or administrative villages) have village heads, called desa lurah, appointed by the district head, while the heads of other villages ("desa" or autonomous villages),

called kepala desa, are elected by villagers. Each village is further divided into sub-villages (kampung), sub-village sections (rukun kampung), and neighborhood groups (rukun tetangga), each consisting of about 20 households, while women form women's neighborhood groups (dasa wisma: each with 10 members). These systems are said to have been first introduced by the war-time Japanese Army. While a village has a number of voluntary organizations, union farmers' groups constitute basic units in the agricultural area. Normally, such groups are formed according to the geographic proximity of crop field ownerships (paddy fields). When the national government provides subsidies for village development, it is the village maintenance committee of each village, called LKMD, that receives a budgetary quota based on administrative guidance and uses it in village development programs. The sub-district government, on the other hand, has an official handling matters relating to the Village Development Agency of the National Government's Ministry of Home Affairs (BANGDES) to implement village development using Ministry of Home Affairs funds. However, the outlay is small so that large projects cannot be carried out. Large-scale projects including those involving an entire village are treated as being of the provincial or district level and are implemented by the Ministry of Public Works of the National Government. Projects involving resident participation are therefore undertaken at the BANGDES/LKMD level. However, these are prone to assume a top-down character, i.e. development forced upon people (villages) by bureaucrats, who control the budget. Moreover, even if there are no "untied relation", their effectiveness is limited due to considerable murkiness surrounding the handling of accounts at levels beyond the villages.

For detailed sub-district and village organizational structures, refer to Fig. 2. Under the traditional political structure, crops were levied by the king, and this, in turn, functioned as a kind of social-security system to maintain equity among villagers. Part of the levies were used for entertainment purposes or distributed among sick residents or widows. However, the system has been abolished under the present political system, and taxes are now all paid in currency to the National Government. The modern society therefore has a weakness in terms of village welfare, and this coincides with the transition process from a barter economy to a money economy. Goods distribution at the village level takes place at a weekly open-air market, where barter trading still takes place, and, therefore, the flow of goods is not yet entirely based on monetary values. Too rapid an introduction of a money economy will cause confusion in people's sense of values and increase the gap between the rich and poor. Therefore, a gradual transition from a barter society to a money-economy-based society seems necessary. In other words, it may be said that the distortion associated with a modern money economy is creating poverty.

### **3. Who is Village Development Leader?**

When undertaking village development based on resident/farmer participation, it is desirable that they engage in activities voluntarily, but it is not possible to achieve this just anywhere. Getting development going needs a key person, i.e. a leader. If this person advances too far along the policy-making line, he will become a national-level administrator, and this gives rise to the risk of development becoming top-down. While the above traditional society coexists with a modern society in Southeast Sulawesi at present, it is necessary to identify people who are suitable for and capable of becoming leaders in the implementation of various projects. The lowest-level administrative activities in the village society under the current political system revolve around village heads. As mentioned above, there are two types of village heads: one appointed by the district head and the other elected by villagers. Hierarchically, village heads come under sub-district heads, appointed by the district head, and form the bottom rung of the centralized administrative structure. Therefore, village development cannot proceed without the village head, and development takes a different outlook, depending on his ideas and capabilities. The vision for development also differs, depending on whether the village head understands the villagers' views and desires, or just forces his will upon people through his power.

### **4. What is Participatory Development?**

Despite strident calls for resident participation, it is difficult to clearly define the grass-roots level in terms of "where it lies" and "who represents it". The best participatory model would provide the conditions that would ensure that every farmer could be involved in development projects and make a contribution. Then, who is the ultimate decision-maker in a village? It should be the village head, or sometimes the sub-district head. However, as mentioned above, it is not necessarily true that these decision-makers always represent residents' views and desires. In a traditional society, order is maintained via an already established social structure — whether it is democratic or not. Therefore, it is against the farmers' will to simply dismiss it as undemocratic or irrational and hastily introduce a new social structure or organization by destroying the old one in the name of democratization — except for places like settlements, where a new society must be created from scratch. Even if meetings are held by union farmers' groups, they are prone to become formality-only events designed for rubber-stamping purposes. When farmers engage in unpaid work under development/construction projects in the name of labor service, the outcome will vary drastically, depending on whether it is forced or voluntary — although outsiders often think it is okay as long as everybody participates. Real

