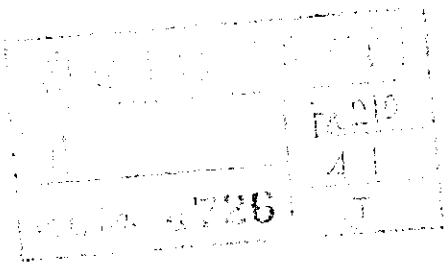
(AF) 50-54

SUMMARY REPORT ON EVALUATION SURVEY OF WEST JAVA FOOD PRODUCTION INCREASE PROJECT INDONESIA

OCTOBER 1975

Agricultural Development Cooperation Department
Japan International Cooperation Agency



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FOREWORD

ITINERARY AND FORMATION OF SURVEY TEAM

I. Formation of the Survey Team

Name		Assignment	Affiliation
Eiji	YAMAGIWA	Leader	Head of Extension and Teaching Section, Agricultural Extension Division, Ministry of Agriculture and Forestry.
Seiji	NAKAMURA	Extension Planning	Agricultural Extension Specialist, Kanagawa Prefectural Government.
Tadatoshi	SUGIMOTO	Cooperation Planning	Assistant Chief, International Cooperation Section, Agricultural and Forestry Economic Affairs Bureau, Ministry of Agriculture and Forestry.
Kenzo	IKEDA	Agricultural Materials	Chemical Fertilizer Division, Basic Industries Bureau, Ministry of International Trade and Industry.
Hidetaka	KOZUKI	Coordination Liaison	Technical Cooperation Section, Agricultural Development Cooperation Department, Japan International Cooperation Agency.
Akira	KIMURA	Observer	Assistant Section Chief, Japan Ammonium Sulphate Industry Association.

II. Itinerary of Survey Team

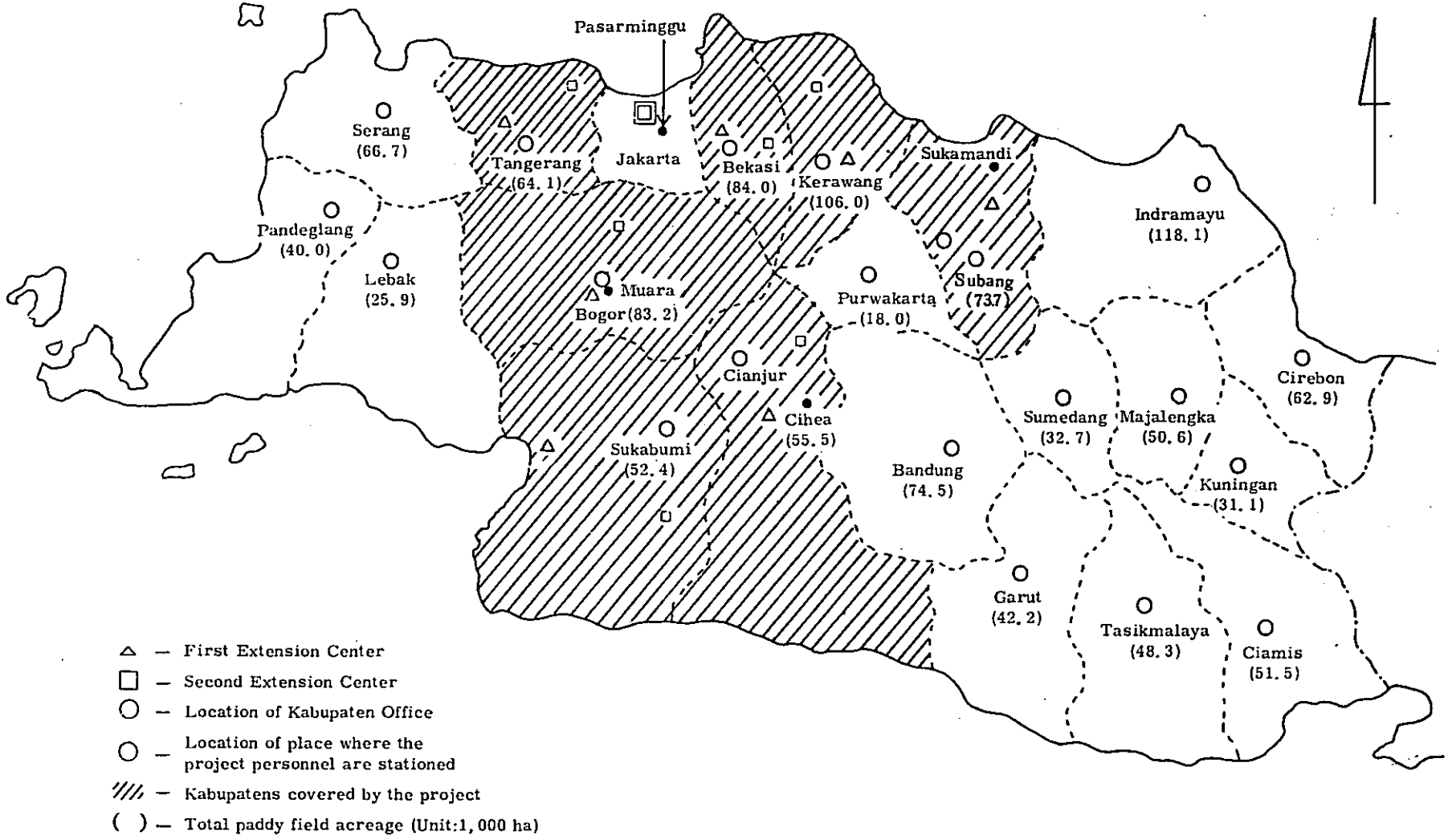
Date	Description
Oct. 23 Wed.	Departure of the three-member advance party (Nakamura, Ikeda and Kozuki) from Haneda International Airport at 09:10 hrs by JAL 711, and arrival at Jakarta Harim Airport at 20:00 hrs; Received by Mr. Takei, Chief of JICA Jakarta Office and three experts, Messrs. Funada, Akagawa and Ishii, with whom the survey schedule was discussed and arranged for at Hotel Asoka. (Overnight stay at Hotel Asoka)
24 Thu.	Courtesy call made on Counsellor Mogi, Secretary Tomaru and Secretary Uesugi of Japanese Embassy; Courtesy call made on JICA Jakarta Office; Consultation with Messrs. Funada and Akagawa on the survey plan. (Overnight stay at Hotel Asoka)
25 Fri.	Courtesy call made on the Agricultural Extension Department of the Ministry of Agriculture, where arrangements for the survey schedule were made at a meeting attended by the following persons. Extension Dept. : Director Raharja and Inspector of West Java Province. Japanese Embassy : Secretary Uesugi JICA Office : Mr. Takei, Chief of JICA Office, and Messrs. Funada, Akagawa and Ishii. (Overnight stay at Hotel Asoka)
26 Sat.	Moved to Cipanas; Arrangements made with Messrs. Funada and Akagawa for detailed procedures of survey.

			(Overnight stay at Hotel Suggwa Buwana)
Oct.	27	Sun.	Holiday
	28	Mon.	Questionnaires handed with explanation of the survey objectives to Indonesian counterpart experts and chiefs of extension centers of Kabupatens Bekasi and Cianjur at Cihea Provincial Farm. (Overnight stay at Hotel Suggwa Buwana)
	29	Tue.	Observation of landing of carps cultured in paddy field ponds in Cihea area; Observation of and participation in the interviews with the farmers in Cihea area, and inspection of Himpunan Tani Mulia. (Overnight stay at Hotel Suggwa Buwana)
	30	Wed.	Consolidation and collection of data at the Office of Cihea Provincial Farm; The team joined by observer Mr. Akira Kimura. (Overnight stay at Hotel Suggwa Buwana)
	31	Thu.	Inspection of Cibeber Extension Center (P3) in Kabupaten Cianjur and direct interviews with 4 each of dem-farm operating farmers and non-operating farmers. (Overnight stay at Hotel Suggwa Buwana)
Nov.	1	Fri.	Inspection of Gunonghalu Extension Center in Kabupaten Cianjur and direct interviews with 3 OTCA dem-farm operating farmers, 5 BIMAS dem-farm operating farmers and 3 farmers having no experience in dem-farm operation. (Overnight stay at Hotel Suggwa Buwana)
	2	Sat.	Inspection of Ciranjanghilil model KUD/BUUD and Kios in Kabupaten Cianjur. (Overnight stay at Hotel Suggwa Buana) Arrival of Leader Yamagiwa and member Sugimot at Jakarta.

Nov.	3	Sun.	The team joined by Leader Yamagiwa, member Sugimoto and JICA expert Mr. Ishii at Cipas; Trip to Bandung after inspection of Cihea Provincial Farm and its office; Dinner banqueted for the staff of Cihea Center, attended also by Mr. Yoshihiko Ikei, Leader of Japanese Survey Team for Tajum Pilot Irrigation Project. (Overnight stay at Hotel Panghegar)
	4	Mon.	Courtesy call made on Inspector Sabur of provincial government of West Java; Invited to a luncheon beld by Inspector Sabur; Inspection of Kalijati Extension Center in Kabupaten Suban and observation of the activities of its extension workers. (Overnight stay at Hotel Jatiluhur)
	5	Tue.	Direct interviews with the farmers in the service area of Tambun Extension Center at Sukajaya Desa Office in Kabupaten Bekasi (Interviewees: 4 dem-farm operating farmers and 8 other farmers): Trip to Jakarta. (Overnight stay at Hotel Inter House)
	6	Wed.	Visit by Leader Yamagiwa and member Sugimoto to the Joint Research Team at Central Agricultural Research Institute, Bogor (LP3); Inspection of Telukpucung Extension Center in Kabupaten Bekasi and direct interviews with 3 each of dem-farm operating farmers and other farmers by three members, Nakamura, Ikeda and Kozuki, and trip to Bogor after the interviews. (Overnight stay at Hotel Salak)
	7	Thu.	Inspection of Sepatan Extension Center in Kabupaten Tangerang. (Overnight stay at Hotel Inter House)
	8	Fri.	Consolidation and reviewal of collected data. (Overnight stay at Hotel Asoka)

9	Sat.	Courtesy call made on Japanese Embassy by Leader Yamagiwa; Invited to a luncheon by JICA Jakarta Office with Leader Iwata of the Joint Research Project Team; Compilation of a tentative report; Invited to a dinner by Japanese Ambassador Sunobe (Overnight stay at Hotel Asoka)
10	Sun.	Inspectio of the farmland consolidation and improvement work in Cihea area by the Team Leader and Nakamura; Compilation of the farmland consolidation and improvement work in Cihea area by the Team Leader and Nakamura; Compilation of the tentative report by other members; Banqueted at a dinner by Mr. Salmon, former director of the Agricultural Extension Department of the Ministry of Agriculture, at his house with Mr. Uesugi, Secretary at Japanese Embassy, Mr. Nojima, Leader of Japanese Survey Team for Lampung Agricultural Development Project, and Mr. Takei, Chief of JICA Jakarta Office. (Overnight stay at Hotel Asoka)
11	Mon.	Presentation of the tentative report with explanation after a luncheon held by the Agricultural Extension Department with was attended by Mr. Soemantri, Mr. Raharja, Mr. Takei and other personnel concerned. (Overnight stay at Hotel Asoka)
12	Tue.	Departure from Jakarta at 08:00 hrs by JAL 712, and arrival at Tokyo at 20:00 hrs.

III. Map of the Area Covered by West Java Food Production Increase Project



PART I. CIHEA TANI MAKMUR CENTER AS AN EXTENSION BASE

SUMMARY

(1) Outline of Cihea Tani Makmur Project Center

- o Cihea Tani Makmur Center, established by the close cooperation between the Governments of Japan and Indonesia, is equipped with excellent buildings and facilities comparable to those of any similar establishments in Indonesia. It is hoped that the facilities available at the Center will be fully made use of for accelerated food production in West Java.
- o The Center is managed by a staff of 11 highly qualified and capable staff. By the reorganization effected after the termination of the cooperation period, the Technical Development Division was newly established and the Extension Division is now the core of the Center. The reorganization also resulted in the retrenchment of the agricultural machinery sector. In the coming years, the Center will face the need to promote its activities in harmony with the extension centers in the surrounding Kabupatens.
- o Since the supply of equipment and materials under the aid agreement can no longer be counted upon, the Center must promptly map out its future plan of operation with due account taken of the activities of other similar establishments. Specifically, the Center is now required to select its main line of activities from among a variety of services such as extension, trials and experiments, training, seed production, etc.

(2) Management of Provincial Farm

- o The 250 ha farm under direct provincial management was created in 1970. The irrigation work and the farmland consolidation work covering 100 ha of this provincial farm were carried out in 1972 and 1973 and completed as scheduled.
- o The model farm consisting of a demonstration and training farm and a trial cultivation plot was created in the 1971 set season. In the final year of the aid agreement, the whole farm area was used as an experiment farm.

- o About 20% of the farm area had to be left unplanted in every cropping season on account of the farmland improvement and consolidation work. However, the farmland improvement and consolidation work was completed just before the termination of the cooperation period, and the management of the completed farm after the agreement was left to the Indonesian side.

(3) Seed Production

- o Establishment of a public seed production system for stable supply of high quality seeds is an indispensable prerequisite to the extension of improved paddy cultivation practices. For many reasons not detailed here, however, it was in 1973, the final year of the cooperation agreement, that the Center started to supply seeds to the surrounding areas.
- o If a 30 ha seed farm is maintained as originally planned, stable supply of stock seeds to the surrounding 7 Kabupatens can be assured so long as the seed production on the Desa level encounters no hindrance. However, production from the said seed farm does not suffice to meet the demand of the whole province.
- o In order to establish a stabilized seed production system, it is necessary to determine where to distribute stock seeds and set up the terminal production organization in a systematic manner.

(4) Trials and Experiments at Model Farm

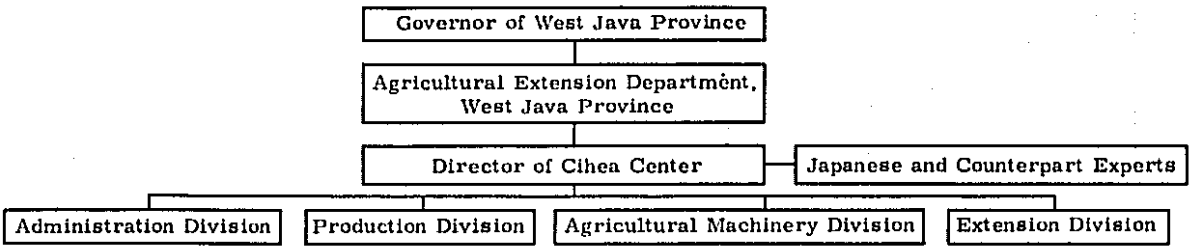
- o Field confirmation and verification of production techniques constitute an important item of technical cooperation not only for enhancement of extension services but also from the viewpoint of overall situation in Indonesia. It is believed that this specific item of cooperation requirement was filled satisfactorily by a series of trials and experiments which were conducted intensively at Cihea with due account taken of the findings produced at Muara.
- o Findings of the trials and experiments were successively incorporated in the standard cultural practice of the demonstration farms, whereby remarkable effect was observed from the 1972 wet season cropping.

- As for the problems entailed in the future management of the demonstration farms, such as the possible specialization of research workers and the need to clear up new technical questions that may arise after the agreement, a long-range observation will be required.

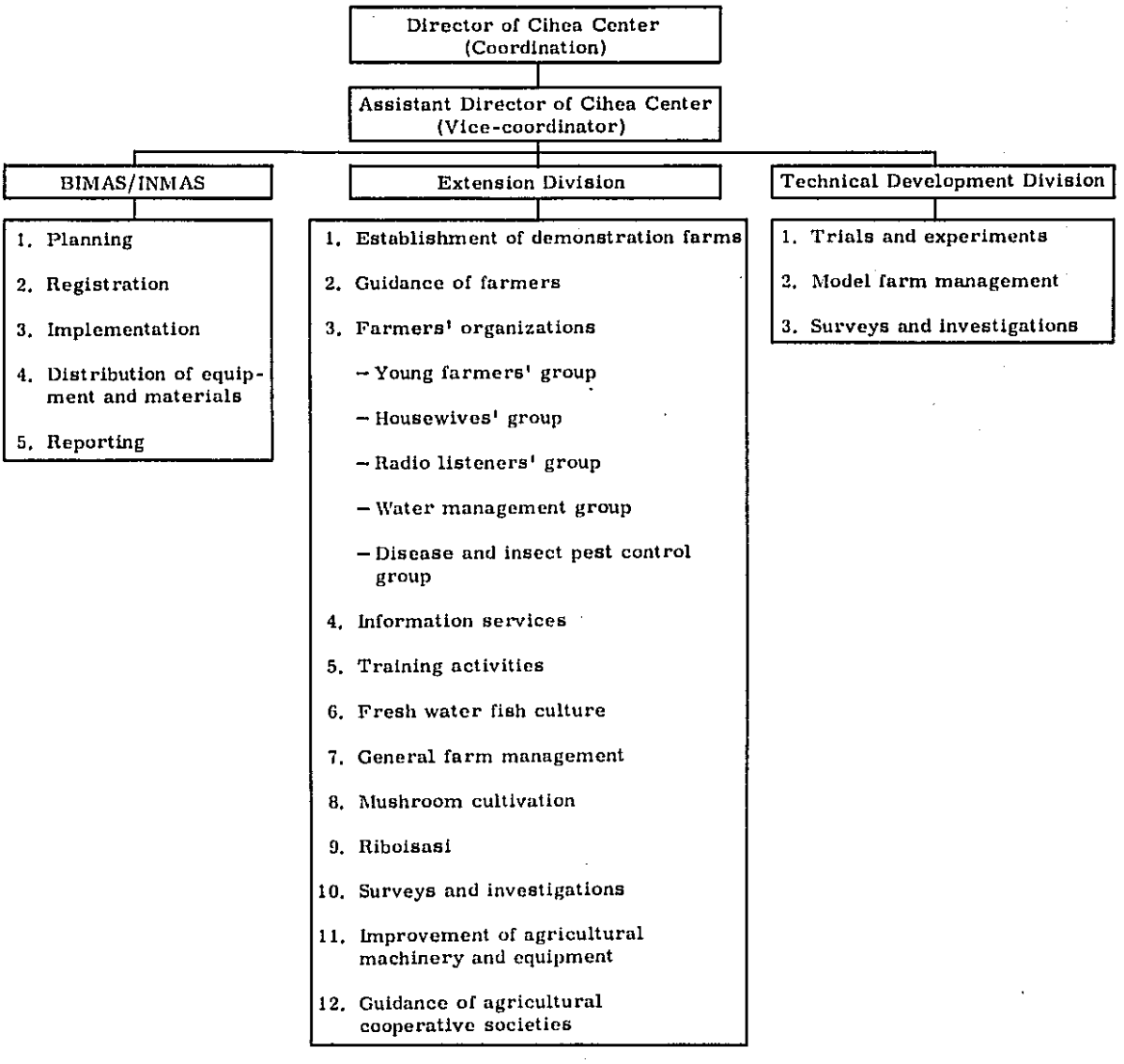
I. Outline of Cihea Tani Makmur Center

1. Organization

(1) 1971 to May 1974



(2) After May 1974



Note: It was understood that the Center would be managed with the Extension Division as the core of its activities after expiration of the technical cooperation agreement.

2. Staff

No.	Name	Educational Level	Year of Graduation	Qualification/ Degree	Date of Appointment	Training Record	Present Post	Past Assignments	Japanese Experts
1	Dedi Rustandar	Agricultural college graduate	'69	Ir	Aug. 1, '71	3-month training course in the organization and management of agricultural cooperative society in Japan	Director of the Center		
2	Sjukri A. M.	"	'71	"	Aug. 1, '71	3-month training course in agricultural extension in Japan	Counterpart expert specialized in extension services	Chief of Production Division (6 months) and counterpart expert (2 years and 6 months)	Mr. Funada
3	Momo Hermawan	"	'71	"	Nov. 1, '71	11-month training course in paddy cultivation techniques at Uchihara, Japan	Counterpart expert attached to the Production Division		Mr. Tokunaga
4	Munir	"	'71	"	Mar. 1, '72	6-month training course in plant protection techniques at Hyogo, Japan	Counterpart expert attached to the Chief of the Production Division	Attached to Administration Division (1 year and 6 months) and Production Division (1 year)	Mr. Ogawa
5	Toto Sumarta	"	'71	"	Dec. 1, '71	10-month training course in irrigation engineering in Japan	Counterpart expert		Mr. Wakabayashi
6	Budiraharjo	"	'71	"	Dec. 1, '71	4-month training course in irrigation engineering at Uchihara, Japan	"		"
7	Wazlir	"	'67	"	Mar. 1, '72	10-month training course in agricultural machinery in Japan	Chief of Administration Division	Assistant Director of the Center (1 year) and counterpart expert (2 years)	Mr. Haga
8	Elon Rachlan P.	Junior agricultural college graduate	'69	B. C. S.	Mar. 1, '71	"	Chief of Agricultural Machinery Division	Counterpart expert (5 years)	"
9	Tetje IAG	"	'70	"	Before 1971	6-month training course in plant protection techniques in Japan	Staff of Production Division	Staff of Production Division (1 year)	Mr. Funada
10	Sukirno	Agricultural high school graduate	'61	–	"	10-month training course in irrigation engineering in Japan	Staff of Production Division	Teacher at agricultural middle school, and counterpart expert (2 years and 6 months)	Mr. Wakabayashi
11	R Tjutju M	Agricultural Colledge graduate	'71	Ir	Feb. 1, '74		Counterpart expert (assistant to Mr. Funada)	Expert at Bogor Kabupaten Farm (1 year and 6 months) and counterpart expert (2 months)	Mr. Imanishi

Note: The Center is staffed by young members but most of them are college graduates.