resident participation is impossible unless all participants benefit. For example, in a village which is mainly engaged in paddy growing, water users' associations have been traditionally well-developed, on the basis of a cooperative structure formed around water for generations, whereas no such organization exists with other crops. Typical tasks in which farmers have a common interest include cooperative shipment. Coordinated efforts form the basis of cooperative work, including the type of rotational work sharing commonly seen in Indonesia (arisan tenaga), transplantation of rice seedlings for paddy growers, sowing for upland crop growers and clearing operations for shifting cultivation farmers. However, would farmer participation still be possible in the case of introducing a new planting system or developing new paddy/upland crop fields? In general, when agricultural development is undertaken as a national project — particularly if it is implemented by relying entirely on national funds — farmers' views and desires are less likely to be reflected. Namely, participatory development will be difficult because of the gap between the National Government's and farmers' interests. The more a project assumes a national character, the more alienated it becomes from farmers. As the rank of a project descends from the provincial to district, sub-district and village level, it becomes more familiar to farmers, and approaches their level. Conversely, as the rank of a project increases (rank up national level), the frequency of participatory development decreases, as its distance from farmers increases. Thus, this relationship is kind of inversely proportional.

##### **5. Variations in Development with Village Ethnic groups Composition**

When planning agricultural development, it is necessary to give consideration to the composition of the village ethnic groups. Conventionally, development plans have been drawn up based only on geographical and natural conditions. In this project, however, it was learned that the ethnic groups composition varied from village to village. This highlights the need to take into consideration differences in farming practices along region and ethnic group lines when undertaking participatory development. Farming involves traditional techniques passed on from generation to generation, so that it is difficult to introduce new ones, where there is no school, training center, or the like. In areas where there are migrant inflows, such as Southeastern Sulawesi, it is necessary to give due regard to traditional farming practices in existence for generations among each ethnic group, and make sure that the introduced technology is suitable for them. A survey was conducted on farmers' ethnic compositions in villages featuring in the project, and the results are shown in Fig. 3. Based on these results, an investigation into a development technique that takes into consideration ethnic differences will now be

undertaken, using experiences obtained in this project as an example. The villages involved in the project can be classified into the following categories in terms of ethnic composition:

- A. Mainly inhabited by indigenous population: Lalobao, Sabulakoa and Onewila
- B. Inhabited by indigenous and migrant populations (2 ethnic groups living apart from each other): Kiaea, Palangga and Laeya
- C. Inhabited by indigenous and migrant populations (Multiple ethnic groups completely intermixed): Ranomeeto and Lapulu

An examination in search of suitable development methods in line with this classification follows:

### **(1) Villages mainly inhabited by indigenous population**

In these villages, technology transfer means teaching the basics of cultivation from scratch. As mentioned above, traditional-style farming is still being practiced in these villages. Upland rice cultivation and starch production from sago palm pith gathering are the basis for their self-sufficient life-style, and this is complemented by red sugar production from sugar palm, logging (including rotan), honey collection, etc., undertaken as sources of extra income, under the mode of farming operation maintained to the present day. However, with a ban imposed on shifting cultivation, the upland rice production output is declining, while the sago palm population is also decreasing every year due to over-exploitation. Against this background, many farmers wish to be involved in paddy growing, but such a move has not always been successful due to a lack of experience and shortages of funds. Main project objectives should therefore be to develop a paddy growing infrastructure and provide farmers with education and training in improved farming practices, centering on paddy growing. In addition to paddy, cacao and other estate crops, corn, and the like are being introduced. These are relatively easy for farmers to accept, and it is important to provide adequate guidance regarding their basic cultivation. An imprint project goal is to make farmers understand basic cultivation techniques and promote their spread.

### **(2) Villages inhabited by indigenous and migrant populations (2 ethnic groups living apart from each other)**

The biggest problem with these villages is the gap between migrants, who traditionally have relatively advanced farming techniques (particularly paddy growing), and indigenous farmers, who lack such skills. Naturally, migrants are more active and have a strong pioneering spirit, while indigenous people are conservative and optimistic.



Therefore, the gap between them can only increase. A possible agricultural technology transfer method here is to create a mechanism whereby migrants' skills permeate the village as a whole, based on unity between migrant and indigenous populations. If possible, it is advisable to design each project as a cooperative enterprise to be completed by both ethnic groups and incorporate elements which are beneficial to both groups. An example is the joint construction of farm roads etc. At any rate, it is more common for the village head to be elected from the indigenous population, and the direction of development is greatly influenced by his and other village leaders' ideas and interests in farming techniques.