Assignment \ Staff No.	1	9	8	3	5. 6	7. 2. 11	4	
Planning	◎	○	○	○	○	○	○	
Farm management and maintenance					◎			◎=Chief
Trials and experiments		○		◎				○=Assistant
Plant quarantine							◎	
Agricultural machinery and equipment			◎					
Management of the Provincial Farm			○	○		○	○	
Seed Center management		○	○	◎				
Demonstration farm management		◎	○	○		○	○	
Organization of farmers		○	○			◎		
Training services		○	○	○		◎	○	
Japanese expert		Mr. Funada	Mr. Akagawa					

3. Facilities

(1) Buildings

Classification \ Particulars		Number	Year of Completion	Construction Cost	Fund Source	Building Area	Remarks
Office Room	Office of Administration and Extension Divisions	1		780,000	Farm	m 15x15=225m^2	
	Office of Japanese and Counterpart Experts	1	1973	1,500,000	Central Government	15x10=150	
Ware-house	Seed Storehouse	1		714,550	Farm	10x25=250	
	Products Storehouse	1		2,030,000	"	15x70=1,050	
	Fertilizers and Chemicals Storehouse	1	1971	3,174,240	Provincial Government	10x40=400	
	Farming Equipment Storehouse	1	1971	3,083,460	"	10x40=400	
	Farming Equipment Repair Shop	1	1971	3,043,680	"	10x40=400	
	Milling Plant	1	1971	1,500,000		10x25=250	Remodelled
	Seed Drying Room	1	1973	1,000,000	Farm	15x20=300	
	Electric Room	1	1973	500,000	Provincial Government	25x3 =75	

Classification / Particulars		Number	Completion	Construction Cost	Fund Source	Building Area	Remarks
Meeting Hall and Dormitory	Staff Members' Meeting Hall	1	—	949,920	Farm	10x15=150	
	Trainees' Meeting Hall	1	—	990,000	"	10x15=150	
	Dormitory of Staff Members	3 1	— 1972	258,700 1,200,000	" Provincial Government	10x15=150	x5
	Dormitory of Counterpart Experts	5 1	1972 "	6,150,000 1,250,000	" Central Government	10x15=150	x6
	Dormitory of Japanese Experts	2	1973	2,500,000	Central Government	10x15=150	
	Training House	1	1973	6,000,000	"	5x40=200	
Other Buildings	Laboratory	1	1973	2,000,000	Provincial Government	10x15=150	
	Mosque	1 1	1973 —	500,000 36,000	" Farm	5x5 =25 5x10=50	
	Drying Yard	2 1	— 1973	542,800 500,000	" Provincial Government	30x40=1200 20x30=600 15x20=300	
	School	2	—	1,471,840	Farm	10x20=200 10x40=400	
	Conference Room	1	—	165,000	"	10x20=200	
	Guest Room	1	—	150,000	"	10x15=150	
	Electric Facilities	1	1973	1,500,000	Provincial Government	–	
	Road Under Repair		1971	11,000,000	"	3x4000=12000	
Total		36		56,770,190		20,857.5m^2	

(2) Farm

Unit: ha

Nomenclature / Year	1971		1972		1973	
	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
Paddy Field	263,029	259,764	213,955	215,829	163,389	190,801
Upland Field	-	-	-	4,000	10,600	-
Experimental Farm	-	0.248	0.248	0.200	0.516	4.043
Model Farm	-	3,017	3,000	3,000	3,000	-
Farm Under Consolidation Work	-	-	40,000	40,000	40,000	56,729
Uncultivated Area	-	-	5,999	-	45,524	-
Total	263,029	263,029	263,029	263,029	263,029	263,029

Note: The farmland improvement and consolidation work covered a considerably large area in 1972 and 1973 but is already completed. The whole consolidated area will therefire be used for cultivation in the coming years.

(3) Machinery and Equipment

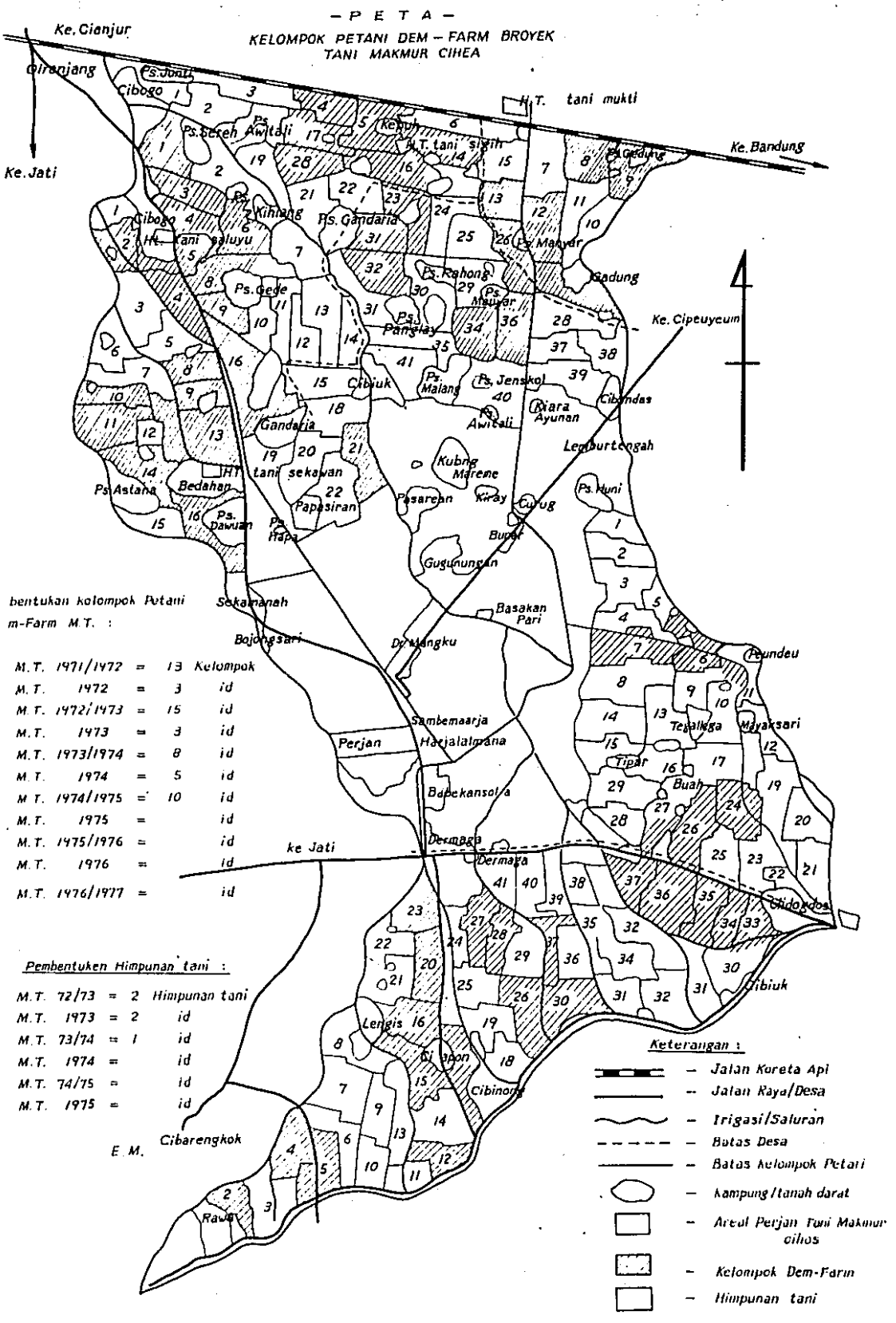
Year / Nomenclature	'68 ∿ '69 C. P		'70 ∿ '71 KRFA		'71 ∿ '72 OTCA		Year / Nomenclature	'68 ∿ '69 C. P		'70 ∿ '71 KRFA		'71 ∿ '73 OTCA	
Truck	Toyota 2000	1	Nissan	3			Magnetic blackboard		1				
	Wagon	1		1			Stop watch		1				2
Motorcycle	90cc	8				4	Straw cutter	Star	1				
Tiller	Kubota	21	Kubota	84	Kubota	1	Tape measure		3				
	KMB 200	2	Iseki	2	Iseki	7	Portable desk		2				1
	Kubota T50	1	T50	9			Balance	1kg	1				
Reaper	Sato H100	3	Sato	1			Tape measure	50m	1				
	Iseki	9					Steel rule		2				
Rice polishing machine	Satake	4	Rice Mill	1			"	50m	1				
Powered huller	Kubota	2	Yanmar	2			Automatic weighing machine	Fuji	2				
Powered thresher	Kubota	7					Weighing machine	5kg	1	1000K	2	5kg	4
		1						500K	1	500K	5		
Sampling thresher	Klyd 181	5						100K	1	500g	21		
Seed cleaner	Kubota	1						100g	1			100g	3
Winnower	Tancho	1					PH meter		1				
Grain dryer	Kubota	1		10			Soil hardness meter		1				
Trailer	Kubota	8	Kubota	20			Tensiometer		5		7		
Rear-car	Kubota						Magnifying glass		10				
Grass mower	Kyoritsu	1					Microscope		1				
Powered sprayer	Kubota	5	Yanmar	8			Mercury thermometer	100°C	5				
Manure spreader	Kubota	10	Nitto	20			Bar thermometer		2				4
Powered duster	Kubota	5					Earth sieve	5 sets	6				
Hand duster	Kubota	40					Sieve		5				
High-speed sprayer	Kubota	1					Beaker	100cc	5				
Hand sprayer		2						500cc	5				
Multiple-hole nozzle		8						1000cc	5				
Nozzle		6					Polyethlene culture apparatus		20				
Line type nozzle		8					Measuring cylinder	1ℓ	14			100	25
Nozzle		16						2ℓ	14			200	55
Single-hole nozzle		8						100cc	2			2000	10
Birds control net (nylon)		5						500cc	2				
Cine-projector	Elmo	1			8m	10	Thermometer		7				
Slide projector		2					Carton		50				78
Camera	Minolta	1					Dissecting microscope		1				
Tape recorder		1				1	Soil tester		1				
Megaphone		4					Pedal rotary thresher		5		50		
Generator	Kubota	2	Yanmar	1		3	Stone grinder		1				
Calculating machine	Tiger	1					Tachometer		4				
"		4				4	Spanner		6				4

Year / Nomenclature	'68 ∿ '69 C. P		'70 ∿ '71 KRFA		'71 ∿ '72 OTCA	
Hammer						
Driver						
Valve lifter						
Wire brush						
Gauge						
Grease pump						
Tool kit						
Pump			Yanmar	5		
Horizontal sprayer				38		
Hand weeder				300		
Combine			Iseki	1		
Moisture meter			SPI	9		15
Battery charger				1		
Battery cleaner				5		
Roll meter					2m	14
Key						20
Petris dish						65
Filter paper						300
Sparrow tape						4
Grain sticker						3
Maximum - Minimum thermometer						14
Tyre gauge						4
Rubber hammer						4
Broadcasting facilities						1