### **(3) Villages inhabited by indigenous and migrant populations (multiple ethnic groups completely intermixed)**

In general, these villages have relatively advanced farming techniques, with a great diversity of farming methods. However, difficulty in securing funds poses the major obstacle for development, and this is a quite common situation. Where there are a great number of ethnic groups, differences between them, no matter how small, still exist, and practices, such as credit business, labor service and rotational work sharing, are difficult to develop. Employment-based work tends to take precedence over common Indonesian-style cooperative work (gotong-royong). Such an environment, nevertheless, provides indigenous people with some incentives, as well as opportunities to obtain considerable technical skills from migrants. However, with the spread of farming techniques, needs for farm tools, machines and supplies increase. In implementing a project, therefore, it is necessary to draw up a development plan, taking into consideration such matters as purchase methods for fertilizers, agricultural chemicals, etc. and the introduction of facilities for common use.

However, these issues are all time-dependent. It is therefore quite a difficult task to determine what to include as project goals in view of the interest of the longer-term agricultural development of these villages. This also concerns how to change society and how to apply technology to the changed society. For a society with a large population which has little experience with cultivation, consideration needs to be given to training and the fostering of the next generation.

## **6. Views on Sustainability and Participatory Approach in Development Project Assistance and Implementation**

Japan's (a developed country's) assistance for overseas development projects generally involves both equipment and people. Namely, the provision of equipment and

materials is undertaken in combination with the dispatch of experts in an effort to transfer technology. However, with this form of assistance, people often go back to the old way of doing things, as soon as the project is over. There are strident calls for methods which ensure that project assistance has lasting effects and takes root in the local community. To meet these demands, participatory projects are being pursued on the grounds that this will facilitate the sustainability of project activities.

In the past, international cooperation programs for developing countries were often considered to be complete, once equipment was supplied and local staff trained. However, there are problems with this kind of attitude, as in the case of model farm, training center, and other similar projects. For example, farmers returning their villages after training often find themselves without equipment to work with, and where there is equipment, it sooner or later becomes useless junk, as it breaks down or its parts are worn out. In these cases, technology transfer has been completed as planned on the formal level, but has in fact failed to do so as it did not take hold in the local community. When a machine is introduced to villages under grant-in-aid programs (such as 2KR), instructions are given reasonably well about its operation, but this rarely happens with repair. If it breaks down, no repairers or suppliers are readily available, so that, in many cases, it is just left idle for lack of a single bolt, for example.

Farming is all about growing crops, and, to do so, it is necessary to have suitable planting tools. Without tools there can be no crops. To use tools and machines, some technical skills are required. In agriculture, crops and cultivating/farm tools constitute the two most important elements. Without them, you can't get anywhere. Securing them therefore constitutes a precondition for sustained agricultural production. This means that training and education is necessary as a means of providing people (farmers) with the technical expertise necessary to use farm tools. Likewise, funds are also required to buy machinery, with a management and repair support system needed to ensure the sustainability of this operation (farming). Pursuit of these three points in a systematic manner forms the basis of ensuring sustainability in agricultural development. Based on this view, a project was implemented, with details given below.

### **(1) Farmer training**

Under the project, a farmer training program was devised to provide training courses for agricultural extension officers, who play the role of agricultural leaders, and government staff, as well as farm groups as a direct farmer training method. An outline of the training program is given below.

- 1) Agricultural and rural development planning
  - a. Agricultural and rural development planning seminars
  - b. Land reclamation and consolidation course
  - c. Agricultural machinery operation and maintenance course
- 2) Farm operation planning and cultivation
  - a. Paddy growing course
  - b. Upland crop growing course
  - c. Estate crop growing course
  - d. Diversified and intensive farm operation (including live stock farming)
  - e. Water management
- 3) Farmers' groups
  - a. Farmer's group strengthening
  - b. Strengthening of rural women's groups
  - c. Improvement of rural life
- 4) Other activities for supporting project
  - a. Training of rural youths
  - b. Training of less experience farmers
  - c. Farmer's day
  - d. Study tours to advanced areas outside province