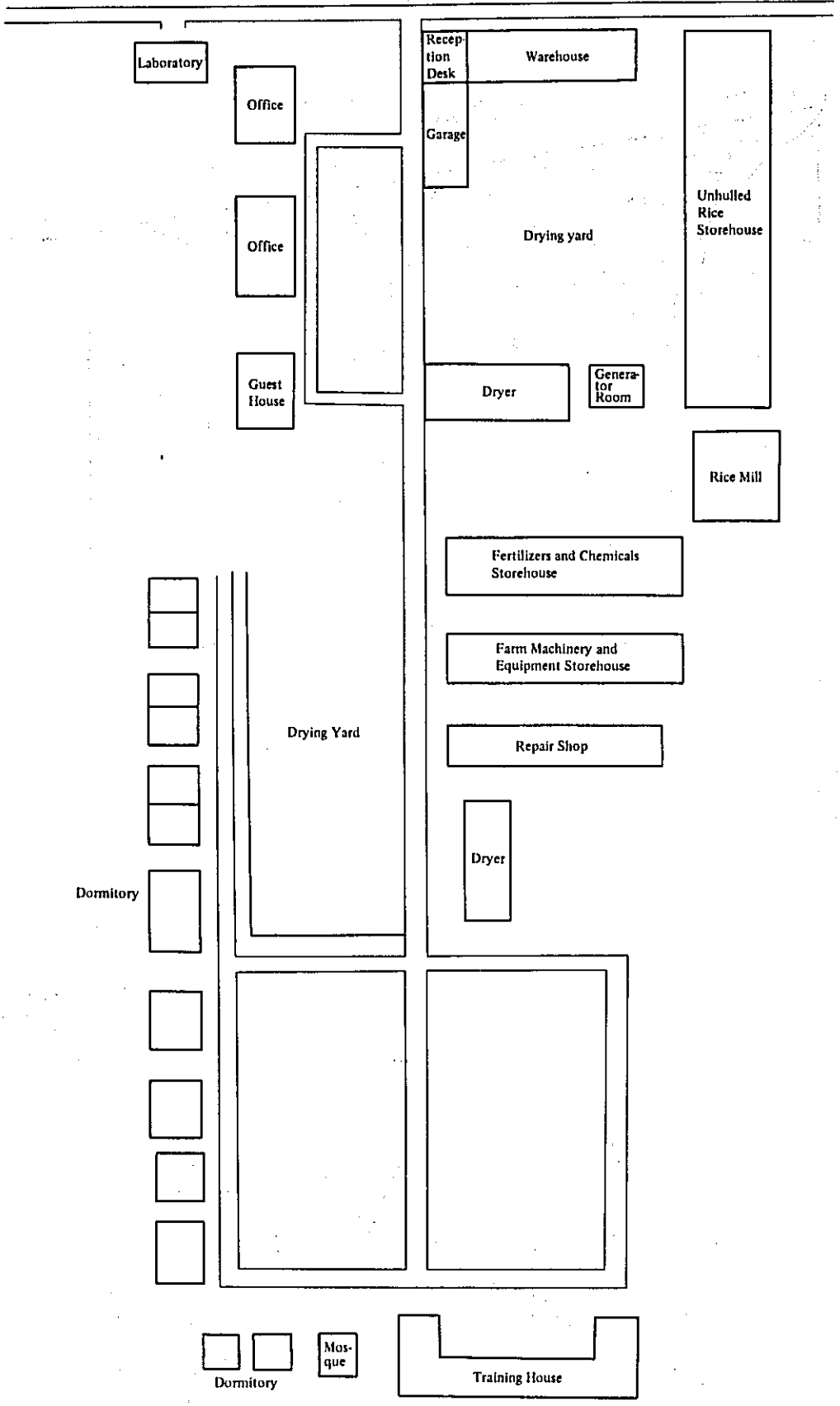
Year / Nomenclature	'68 ∿ '68 C. P		'70 ∿ '71 KRFA		'71 ∿ '73 OTCA	
Broadcasting car						1
Offset press						1
Blackboard						3
Steel cabinet						2
Steel locker						3
Steel book shelf						2
Cut-in engine					Diesel	1
Hand seeder						1
Red Bean thresher						1
Welding rod						1
Nozzle tester						1
Blackboard with date indicator						2
Washing pan						6
Cut-in engine					Gasoline	1
Pincer set						1
Soil colour plate set						1
Record player						2
Transceiver						1
Spray base						281
Typewriter						1

Note: This list gives only main machines and equipment supplied under the cooperation.
For full details, see the separate List of Supplies.

4. Map of Cihea Tani Makmur Center



5. Plain of Office of Provincial Farm (Perjan) at Cihea



II. Seed Production at Cihea Provincial Farm

1. Paddy Production at Provincial Farm

(Source: Final Report)

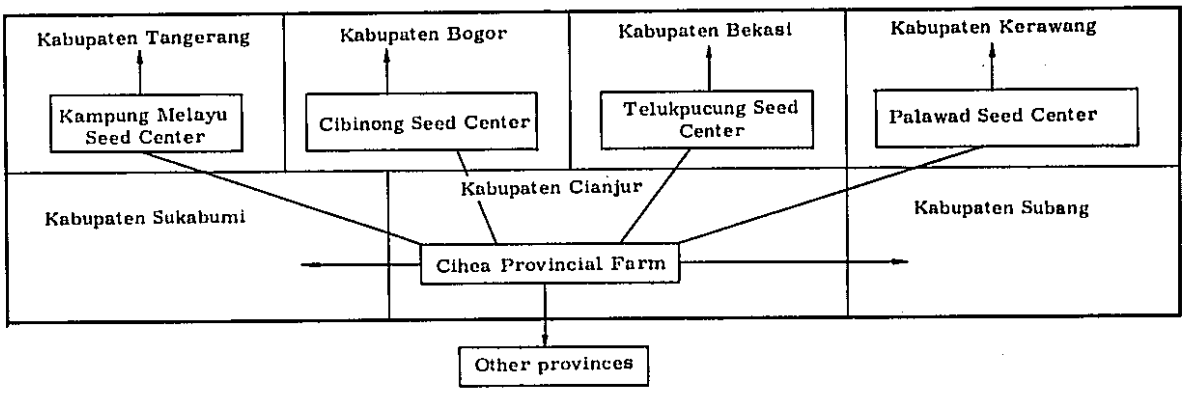
Cropping Season	Transplanting Period	Harvesting Period	Production		Seed Requirement
			Average Yield	Total Production	
1971 Dry Season	'71. 3	'71. 7 ∿ 9	2. 5t	677. 139t	kg
1971 Wet Season	'71. 12 ∿ '72. 2	'72. 4 ∿ 6	4. 1	1, 092. 263	7. 903
1972 Dry Season	'72. 5 ∿ 7	'72. 8 ∿ 10	1. 7	376. 261	140. 000
1972 Wet Season	'72. 12 ∿ '73. 1	'73. 4 ∿ 5	3. 2	727. 000	93. 077
1973 Dry Season	'73. 4 ∿ 6	'73. 9 ∿ 10	2. 6	428. 598	49. 000
1973 Wet Season	'73. 11 ∿ '74. 1	'74. 3 ∿ 5	3. 0	596. 400	46. 248

2. Production and Distribution of Paddy Seeds by Variety

(Source: Final Report)

	PELITA				C4	IR-20	Total	Provincial Farm	
	Distributed within Cihea Area	Supplied to Kalimantan	Supplied to Neighbouring Kabupatens	Sub-total	Distributed within Cihea Area	Distributed within Cihea Area		Seed Farm Area	Total Seed Production
1971 Wet Season	7. 903			7. 903			7. 903	4ha	11. 300
1972 Dry Season	13. 000	127. 000		140. 000			140. 000	105	200. 000
1972 Wet Season	93. 000			93. 000			93. 000	85	133. 000
1973 Dry Season	○	–	○	43. 610	5. 390		49. 000	28	84. 339
1973 Wet Season	○	–	○	38. 555	4. 384	3. 311	46. 248	20	66. 068

3. Assumptive Stock Seed Distribution and Reproduction Condition



Note: The above diagram is an imaginary stock seed reproduction condition assumed from the locations and activities of the seed centers at the extension centers in the neighbouring Kabupatens.

4. Estimated Seed Production

Seed Center	Paddy Field Acreage	Seed Farm Acreage	Ratio of Seed Farm to Paddy Field Area	Average Yield	Estimated Seed Production	Seed Requirement Per Ha	Coverable Paddy Field Area
Cihea	263.0ha	131.5ha	x 50%	3.0t	394.5t	30kg	13.150ha
Kampung Melayu	10.0	8.0	x 80	3.0	24.0	30	800
Cibinong	3.5	2.8	x 80	3.0	8.4	30	280
Telukpucung	13.6	10.9	x 80	3.0	32.7	30	1,090
Palawad	6.6	5.3	x 80	3.0	15.9	30	530
Total	296.7	158.3	–	–	475.5	–	15.850

Notes: 1. The above table shows the seed production as estimated from the acreage of seed farms at respective seed centers including Cihea, as well as the paddy field area that can be covered with seed supply from such centers.

2. According to this estimate, seed production in one cropping season suffices to cover 16,000 ha within West Java province.

III. Progress of Improvement Work of Cihea Provincial Farm

Kind of Work \ Year		1971 Work Volume	1971 Fund Requirement	1972 Work Volume	1972 Fund Requirement	1973 Work Volume	1973 Fund Requirement	Total Work Volume	Total Fund Requirement	Completed Work Volume / Planned Work Volume
Road	Plot B			942	1,473,982	942	619,745	942	2,093,727	95.93%
	" C									
	" D			687	942,628	687	466,335	687	1,308,963	109.39%
	Sub-total			1,629	2,416,610	1,629	1,086,080	1,629	3,402,690	
Farm Road	Plot A					3,446	237,347	3,446	237,347	
	" B			4,597	308,312			4,597	308,312	128.82%
	" C					2,206	152,752	2,206	152,752	
	" D			1,855	126,140			1,855	126,140	
	Sub-total			6,452	434,452	5,652	390,099	12,104	824,551	
Irrigation Works	Plot A					4,534	126,952	4,534	126,952	
	" B			3,334	186,704			3,334	186,704	77.10%
	" C					3,284	91,952	3,284	91,952	
	" D			2,297	46,200			2,297	46,200	71.83%
	Sub-total			5,631	232,904	7,821	218,904	13,452	451,808	
Drainage Canal	Plot A					3,718	349,492	3,718	349,492	
	" B			3,232	300,576			3,232	300,576	75.87%
	" C					1,842	291,200	1,842	291,200	
	" D			2,392	171,771			2,392	171,771	77.22%
	Sub-total			5,624	472,347	5,560	640,692	11,184	1,113,039	
Culvert	Plot A					25	577,307	25	577,307	
	" B			32	336,054			32	336,054	84.21%
	" C					17	391,690	17	391,690	94.44%
	" D			10	154,128			10	154,128	111.11%
	Sub-total			42	490,182	42	968,997	84	1,459,179	
Intake Weir	Plot A					20	124,600	20	124,600	
	" B			17	78,736			17	78,736	106.25%
	" C					10	56,070	10	56,070	111.11%
	" D			9	44,289			9	44,289	
	Sub-total			26	123,025	30	180,670	56	303,695	
Diversion Works	Plot A					8	4,000	8	4,000	
	" B			13	9,334			13	9,334	
	" C					10	5,000	10	5,000	
	" D			3	2,154			3	2,154	333.33%
	Sub-total			16	11,488	18	9,000	34	20,488	
Land Levelling	Plot A					14,177	1,843,000	14,177	1,843,000	
	" B					12,039	2,136,487	12,039	2,136,487	
	" C					8,348	1,481,760	8,348	1,481,760	
	" D					6,868	1,017,413	6,868	1,017,413	77.26%
	Sub-total					41,427	6,478,660	41,427	6,478,660	
Others	Plot A						1,031,802		1,031,802	
	" B				1,189,746				1,189,746	
	" C						699,146		699,146	
	" D				1,189,746				1,189,746	
	Sub-total				2,379,492		1,730,948		4,110,440	
Bridge Construction		2	300,000	2	110,721			2	410,721	
Drainage Work						3.6	2,386,390	3.6	2,386,390	
Data Collection Cost			6,350,000						6,350,000	
Other Expenses			150,000		1,428,776		909,530		2,488,309	
Total	Plot A						4,294,500		4,294,500	
	" B				3,883,444		2,756,232		6,639,676	
	" C						3,169,570		3,169,570	
	" D				2,677,056		1,483,748		4,160,804	
	All Plots		6,800,000		1,539,492		3,295,920		11,635,417	
	Total Fund Disbursement		6,800,000		8,099,997		14,999,970		29,899,967	

Notes: 1. The consolidation work of the Provincial Farm was virtually completed in 1973 as originally planned.

2. Units employed are Rp for the fund requirement, m for roads, farm roads and canals, ha for culverts and levelling work, and place for intake weirs and diversion works.