Although the program's focus is general, greater preference is given to those involved in rural development at a more grass-roots level. The highlight of the program is the incorporation of such elements as training courses for youths, on whose shoulders the future of the village depend, and less experience farm households, including small farms, with a limited production output and opportunities for technical training, as well as a Farmer's day (agricultural festival), aimed at invigorating the village. As a participatory program targeting all villagers, it also incorporates courses for women with a focus placed on improving the living standards of the village, and has a cumulative total of more than 500 participants. Refer to Table 1 for attendant details. Since it is a farmer-level program, training should be practically oriented, compared to school education, which is more academic. For example, farmers learn how to grow a crop by actually doing it. Training for water management should be provided through the actual experience of using water management methods and should be useful in everyday operations as soon as the training is completed. In this regard, education and training programs similar to those offered at a practical agricultural academy, which teaches Danish farming methods, once introduced to

Japan as well, are important. In Kiaea Village, there is a graduate of the Bengkulu Practical Agricultural Academy, and the effectiveness of this system is evident from the great contribution he is making to the village. It will also be necessary to provide local field officials with practically oriented training through, for example, university practical courses.

## **(2) Purchase and maintenance system for farm tools and agricultural machines**

Farm tools and agricultural machines are burdensome items for farmers. While tools may not be so expensive, agricultural machines require large funds. To overcome this, methods such as cooperative purchase, group purchase and borrowing are normally used. The most effective method is group purchase through joint investment by all group members and running a renting operation. It is a commonly used assistance technique to provide villages with machinery through a project as a grant to facilitate their agricultural development (e.g. KR2). This was also the case with this project, although it can be via a loan, depending on the recipient country. At any rate, if the supplied machinery is left idle once it breaks down, sustained operation will be impossible. To ensure lasting investment benefits, a fund pooling system whereby the machinery is rented to farmers/end users for a fee was introduced to cover management, repair and depreciation costs. Part of the proceeds can be saved to finance additional purchases, etc.

## **(3) Fostering of village mechanics and machine repair system**

When implementing a project which involves technical tasks, the availability of technical personnel is critical. In cases where the social status of technical personnel is low, or where there are no technical staff assigned to the office, securing technical personnel can be very difficult. The following are frequently encountered problem patterns:

- 1) The counterparts are unwilling to dirty their hands (i.e. practically excluding themselves from repair work).
- 2) People change jobs as soon as they acquire technical skills.
- 3) Technical personnel are in short supply and difficult to recruit.

Under this project, in particular, the following problems were experienced:

- 1) Since the project falls under the jurisdiction of a regional administrative office that

coordinates various agricultural projects, there were no technical staff assigned to it.

2) The counterparts have good formal qualifications, so that they mainly engage in supervisory work, rather than using their own hands. Even if good mechanics often resign as soon as they acquire technical expertise for another position offering better conditions.

3) Personnel playing a key role in the implementation of the project cannot become managers, if they only have field/practical experience and lack formal qualifications.

Under these circumstances, it is impossible for the Japanese experts and local counterparts to manage all the repairs for the machinery supplied to the villages. Although formal responsibility for the maintenance, operation and repair rests with the villages, they do not have the resources to carry out repairs at present, both in human and material terms. Therefore, if the project authority does not follow up, the machinery introduced as a grant will soon become unusable. To overcome this, a village mechanic fostering scheme was launched. Under the system, trainees undertake a month's repair work alongside counterparts and Japanese experts, covering all the machinery owned by the project authority, and, after the program, are sent back to their villages with a toolbox. Certain conditions apply to acceptance for training, however. Namely, trainees are required to return to their villages upon completion of the training, and engage in a machine repair business, as well as recording their activities including all machine repair requests and on-site repair results in a service logbook, and reporting to the agricultural extension officer. This will be useful to keep track of the condition of the machinery supplied and check the responsibility of the mechanic. Through this system, including the assistance provided by the project authority, management of the machinery supplied under the project becomes possible. Part of fee revenues generated from renting the machinery can be used to fund repairs. The system should be run on a financial self-sufficiency basis, although the project authority provides support in the case of major faults or the procurement of parts. The village mechanic and repair procedure are outlined as follows:

- A recommendation supporting one's candidacy as a village mechanic trainee is received from the village authority
- Field training is provided by the project authority (1 month), and practical skills are acquired.
- Upon completion of the training, trainees return to their villages as village mechanics and undertake repairs for all the machinery located there.
- The results of repairs performed in the village are reported to the agricultural extension officer, with a memo submitted.
- Repairs are provided, centering on the machinery supplied under the project, with their

costs taken care of under the machine rental system run by the village.