IV. Changes in Paddy Cultivation Practices in Cihea Area

Item \ Year				1971	1972		1973	
				Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
Target Yield				7,000 kg	7,000 kg	7,000 kg	7,000 kg	7,000 kg
Variety				PB 5	PB 5	Perital/1	Perital/	60 gr
Nursery Bed	Seeding Rate (gr/m^2)			60 gr	60 gr	60 gr	60 gr	60 gr
	Seed Quantity (kg/ha)			25 kg	25 kg	30 kg	30 kg	30 kg
	Area (m^2/ha)			500 m^2	500 m^2	500 m^2	500 m^2	500 m^2
	Fertilization	Urea (gr/m^2)		20 gr	10 gr	10 gr	10 gr	10 gr
		Triple Superphosphate(gr/m^2)		20 gr	10 gr	10 gr	10 gr	10 gr
	Number of Nursery Days			20	20	20	20	20
	Seedling Age (leaf)			5 ∿ 6	5 ∿ 6	5 ∿ 6	5 ∿ 6	5 ∿ 6
	Plant Height (cm)			20 ∿ 25 cm	20 ∿ 25 cm	20 ∿ 25 cm	20 ∿ 25 cm	20 ∿ 25 cm
Paddy Field	Planting Density (cm)			25 x 25 cm	25 x 25 cm	30 x 15 cm	30 x 15 cm	30 x 15 cm
	Number of Planted Seedlings per Hill			3	3	3	3	3
	Planting Depth (cm)			3 cm	3 cm	3 cm	3 cm	3 cm
	Fertilization	Basal Dressing	Urea	40 kg	40 kg	40 kg	40 kg	40 kg
			Triple Superphosphate	100 kg	100 kg	100 kg	100 kg	100 kg
		Additional Dressing (Urea)	1st	70 kg	40 kg	40 kg	40 kg	40 kg
			2nd	70 kg	80 kg	80 kg	80 kg	80 kg
			3rd	20 kg	20 kg	20 kg	20 kg	20 kg
		Total Dosage	Urea	200 kg	200 kg	200 kg	200 kg	200 kg
			Triple Superphosphate	100 kg	100 kg	100 kg	100 kg	100 kg
	Mid-seasons Drainage	After Transplanting		110 days	110 days	110 days	110 days	110 days
		Before Heading		40∿50 days	40∿50 days	40∿50 days	40∿50 days	40∿50 days

Notes: 1. The cultivation standards shown above were prepared on the basis of the trials conducted on the model farm.

2. Some notable changes were effected to the original standards from the 1972 wet season cropping.

V. Test Items Covered by Trial Paddy Cultivation at Cihea Model Farm

Item	1972 Wet Season	1972 Dry Season	1972 Wet Season	1973 Dry Season	1973 Wet Season
Basic Test	Leaf-emergence Interval Test	Leaf-emergence Interval Test			
Variety		Confirmation of cultivation effect of ideal Pelita 1/1 variety	Characteristics test of long-culm varieties		
Fertilization	Influence of partial nitrogen fertilizer dressing at different dosages upon varieties	Effect of heavy partial dressing of nitrogen fertilizer in the latter stage of growth period	Comparative test of different fertilizers		Dosage test of nitrogen fertilizer (test of the relationship between dosage and planting distance, and partial dressing test) and fertilizer mixing test
Cultivation	Relationship between planting pattern and yield components	Combination test of different cultivation techniques	Relationship between planting density and nursery period in trial high-yield culture farm		Trial high-yielding cultivation of paddy

Note: The above table was prepared from the various reports on Tani Makmur project but does not cover all the trials and experiments conducted in the past.

PART II. TRAINING OF AGRICULTURAL STAFFS AND FARMERS

I. Achievements in Machine Operator Training at Cihea Center

II. Training of Farmers from Demonstration Farms within Cihea Area

III. Comprehensive Table of Training Activities Conducted under West Java Food Production Increase Project

IV. Training Record of Extension Workers

V. Demographic Data of Agricultural Staff in Survey Area

1. Number of Agricultural Staff Members
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   - (1) Kabupaten Cianjur
   - (2) Kabupaten Bekasi
   - (3) Total
3. Educational Level
   - (1) Kabupaten Cianjur
   - (2) Kabupaten Bekasi
   - (3) Total
4. Number of Years in Extension Service
   - (1) Kabupaten Cianjur
   - (2) Kabupaten Bekasi
   - (3) Total

VI. Tabulation from Trainees' Self-Completed Questionnaires

1. Research of Trainees' Assessment of Training Programmes
2. Respondents' Demography
   - (1) Occupation
   - (2) Age, Educational Level and Number of Years of Experience

SUMMARY

(1) Achievements in Training Services Offered as Part of Tani Makmur Project

- o One of the noteworthy characteristics of Tani Makmur project is that it has been so implemented, from the very outset, as will provide uninterrupted expert assistance in the training of leaders and farmers. The assistance was offered in two phases, and there is a clear distinction between the achievements of the first phase cooperation and those of the second phase cooperation.
- o The first phase training cooperation was offered to a small number of trainees over a long period of time, whereas the second phase cooperation was given for a short time to a large number of trainees who exhibited apparently higher capabilities than the first phase trainees. The training subjects were also changed. See inspection, paddy cultivation techniques and agricultural machinery were the first phase training subjects, but the second phase training was given in paddy cultivation techniques, agricultural machinery and extension techniques.
- o With the diminishing training activities at Muara and Pasarminggu, Cihea has gradually become the center of training services. In the coming years, however, there will be not much need to train farmers in paddy cultivation techniques and farming machinery operation, and the limited availability of machinery and equipment will make it inevitable to cut down the number of farmers' leaders to be trained in agricultural machinery. Hence, emphasis will be placed on the training of extension workers.

(2) Training of Extension Workers

- o The great majority of the extension workers were employed after 1971. Although they are young and inexperienced in the extension services, all are the graduates of agricultural high schol or higher educational institutions so that they can be readily trained to acquire the extension techniques.

- o Rational and systematic training of extension workers is therefore called for. Specifically, it is necessary to distinguish between respective training subjects, establish the training method by course, and train instructors.
- o Short-term but intensive training of the extension workers has been frequently conducted since 1971. The cumulative total of the trainees almost equals the total number of the extension workers now in service.
- o Training has been offered in such courses as agricultural machinery, paddy cultivation techniques (cultivation standards for demonstration farms), extension techniques, organization of farmers, etc. While the chiefs of extension centers take interest in such courses as extension techniques and agricultural management, general extension workers wish to be trained in paddy cultivation techniques and agricultural machinery. Accordingly, the contents of training must be varied to meet the trainees' desire.
- o Although the cumulative total of trainees almost equals the total number of extension workers, it is estimated that about a half of the extension workers have actually received training because there are many extension workers who have recently been employed. This means that quite a few extension workers have taken training repeatedly. In particular, chiefs of extension centers have been given concentric and repetitive training. Accordingly, care must be taken in increasing the number of trainees in future.
- o As for the trainees' evaluation of the training courses as disclosed from the questionnaires filled by them, ordinary extension workers gave high evaluation to the courses in farming techniques, agricultural management and agricultural machinery, but the chiefs of extension centers commented favourably on the training courses in extension techniques and agricultural management, many of them stating that the training they had taken imparted the first-hand knowledge required in the discharge of their duties. Thus, it appears that emphasis has been placed more or less on the training of chiefs of extension centers in the past.

- o Training courses of about two weeks including substantial in-service practical training are desired by most trainees.
- o Trainees who have completed their courses keep on studying the subjects they have taken in some way or other. In order to provide a climate incentive to their continued, it is necessary to furnish them with research data and materials and make it possible for them to find at any time the leaders and advisers who can give the guidance and knowledge they seek.

(3) Training of Farmers in Cihea Area

- o In Cihea area, training of 170 farmers in farming machine operation was completed, but training of additional machine operators is suspended. By the completion of this training, each 5 ha of paddy field is now covered by one operator and each demonstration farm by four operators.
- o Training of key farmers has been fostered over the past years in both substance and training period, and a total of 476 farmers have completed training in the last three years. This means that one farmer per each five farm households in Cihea area or ten farmers per demonstration farm have received training.
- o Training of farmers in Cihea can therefore be considered completed. What remains to be done is to clarify and consolidate the method and substance of training on the basis of the experience gained in the last three years for preparation of a guidance manual to be used for training at the extension centers in the neighbourhood of Cihea.

I. Achievements in Machine Operator Training at Cihea Center

Trainee \ Year		1968	1969	1970	1971	1972	1973	1974	Total
Staffs of Cihea Center	Frequency	1	1	1					3
	Training period	30	14	7					51
	Number of trainees	20	20	20					60
Farmers from Demonstration Farms	Frequency				1	2	3		6
	Training period				11	11	19		41
	Number of trainees				32	70	67		169
Staffs of Extension Centers	Frequency				1	1	2	2	6
	Training period				13	9	14	11	47
	Number of trainees				18	25	65	34	142
Instructors and Staffs of Agricultural High Schools	Frequency						1	3	4
	Training period						4	11	15
	Number of trainees						52	218	270
Total	Frequency	1	1	1	2	3	6	5	19
	Training period	30	14	7	24	20	37	22	154
	Number of trainees	20	20	20	50	95	184	252	641

Notes: 1. In the first three years, the training course in the farming machine operation was offered to the staffs of Cihea Center who became instructors in the training conducted in the subsequent years.

2. At present, Cihea Center is capable of providing a 6 to 7 day training course in farming machine operation 5 or 6 times a year.

3. 169 farmers from the demonstration farms within Cihea area have already been trained. If they are distributed to the 47 demonstration farms and 49 organized Kelompoks in the area, each farm would have 3.6 machine operators and each Kelompok 3.4 operators, which means that the operator requirement for using the existing machines (specially tillers) is virtually filled.

4. The cumulative total of the trained extension workers is 142 which accounts for about 40% of the estimated total of extension workers stationed at the extension centers in the seven neighbouring Kabupatens. However, since the questionnaires filled by the trainees indicate that each of them received training 1.2 times on the average, the actual number of trained extension workers is estimated at 100 ∿ 110. Training of extension workers in the farming machine operation should therefore be continued.

II. Training of Farmers from Demonstration Farms within Cihea Center

Trainee \ Year		1968	1969	1970	1971	1972	1973	1974	Total
Kelompok	Frequency				2	2	4	6	14
Head of Kelompok	Training period				12	10	28	56	106
Member	Number of trainees				61	64	121	230	476

Notes: 1. This training was conducted because extension services within its area are one of the functions of Cihea Center.

2. It can be said that the training has been conducted quite intensively because the total number of trained farmers, 476, accounts for 64.4% of all farmers from the demonstration farms and each farm has an average of 10.1 trained farmers.

3. As from 1974, the training period was extended from 5 ∿ 6 days to 9 ∿ 10 days, which is indicative of the fact that the Extension Division carries the heaviest weight in the activities of the Center after termination of the cooperation agreement.

III. Comprehensive Table of Training Activities Conducted under West Java Food Production Increase Project

Trainee		Year	1968	1969	1970	1971	1972	1973	1974	Total
Seed Inspection	Muara	Frequency		4	1					5
		Training period		48	30					78
		Number of trainees		98	24					122
	Cihea	Frequency		1	1					2
		Training period		5	3					8
		Number of trainees		28	26					54
Training Course and Extension Center	Muara	Frequency			3	1		1		5
		Training period			135	10		5		150
		Number of trainees			82	29		31		142
	Cihea	Frequency				2	2	4	6	14
		Training period				12	10	28	56	106
		Number of trainees				61	64	121	230	476
Agricultural Machinery	Pasarminggu	Frequency		1	1					2
		Training period		225	150					375
		Number of trainees		20	24					44
	Cihea	Frequency	1	4	2	3	4	7	5	26
		Training period	30	52	19	36	30	44	22	233
		Number of trainees	20	105	50	65	119	213	252	824
Extension Techniques	Cihea	Frequency					1	1	1	3
		Training period					4	3	4	11
		Number of trainees					28	14	42	84
	Other Extension Centers	Frequency					1	1	1	3
		Training period					5	5	5	15
		Number of trainees					65	31	70	166
Total		Frequency	1	10	8	6	8	14	13	60
		Training period	30	330	337	58	49	85	87	976
		Number of trainees	20	251	206	155	276	410	594	1912

Source: Past project reports and the present survey.