- Necessary parts and components are ordered directly from the local agent, or, in some cases, the project authority considers alternative action
- If a mechanic comes across repair work which is too difficult to carry out, the project authority should be informed.
- Mechanics are provided with a tool box to take around with them.

In terms of sustainability in agricultural development, a project cannot be regarded as living up to expectations, if it is not adequately managed and does not have lasting benefits, even if it satisfies all material needs and all supplied equipment works properly. By expanding on the traditional view that project-type assistance programs are complete once facilities are constructed and equipment and materials distributed, training schemes have been added to help local people use the equipment. However, this is still insufficient to ensure the sustainability of development. Under this project, therefore, a management and repair system for the supplied facilities and equipment was introduced, in addition to the provision of training in their operation. As a result, mechanics have been able to be trained and deployed in each village. Moreover, a stock fund system was introduced for the repair and renewal of machinery. A comprehensive system that combines the above three systems that correspond to the three basic elements of agricultural development in villages has been established. It is called the 3M System, and is summarized below.

Man-power (training of farmers regarding the operation of tools and facilities)

Money (stock fund system for the maintenance of tools and facilities)

Management (maintenance of supplied equipment by village mechanics)

With this kind of method, equipment and supplies mobilized for development can be effectively utilized, as in the case of an agricultural and rural development project implemented in Southeastern Sulawesi Province, which is producing very encouraging results.

## **7. Conclusion**

Agriculture in this region is definitely changing. Traditionally, shifting cultivation and sago starch production farming were practiced at the villages, growing upland rice, sago palm, corn and cassava. Against this background, paddy growing has been introduced, bringing a new social structure to the traditional society.

This can be shown schematically as follows:

Shifting cultivation and sago palm pith gathering (food source from forests)

Sustainable life by self-sufficient

| (increased demand for goods amid nationwide modernization trend)

Shift to paddy and estate crops (decline in upland rice and sago)

|

Economic change (money-based economic system)

|

Reform of rural society

Paddy growing in existence in the region from earlier times had only been practiced on a small scale, by migrants in areas where irrigation water was abundant or by indigenous people using small patches of wetland under the influence of migrants. As the size of paddy fields increased and sago forest clearing began, the necessity for cooperative work, such as water management, the establishment of rice nurseries and the transplantation of rice seedlings, arose. Consequently, rural society has begun to change, developing stronger bonds with paddy fields. The following are different stages of paddy production reached in different villages prior to the project:

- 1) Villages where paddy fields had not previously been introduced (Lalobao and Sabulakoa)
- 2) Villages where the main mode of paddy growing was personal (Onewila and Konda)
- 3) Village where a new order had begun to emerge in paddy grower's group (Ranomeeto)
- 4) Villages where order had been established along farmer's group (Palangga, Kiaea and Lapulu)
- 5) Villages where a paddy-based society had been established by migrants (Simdangkasih and Jati Bali)

A simple but important conclusion was able to be drawn from the experience obtained through the implementation of this project. That is, "technology must be acceptable to rural society before it can be introduced". This is a universally applicable fact, whether it is agriculture on semi-arid land or on wetland. Using purely scientific data, for example, the possibility of introducing double-crop farming on both types of land can be shown. However, the major problem is whether society is ready to embrace the technology. The author believes that technology transfer and agricultural extension techniques provide the means of agricultural development, and constitute its starting point.

Without this perspective, agricultural development will not work, even with the latest facility, machinery and tools. Namely, the transfer of sustainable technology is the key to “sustainability” in agricultural development.