Notes: 1. The training programme played an important role of providing the leaders' services which were indispensable for implementing the project. A total of 60 different courses were offered for the project, which means that training was conducted 8 to 9 times (8.6 times to be exact) a year or every 1.3 to 1.5 months.

2. The seed inspection course with which the training started gradually gave way to such other courses as agricultural machinery, paddy cultivation techniques and extension techniques with the progress of the project.

3. Cihea Center offered about 75% of all courses, contributing largely to the smooth implementation of the project.

4. For details of this training programme, see the diagrams on page 46.

IV. Training Record of Extension Workers

Sequence No.	Period	Course/Meeting	Objective	Participants	Number of Participants	Sponsor	Place of Training
1	'71. 8. 23∿9. 4	Agricultural machinery	Improvement of technical knowleges and operation skill of farming machines, specially tractors.	Staffs of extension Division	15	Center's Extension Division	Cihea
2	'71. 9. 6∿15	Demonstration farm management	Improvement of paddy cultivation techniques and knowledges of agricultural management	- do -	29	- do -	Muara
3	'72. 3. 27∿31	Study meeting on agricultural extension techniques	Preparation of an agricultural extension project	Local extension officers attached to the Center's *Extension Division* and Provincial Agricultural Extension Department, and Kabupaten extension officers	65	- do -	Kayuambon Lemban
4	1972 (10 days)	Agricultural machinery	Improvement of technical knowledges about farming machines and equipment	Chief of Extension Center	24	Agricultural Extension Dep. of Provincial Government	Cihea
5	1972 (5 days)	Demonstration farm management	Improvement of knowledge about farm management at extension centers	Instructors at agricultural junior high school, extension workers, *and chiefs of* extension centers	40	- do -	Sabandar
6	1972 (4 days)	Extension center *management*	Improvement and develop*ment of knowledges* about the management of extension centers and assessment of their activities	- do -	28	- do -	Cihea
7	1973 (7 days)	Agricultural machinery	Improvement of technical knowledges about farming machines and equipment	Staffs of extension centers	29	- do -	- do -
8	June 5∿7, 73 (3 days)	Experimental and observation farms	Improvement of knowledges and techniques required for trial cultivation and observation	Chiefs and staffs of extension centers	14	Provincial Agricultural Extension Department	Cihea
9	July 9∿13, 74	Demonstration farm management	Improvement of agricultural management and development of farmers' organizations	- do -	31	- do -	Pacet
10	Mar 4∿7, 74 (4 days)	*Study meeting for* organizing farmers	*Improvement of knowl*edges about farmers' organizations	*Chiefs of* extension centers	42	- do -	Cihea
11	Mar 25∿29, 74 (5 days)	Study meeting for development of extension centers	Promotion of activities of extension centers and improvement of knowledges required for organizing farmers	Extension workers, Kecamatan extension officers, and staffs of extension centers	70	- do -	Kayuambon
Total		8 courses and 3 study meetings			387		6 places

Source: Final Report

Notes: 1. Training intended specifically to improve the quality of extension workers started in 1971 when the extension services began to be offered on a full scale in the surrounding seven Kabupatens.

2. Subjects of training courses and study meetings were demonstation farm management (paddy cultivation techniques -(4)), agricultural machinery (3), extension techniques (3) and farmers' organization (1).

3. Average training period was 6.3 days, which is almost the same as the period spent for other training courses.

4. The cumulative total of the participants, 387, is considered almost equivalent to the total number of extension officers and workers in the province.

V. Demographic Data of Agricultural Staff in Survey Area

1. Number of Agricultural Staff Members

Classification / Kabupaten	Kabupaten Staff				Technical Expert				Total
	Planning Staff	Technical Staff	Kecamatan Staff	Sub-total	Extension Worker	Assistant Extension Worker	Sub-Assistant Extension Worker	Sub-total	
Cianjur				70	1	27	27	55	125
Bekasi	18	(12)	16	34 (46)	1	31	13	45	91
Total				116	2	58	40	100	216

Notes: 1. Extension workers account for as high as 45 to 50% of all agricultural staff members in the two Kabupatens.

2. However, the number of extension workers is less important than their quality and the extension system.

3. By assistant extension workers is meant those who are in the period of apprenticeship and not officially nominated.

2. Age

(1) Kabupaten Cianjur

Classification / Age		Less than 20	20∿22	23∿24	25∿29	30∿34	35∿39	40∿44	45∿49	50∿54	Unknown	Total	Highest	Lowest	Average
Kabupaten Staff				4	9	7	19	8	10	11	2	70	53	23	38.07
Extension Staff	Technical Expert					1						1	33	33	33.00
	Extension Worker		6	14	6	1						27	34	20	23.85
	Assistant Extension Worker		9	3	1						14	27	25	20	21.92
	Sub-total		15	17	7	2					14	55	34	20	23.46
Total			15	21	16	9	19	8	10	11	16	125	53	20	33.27

(2) Kabupaten Bekasi

Classification \ Age		Less than 20	20∿22	23∿24	25∿29	30∿34	35∿39	40∿44	45∿49	50∿54	Un-known	Total	Highest	Lowest	Average
Kabupaten Staff				1	3	8	12	3	6	1		34	49	24	37.24
Extension Staff	Technical Expert					1						1	32	32	32.00
	Extension Worker		4	9	18							31	28	21	24.58
	Assistant Extension Worker	1	5	6	1							13	29	19	23.00
	Sub-total	1	9	15	19	1						45	32	19	24.28
Total		1	9	16	22	9	12	3	6	1		79	49	19	29.49

(3) Total

Classification \ Age		Less than 20	20∿22	23∿24	25∿29	30∿34	35∿39	40∿44	45∿49	50∿54	Un-known	Total	Highest	Lowest	Average
Kabupaten Staff				5	12	15	31	11	16	12	2	104	53	23	37.80
Extension Staff	Technical Expert					2						2	33	32	32.50
	Extension Worker		10	23	24	1						58	34	20	24.24
	Assistant Extension Worker	1	14	9	2						14	40	29	19	22.46
	Sub-total	1	24	32	26	3					14	100	34	19	24.18
Total		1	24	37	38	18	31	11	16	12	16	204	53	19	31.67

Notes: 1. 80% of extension workers are younger than 30 years, while 82% of other staff are older than that.

2. The above tendency is observed in both Kabupatens.

3. Apprehension was felt about the possible transfer of extension workers to other posts with the increase of their age.

3. Education Level

(1) Kabupaten Cianjur

Classification \ School of Graduation		S. R.	S. P. M. P.	S. G. P.	S.P.M. or S. P. M. P.	S. P. P.	S. P. M. A.	Junior College	College	Unknown	Total
Kabupaten Staff		11	27	7	3	3	13	5		1	70
Extension Staff	Technical Expert								1		1
	Extension Worker						27				27
	Assistant Extension Worker						27				27
	Sub-total						54		1		55
Total		11	27	7	3	3	67	5	1	1	125

(2) Kabupaten Bekasi

Classification \ School of Graduation		S. R.	S. P. M. P.	S. G. P.	S.P.M. or S. P. M. P.	S. P. P.	S. P. M. A.	Junior College	College	Unknown	Total
Kabupaten Staff			4		15	1	9	4	1		34
Extension Staff	Technical Expert								1		1
	Extension Worker						30	1			31
	Assistant Extension Worker						13				13
	Sub-total						43	1	1		45
Total			4		15	1	52	5	2		79

(3) Total

Classification \ School of Graduation		S. R.	S. P. M. P.	S. G. P.	S.P.M. or S. P. M. P.	S. P. P.	S. P. M. A.	Junior College	College	Unknown	Total
Kabupaten Staff		11	31	7	18	4	22	9	1	1	104
Extension Staff	Technical Expert								2		2
	Extension Worker						57	1			58
	Assistant Extension Worker						40				40
	Sub-total						97	1	2		100
Total		11	31	7	18	4	119	10	3	1	204

Notes: 1. It appears that extension workers are required to have graduates from agricultural high school (S. P. M. A.) and technical experts from college.

2. The technical experts are not sub-classified by specialized field so that they may be regarded as extension workers with college education.

3. The differences in the educational level of the general Kabupaten staff are assignable to the changes in the educational system. Hence, their education level cannot directly be compared with that of extension workers.

4. Abbreviations in capital letters -

S. R. : Sekolah Rakjat (primary school).

S. P. M. P. : Sekolah Pertanian Menegh Pertana (higher agricultural primary school), 1-year course for Sekolah Rakjat graduates. (1950 - 1960).

S. G. P. : Sekolah Guru Pertanian (agricultural teacher's school), 1-year course for S. P. M. P. graduates who have engaged in agricultural pursuits for five years (1952 - 1959).

S. P. M. : Sekolah Pertanian Menegh (agricultural junior high school), 3-year course for S. R. graduates. (1943 - 1952).

S. P. M. P. : Agricultural junior high school, 3-year course for S. R. graduates (after 1959).

S. P. P. : Sekolah Pemgamat Pertanian (agricultural supplementary school or practical course of agricultural high school), 3-year course for S. M. P. (ordinary junior high school) graduates.

S. P. M. A. : Sekolah Pertanian Menegh Atas (agricultural high school), 3-year course for S. P. M. or S. M. P. graduates.

Junior College : 3-year course for S. P. M. A. or S. M. A. (ordinary high school) graduates.

College University : 5-year course for S. P. M. A. or S. M. A. graduates.

4. Number of Years in Extension Service

(1) Kabupaten Cinajur

Classification \ School of Graduation		Less than 0.5 years	0.5∿1	1∿2	2∿3	3∿5	5∿10	10∿15	15∿20	More than 20 years	Unknown	Total	Longest	Shortest	Average
Kabupaten Staff					1	5	16	22	20	6		70	Y. M. 24. 11	Y. M. 2. 1	Y. 13. 03
Extension Staff	Technical Expert				1							1	2. 11	2. 11	2. 92
	Extension Worker		1	4	11	11						27	4. 2	10	2. 70
	Assistant Extension Worker	7	20									27	11	3	0. 87
	Sub-total	7	21	4	12	11						55	4. 2	3	1. 74
Total		7	21	4	13	16	16	22	20	6		125	24. 11	3	8. 06

(2) Kabupaten Bekasi

Classification \ School of Graduation		Less than 0.5 years	0.5∿1	1∿2	2∿3	3∿5	5∿10	10∿15	15∿20	More than 20 years	Unknown	Total	Longest Y. M.	Shortest Y. M	Average Y.
Kabupaten Staff				1	1	2		6	14	10		34	28.7	1.3	16.71
Extension Staff	Technical Expert				1							1	2.4	2.4	2.33
	Extension Worker			3	6	22						31	4.4	1.6	3.39
	Assistant Extension Worker	13										13	5	5	0.42
	Sub-total	13		3	7	22						45	4.4	5	2.63
Total		13		4	8	24		6	14	10		79	28.7	5	8.69

(3) Total

Classification \ School of Graduation		Less than 0.5 years	0.5∿1	1∿2	2∿3	3∿5	5∿10	10∿15	15∿20	More than 20 years	Unknown	Total	Longest Y. M.	Shortest Y. M.	Average Y.
Kabupaten Staff				1	2	7	16	28	34	16		104	28.7	1.3	14.23
Extension Staff	Technical Expert				2							2	2.11	2.4	2.63
	Extension Worker		1	7	17	33						58	4.4	10	3.07
	Assistant Extension Worker	20	20									40	11	3	0.63
	Sub-total	20	21	7	19	33						100	4.4	3	2.08
Total		20	21	8	21	40	16	28	34	16		204	28.7	3	8.28

Notes: 1. There is a wide gap in the number of years of experience between the general staff and the extension workers. While 90% of the former have five or more years of experience, none of the latter have been in service for five years. In addition, nearly 70% of the latter have less than three years of experience.