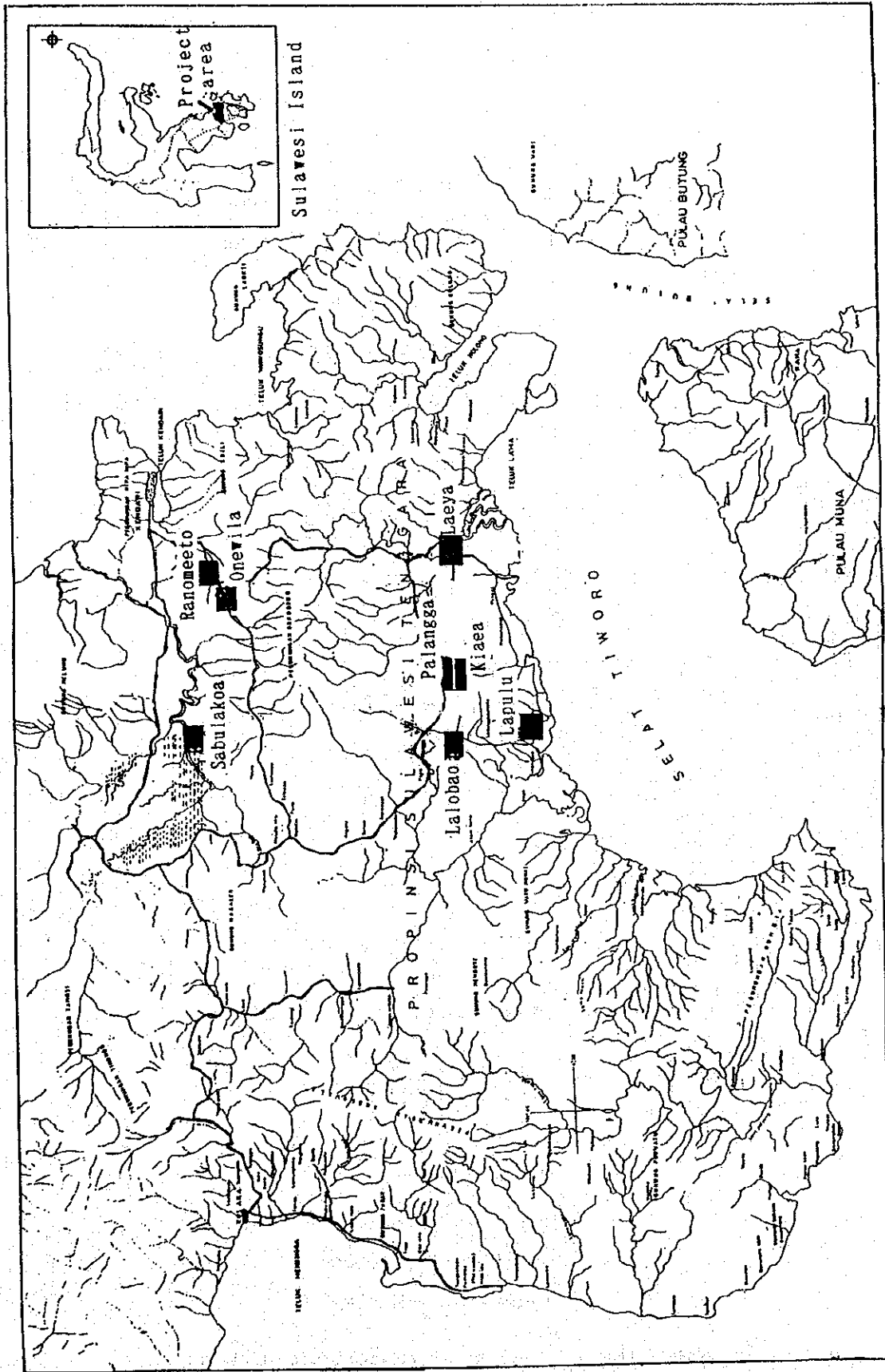


Fig. 1 Project location on integrated agricultural and rural development in Southeast Sulawesi, Indonesia