2. This fact indicates that the full-scale extension services were initiated from about 1970 and most of the extension workers were appointed in 1971.

3. The above tendency is observed in both Kabupatens.

VI. Tabulation from Trainees' Self-completed Questionnaires

1. Research of Trainees' Assessment of Training Programmes

(1) Objective

The research was conducted to evaluate the training activities on the basis of the trainees' opinions and comments on two training programmes, i. e., "Education and Training Programme" which constituted part of West Java Food Production Increase Project and the training programme which was carried out under the "Cihea Area Development Project."

(2) Respondent

Agricultural administrative officers	_____	persons
Extension staffs (technical experts, chiefs of extension centers, and ordinary extension workers)	_____	persons
Farm management leaders in towns and villages	_____	persons
Key farmers	_____	persons

(3) Questions Asked

1) What is your present occupation?
Check it with a circle if you find it among the occupations listed here.
2) Which training course(s) did you take?
Check it (them) with a circle if you find it (them) among the courses listed here by year.
3) What was your occupation when you took the training?
Check it with a circle if you find it among the occupations listed here.
4) Of all the instructions and guidances given during the training what do you find most useful at present?

5) Which training course did you find most impressionistic?

6) What is "good training" in your opinion?
Fill the following columns with answers which you think most suitable.

Period ( ) Place ( )

Method (Lectures first. In-service practical training first. Lectures and in-service training arranged equally)

Contents of training ( )

7) After you completed the training course, how have you kept on studying the subject you took?
Check one or more of the following answers which suit your case.

- o Visited the Training Center a number of times to seek information.
- o Tried to find time to read relevant books and data.
- o Asked the leaders in the service area for information and guidance.
- o Confirmed what was taught by putting it in practice.
- o Did nothing.

8) What are the contents of the training course(s) you would like to take in future?

2. Respondents' Demography

(1) Occupation

Kabupaten \ Occupation		Desa Leader P. T. D.	Extension Worker P. P. L.	Chief of Extension Center P. P. M.	Others				Unknown	Total
					Kabupaten Staff	Kecamatan Leader	Instructor at Agricultural High School	Sub-total		
Cianjur	Cihea	4	2							6
	Gununghalu		1	1						2
	Cibeber		1	2	2		1	3		6
Subang			2	2	1	1		2		6
Kerawang			2			1		1	4	7
Bekasi			4	1	1			1		6
Bogor			3	2						5
Sukabumi			4	1	1			1		6
Total		4	19	9	5	2	1	8	4	44

Notes: 1. In order that the respondents would comprise extension workers and trainees with various other occupations, recruiting of respondents was left to the Indonesian side.

2. As a result, extension workers accounted for 63% of all respondents who returned the questionnaire, other Kabupaten staffs 18%, and Desa leaders 9%.

3. Questionnaires were recovered from all Kabupatens and not from the two surveyed Kabupatens alone (i. e., Cianjur and Bekasi).

4. Since the research was intended to clarify the trainees' evaluation of the training programmes, the respondents were recruited from among those who had received training a number of times.

5. Of the 50 questionnaires distributed, 44 were recovered. Hence, the completion rate was 88%.

(2) Age, Educational Level and Number of Years of Experience

Kabupaten \ Occupation		Desa Leader P. T. D.	Extension Worker P. P. L.	Chief of Extension Center P. P. M.	Others				Unknown	Total
					Kabupaten Staff	Kecamatan Leader	Instructor at Agricultural High School	Sub-total		
Age	Younger than 25 years	1	6	1					2	10
	25 ∿ 29		13	5	2	2	1	5	1	24
	30 ∿ 34	1		1						2
	35 ∿ 39	1		2	2			2	1	6
	40 ∿ 44	1			1			1		2
	Total	4	19	9	5	2	1	8	4	44
	Other Occupations	42. 23	29. 23	39. 24				41. 28	22. 36	42. 22
	Average	34. 00	24. 11	29. 00				31. 63	27. 50	28. 23
Educational Level	S. R.	3								3
	S. M. P.	1								1
	S. P. M.		1		1	1		2		3
	S. P. M. A.		16	5	1	1	1	3	3	27
	Junior College		2	3	2			2		7
	University or College								1	1
	Others			1	1			1		2
	Total	4	19	9	5	2	1	8	4	44
Experience	Less than 2 years		1							1
	2 ∿ 3		3	3						6
	3 ∿ 4	2	3	1	1			1	1	9
	4 ∿ 5		11	2	2	1		3		19
	5 ∿ 7		1						1	2
	7 ∿ 10						1	1		2
	10 ∿ 15			1		1		1		3
	15 ∿ 20	2		1	1			1		5
	More than 20 years			1	1			1		3
Average		7. 25	3. 68	7. 78				9. 75	6. 50	6. 20

Notes: 1. 77% of the respondents were less than 30 years of age, which was natural because extension workers constituted a majority of them. Nevertheless, other general staffs were also relatively young, so that most trainees were in the younger age bracket.

2. Desa leaders, however, were relatively old. It appears that there are few young people who are assigned to this task.

3. The number of years of experience was also proportionate to the average obtained in Kabupatens Cianjur and Bekasi.

4. For further details, see the diagrams on page 46.

3. Lectures and Training

(1) Tabulation of Training Frequency by Course

Course / Occupation of Training	Production Techniques				Agricultural Management	Farm Women Training	Seed Inspection	Demonstration Farm		Extension Activities				Total	Average Frequency
	Farming Techniques	Paddy Cultivation Techniques	Agricultural Machinery	S. P. M. A. Training				Management	Observation and Trials	P. P. L. Training	P3 Management	Farmers' Organization	Extension Techniques		
Desa Leader	2		2	1	1			2						8	2.00
Extension Worker		1	20		7	1		5	3	6	4	1		48	2.53
Chief of Extension Center		1	13		9			6	2		7		1	39	4.33
Others			6		5		1	5						17	2.13
Unknown	1		3		3				2	2				11	2.75
Total	3	2	44	1	25	1	1	18	7	8	11	1	1	123	2.80

Notes: 1. The above table shows the cumulative total of respective training courses which were entered in the recovered questionnaires.

2. Since 44 respondents took a total of 123 training courses, the average training frequency per respondent turns out to be 2.8 times. Further, each respondents was trained every 2.5 years during the five-year period covered by the research (1968 - 1974). Considering, however, that full-scale training was started in 1971, it can be concluded that each respondent was trained 2.8 times in four years or twice in three years.

3. Training frequency of chiefs of extension centers is particularly high, averaging 4.3 times per person. This means that they received training every 11 months.

4. The training frequency of chiefs of extension centers was specially high, averaging 4.3 times or every 11 months, whereas that of extension workers was 2.5 times in 4 years or every 17 months.

5. Training in actual farming techniques such as cultivation techniques, agricultural management, farm women training, and seed inspection was given 77 times, accounting for 62.6% of all courses. On the other hand, training in extension services such as demonstration farm management and extension techniques was given 46 times and accounted for 37.4% of all courses.

(2) Training Frequency by Trainee

Trainee \ Frequency	Once	Twice	3 Times	4 Times	5 Times	6 Times	7 Times	Total
Desa Leader		4						4
Extension Worker	5	7	5			1	1	19
Chief of Extension Center	1	1		3	1	1	2	9
Others	3	2	2	1				8
Unknown	1		2	1				4
Total	10	14	9	5	1	2	3	44

Notes: 1. The training frequency per trainee ranges from a minimum of once to a maximum of 7 times.

2. The general trend is that while most of the chiefs of extension centers received training more than 4 times per person, the great majority of others were trained less than 3 times.

(3) Training Courses Entered in Questionnaires

Course	Before 1971		1971		1972		1973		1974		Unknown
Production Techniques			Feb.15∿30	Cibeber			4 days	Pacet			T. P. B.
Paddy Cultivation Techniques					Sep. 72 Feb. 73	Japan	July	Cihea			
Farming Machinery Operation			Jul. 16∿30	Cihea	Jul. 10∿19 (5 respondents)	Cihea	Aug. 2∿7	"	Sep. 2∿7	Cihea	
			Aug. 23∿ Sep. 4 (3 respondents)	"	Oct. 7∿19	"	Sep. 18∿28	"	Nov.	"	
			Aug. 25∿ Sep. 11	"	10 days	"	Nov.21∿28 (7 respondents)	"			
			Jan. ∿ Jul.	"	Unknown	"	Unknown	"			
			Unknown	"							
			10 days	Kuningan							
Animal Husbandry					Sep. 1∿8	Ciranjang					
Agricultural Management			Sep. 5∿15 (3 respondents)	Muara	Apr. 12	Sabandar	3 days in May	Bekasi	Feb. 25∿ Mar. 1	Cihea	Sabandar
					May	"	Jul. 9∿15 (4 respondents)	Pacet	Jul.	Kayuambon	Cihea
					Nov.13∿19 (6 respondents)	"	Oct. 8∿11	"	Unknown	Pacet	
							3 days in Nov.	"			
Seed Inspection	Apr. 24∿ May 3	Muara									
Demonstration Farm Management			Sep. 5∿15 (6 respondents)	Muara	Sep. 10∿15	Cihea	Sep. 15∿20	Cihea	Jan. 31∿22 (3 respondents)	Pacet	
			5 days in Nov. (2 respondents)	Pacet	Sep. 13∿19	"	" 2 weeks in Sep.	Pacet			
					2 weeks in Jul.	Pacet	Unknown	Cihea			

Course	Before 1971		1971		1972		1973		1974		Unknown
Trial and Experiments			15 days in Oct	Pacet	Unknown	Sabandar	May (3 respondents) Jul.	Cihea "			
PPL Training	Oct. '69 1970 (period unknown)	Tanjungsari Lemban	Unknown	Lemban	Unknown	Lemban	Aug. 30∿Sep. 6 Oct. 20∿25 Unknown	Cihea Kayuambon Lemban	Unknown	Lemban	
Farm Women Training							Nov. 26∿Dec. 22	Pasarminggu			
P3 Management					Oct. 4∿11	Sabandar	Feb. Jul. 20 4 days Unknown	Cihea Sabandar Cihea "	May 20∿29 Jul. 4 Sep. 2∿7 Sep. 21∿Oct. 2	Kayuambon " Cihea Pusjiklat	
Farmers' Organization									May 4∿7	Cihea	
Extension Techniques									Sep. 23∿25	Kayuambon	

Notes: 1. The numbers of training courses as disclosed from the survey are 3 before 1971, 20 in 1971, 24 in 1972, 34 in 1973 and 15 in 1974, which indicates that full-scale training activities were commenced in 1971.