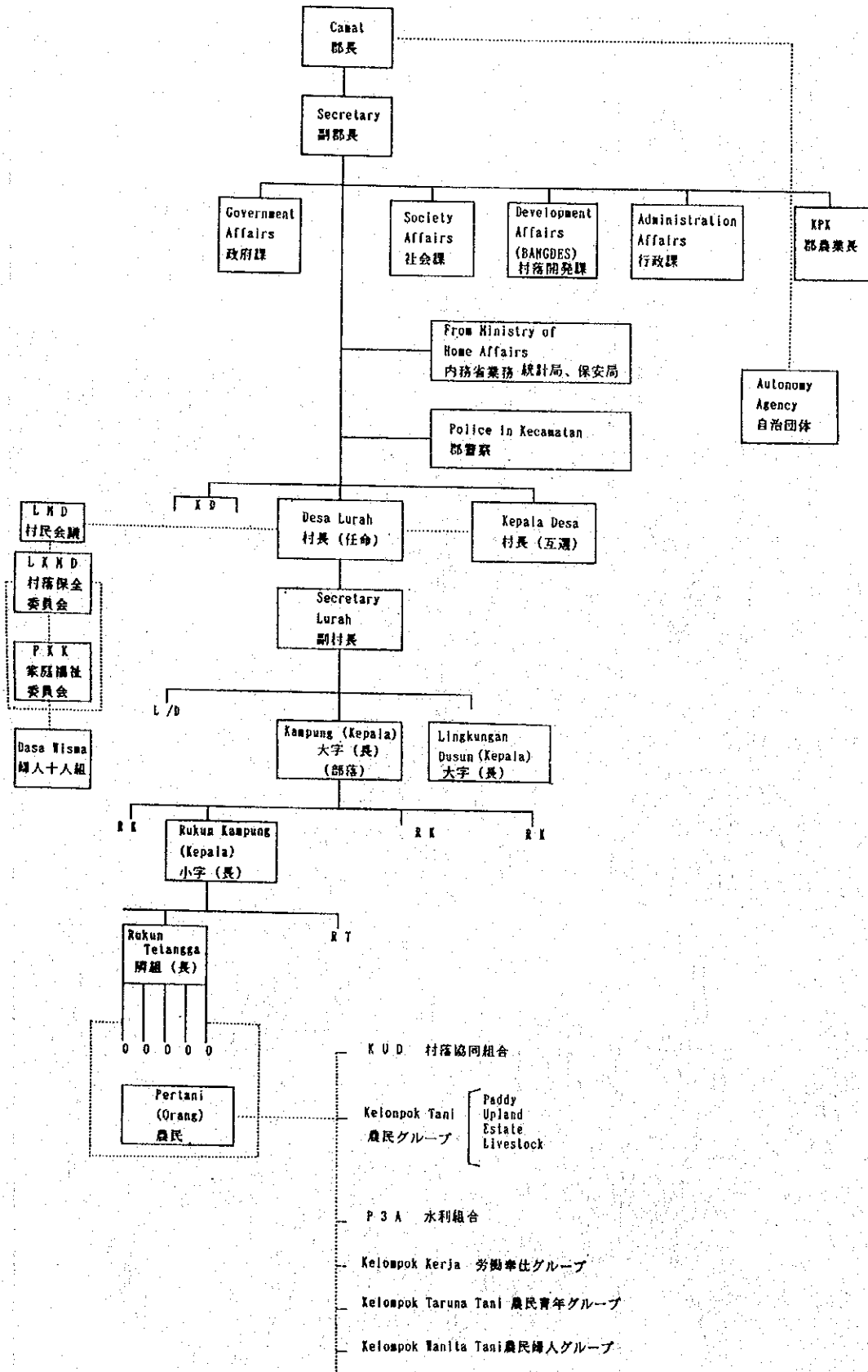


Fig. 2 Organization of Kecamatan and Village administration in the project

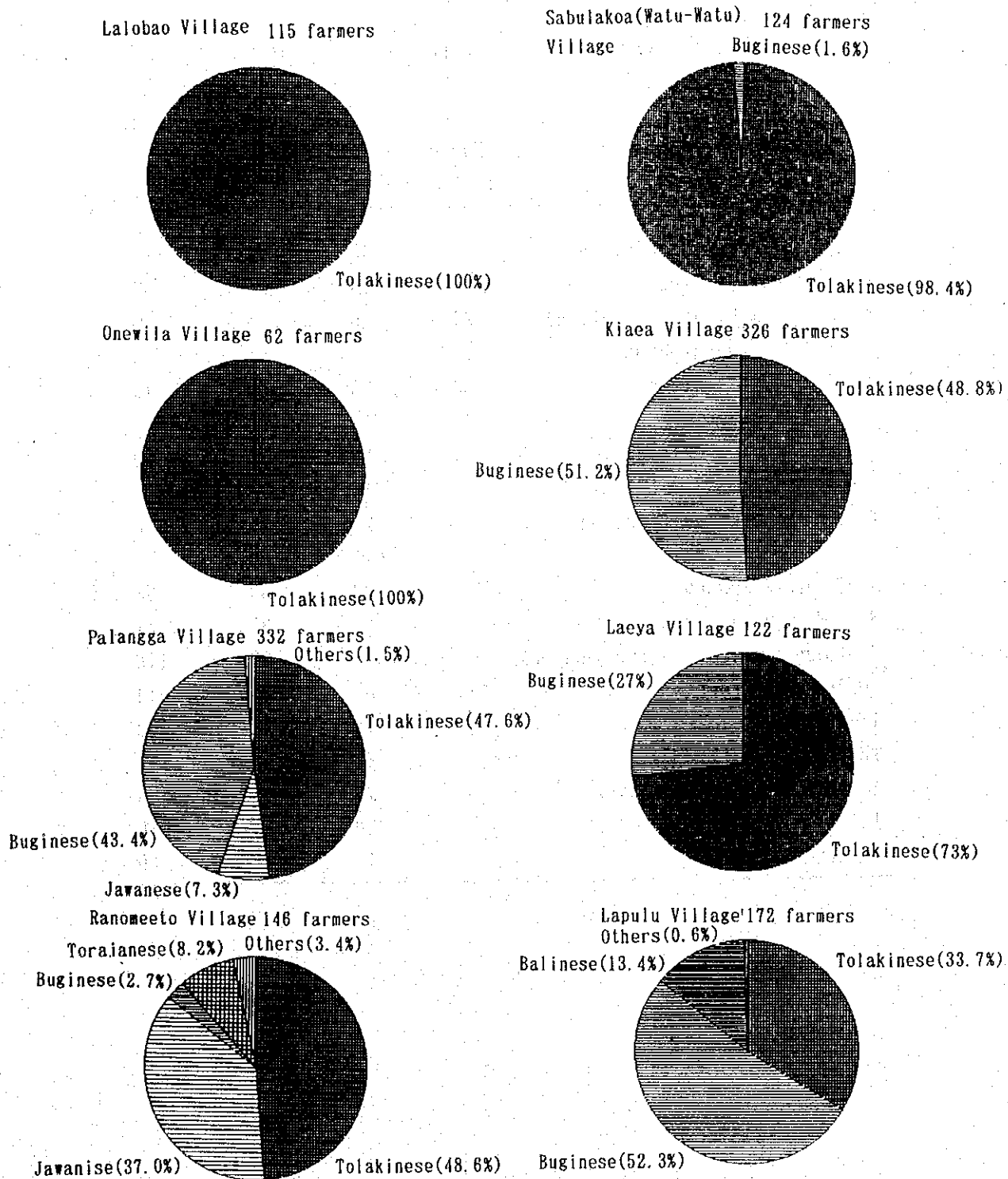


Fig.3 Ethnic groups of 8 villages in the project, Kendari province

Table 1. Training result of farmer's participation in the project  
(in 1991-1993)

| Kind of training                               | Number of Participants |      |      |       |
|------------------------------------------------|------------------------|------|------|-------|
|                                                | 1991                   | 1992 | 1993 | Total |
| 1. Agri. & rural development                   |                        | 45   | 64   | 111   |
| 2. Land reclamation                            |                        | 16   | 21   | 37    |
| 3. Agri. machinery(operation)<br>(maintenance) | 20                     | 20   | 30   | 70    |
| 4. Puddy cultivation                           | 20                     | 20   | 30   | 70    |
|                                                |                        | G10  | 99   |       |
| 5. Upland crop cultivation                     | 20                     | 20   | 20   | 60    |
|                                                |                        | G10  | 100  |       |
| 6. Estate crop cultivation                     |                        | 20   | 20   | 40    |
|                                                |                        | G10  | 50   |       |
| 7. Farming system                              |                        | 33   | 50   | 83    |
| 8. Water management                            |                        | 20   | 37   | 57    |
| 9. Farmer's group strengthening                |                        | 65   | 53   | 118   |
| 10. Women's group                              | 117                    | 381  | 233  | 614   |
| 11. Rural life                                 |                        | 78   | 74   | 152   |
| 12. Farmer Youth                               |                        | 83   | 53   | 135   |
| 13. Less experience farmer                     |                        | 79   | 67   | 146   |
| 14. Farmers' day                               |                        | 250  | 320  | 570   |
| 15. Study tour                                 |                        | 15   | 15   | 30    |