2. Training is also conducted under other projects than West Java Food Production Increase Project.

4. Occupation before and after Training

(1) Occupation Immediately after Training and Present Occupation

Previous Occupation / Present Occupation	Demonstration Farm Operator	Desa Leader	Extension Worker	Chief of Extension Center	Kabupaten Staff (Post Changed)	Kanbupaten Staff (Post Unchanged)	Others	Unknown	Total	Number of Transfers
Desa Leader	1	2						1	4	1
Extension Worker			15	2			1	1	19	3
Chief of Extension Center			1	8					9	1
Kabupatan Staff				5	1	1			7	6
Others				1					1	1
Unknown								4	4	
Total	1	2	16	16	1	1	1	6	44	14

Notes: 1. 31.8% of the respondents were transferred to new posts after the training.

2. Transfers from Kabupaten staff to Chief of Extension Center accounted for the largest percentage, followed by those from extension worker to Chief of Extension Center.

(2) Occupation before Training and Present Occupation

Previous Occupation / Present Occupation	Farmer	Desa Leader	Extension Worker	Chief of Extension Center	Kabupaten Staff (Post Changed)	Others	Unknown	Total	Number of Transfers
Desa Leader	2	2						4	2
Extension Worker			12	1		1	5	19	2
Chief of Extension Center			4	3	1		1	1	7
Kabupaten Staff				4	2		1	7	6
Others				1				1	1
Unknown							4	4	
Total	2	2	16	9	3	1	11	44	18

Notes: 1. About 41% of the respondents were transferred after training, and 80% of them took up their new post immediately after training.

2. Assignment to the post of Chief of Extension Center accounted for the greatest part of the transfers, followed by that to Kabupaten staff.

5. Training Subjects Found Impressive or Useful by Respondents

	Item \ Present Post	Desa Leader		Extension Worker		Chief of Extension Center		Others		Unknown		Total	
		Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful
Agricultural Machinery	Knowledges of agricultural machinery and improved farming equipment				3	1	3		3			1	9
	Utilization and management method of agricultural machinery	1		2	6		1		1	1	1	4	9
	Practical training in disassembling, reassembling and operation of agricultural machinery	1		7	1	2	1	1		2		13	2
	General knowledges about tractors			1	2							1	2
	Practical training in disassembling and reassembling tractors					2						2	
	Knowledges of weeders and training in their handling			1				1				2	
	Utilization of pedal rotary threshers			1								1	
	Sub-total	2		12	12	5	5	5	4	3	1	24	22

	Item \ Present Post	Desa Leader		Extension Worker		Chief of Extension Center		Others		Unknown		Total	
		Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful
Production Techniques	Production Techniques		1		2				1		1		5
	Various cultivation techniques		1	1	2		1					1	4
	Practical training in nursery bed management	1										1	
	Practical training in fertilizer application							1				1	
	Disease and insect pest control techniques			1	1							1	1
	Soil analysis							1				1	
	Seed inspection								1				1
	Practical training in soybean cultivation	1										1	
	Training in chicken raising	1											
	Sub-total	3	2	2	5		1	2	2		1	6	11
Agricultural Management, Etc.	Knowledges of agricultural management		1	3	3	1	3	2	1		1	6	9
	Socio-economic knowledges						1				2		3
	Agricultural development			2		1				1		4	
	Farm women training and farm household management			1	1							1	1
	Other knowledges not directly relevant to production techniques					1						1	
	Sub-total		1	6	4	3	4	2	1	1	3	12	13
Extension Services	Knowledges of demonstration farms				1	1			1			1	2
	Observation method of experimental or observation fields						1	1		1		2	1
	Method of organizing farmers and fostering Kelompoks			1		2	2					3	2
	Method of solving problems within local areas			2			2					2	2
	Method of developing extension centers					1						1	
	Extension techniques and method of guiding farmers and extending improved techniques among them		1		2	1		1	2		2	2	7
	Sub-total		1	3	2	5	5	2	3	1	2	11	14

Present Post / Item		Desa Leader		Extension Worker		Chief of Extension Center		Others		Unknown		Total	
		Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful	Impressive	Useful
Abstract Answers	All training subjects and guidances proved useful			1	1	1	2	3	1			5	4
	Lectures and practical training	1		3		1		1	1			6	1
	Improvement of knowledges and techniques and attainment of skill in various fields			3	2		1	1	1	4		8	4
	Exchange of views and opinions			1								1	
	Sub-total	1		8	3	2	3	5	3	4		20	9
No Answer							1						1
Total		6	4	31	27	15	19	13	13	9	7	73	70
Number of Answers per Respondent		1.50	1.00	1.63	1.42	1.67	2.11	1.63	1.63	2.25	1.75	1.66	1.59

Training in Agricultural Machinery Operation and Knowledges	Total Number of Trainees	2		14		8		4		2		30	
	Number of Answers	3		20	15	7	8	7	7	7	1	44	31
	Average Number of Answers per person	1.50	0.00	1.43	1.07	0.88	1.00	1.75	1.73	3.50	0.50	1.47	1.03
Training in Production Techniques	Total Number of Trainees	3		6		7		5		1		22	
	Number of Answers	4	2	10	8	2	4	7	5	4	1	26	20
	Average Number of Answers per person	1.33	0.67	1.67	1.33	0.29	0.57	1.40	1.00	4.00	1.00	1.18	0.91
Training in Agricultural Management	Total Number of Trainees	3		9		4		3		2		21	
	Number of Answers	1	1	14	7	5	7	7	4	5	3	32	22
	Average Number of Answers per person	0.33	0.33	1.55	0.78	1.25	1.75	2.33	1.33	2.50	1.50	1.52	1.05
Training in Extension Activities	Total Number of Trainees	2		11		4		4		2		23	
	Number of Answers	1	1	11	6	7	8	7	6	5	2	31	23
	Average Number of Answers per person	0.50	0.50	1.00	0.55	1.75	2.00	1.75	1.50	2.50	1.00	1.35	1.00

Notes: 1. Number of answers = Sub-totals of all items + Sub-total of abstract answers

2. Training in agricultural management registered the largest average number of answers per person and also recorded the largest numbers of respondents who answered "impressive" and "useful."

3. With the exception of those whose occupation was unknown, the trainees with "Other Occupations (chiefly Kabupaten staffs)" were the largest in number of all the respondents who evaluated the training in agricultural machinery as being "impressive" or "useful."

4. Extension workers who answered that the training in production techniques was "impressive" and "useful" were the largest in number of all the respondents who gave the same answers.

5. As for the training in agricultural management, the largest numbers of answers "impressive" and "useful" were respectively given by the trainees with "Other Occupations" and chiefs of extension centers.

6. Chiefs of extension centers were the largest in number of all the respondents who evaluated the training in extension activities as being "impressive" and "useful."

7. Of all the training courses, agricultural machinery and extension activities recorded the largest numbers of answers "impressive" which were given by the trainees with "Other Occupations" and chiefs of extension centers, respectively. On the other hand, the largest number of answers "useful" were given by chiefs of extension centers who were trained in extension activities.

8. The above quantitative tabulation is based on the idea that the larger the number of answers, the greater the training effect. The contents of answers therefore deserve to be checked for the training courses which registered large numbers of answers.

6. Respondents' Desires for Training

(1) Training Period

Respondent \ Period	3 days	5 days	7 days	10 days	14 days	15 days	30 days	90 days	5∿10 days	7∿14 days	10∿20 days	15∿20 days	15∿30 days	30∿60 days	Total
Desa Leader		1			1	2									4
Extension Worker		1	3	4	3		4	1	1	1				1	19
Chief of Extension Center	1	1	2	2		1					1			1	9
Others		1	2			1				1		1	2		8
Unknown		1				2				1					4
Total	1	5	7	6	4	6	4	1	1	3	1	1	2	2	44

Note: A training period of 1 to 2 weeks was desired by most respondents.

(2) Training Place

Place / Respondent	Cihea	Sabandar	Kayuambon	Pacet	Lemban	Muara	Central Training Center	Provincial Training Center	Any Place Best Suited to Training Purpose	Nearby Place	Advanced Farming Area	Round-trip Training at Respective Training Centers	Others	Total	No Answer
Desa Leader	3	1	1					1						6	
Extension Worker	10	1	2	1	2	1			3		1	1		22	1
Chief of Extension	4			1	1	1			1				1	9	
Center Others	3					2	1		1	1				8	
Unknown	1		1				1		1				2	6	
Total	21	2	4	2	3	4	2	1	6	1	1	1	3	51	1

Note: Most respondents hoped to be trained at Cihea Center.

(3) Method and Contents of Training

Method and contents / Respondents	Method						Contents						
	50% each for lectures and practical training	40% for lectures and 60% for practical training	Lectures for the most part	Practical training for the most part	Total	No Answer	Agricultural machinery	Contents suited to the purpose of training	Concentrated theoretical studies	Contents compatible with the training period	Concentrated training in a specific subject	Total	Number of Respondents
Desa Leader	4				4								
Extension Worker	15	1		1	17	2	2	1	1		1	5	5
Chief of Extension	4			4	8	1	2		1	1		4	4
Center Others	6			2	8		2	2				4	4
Unknown	3				3	1		1				1	1
Total	32	1	1	7	41	4	6	4	2	1	1	14	14

Note: 88% of all respondents hoped to be given practical training.

7. Post-Training Studies of Respondents

(1) Kind of Post-Training Study Activity

Kind of Study Activity / Respondent	Visited training center	Read relevant reference books and data	Asked leaders for guidance and information	Put what was taught in practice	Did nothing	Total
Desa Leader		4	4	3	0	11
Extension Worker	2	15	10	13	0	40
Chief of Extension Center	2	5	3	6	0	16
Others	1	5	4	6	0	16
Unknown	1	4	3	3	0	11
Total	6	33	24	31	0	94

Notes: 1. All respondents were found to have kept on studying the subject they had taken.

2. Average number of answers per respondent was 2.1. Answers given by Desa leaders were the largest in number, followed by those of extension workers.

3. "Read reference books and data "recorded the highest percentage of 75%, followed by "Put what was taught in practice (70%)," and "Ask leaders for guidance and information (54%)."

(2) Kind of Data Read by Respondents

Respondent / Subject / Title of Data	Desa Leader	Extension Worker	Chief of Extension Center	Others	Unknown	Total
Number of Respondents	4	13	5	2	2	26
Agricultural Information	1	2				3
Agricultural Problems	2	2				4
Agricultural Management	1		1			2
Agricultural Magazine			1			1
Agricultural Machinery		4			1	5
Newspaper		1				1
Paddy Cultivation Techniques			1			1
Extension Farm Management			1			1
Mitsui's "Urea Fertilizers"				1		1
Sujatanika by M. A.					1	1
Kubota's Guidebook			1			1
Annual Operation		1				1
Method of Farmers' Guidance			1			1
Data Furnished during Training		3	2			5
Data Relevant to Respondent's Duties					1	1
Brochures and Pamphlets		4	3	1		8
Others			1			1
Total	4	17	13	2	3	39

Notes: 1. 78.8% of the respondents who answered "Read reference books and data" cited the titles of data.

2. Number of data read by one respondent averaged 1.5, with a maximum of 2.6 registered by chiefs of extension centers.

(3) Leaders Asked for Guidance and Information

Leader \ Respondent	Desa Leader	Extension Worker	Chief of Extension Center	Others	Unknown	Total
Chief of Kabupaten Agricultural Extension Office	2	2	2	1		7
Assistant Chief of Kabupaten Agricultural Extension Office		2				2
Kecamatan Leader	2	1				3
Technical Expert		3	2	1		6
Chief of Extension Center		6		1	1	8
Staff of Training Center			1			1
Agronomist				1		1
Total	4	14	5	4	1	28
Number of Respondents	4	9	3	3	1	20

Notes: 1. 83.3% of the respondents who answered, "Asked leaders for guidance and information, gave the names of such leaders.
2. Number of answers averaged 1.4 per respondent, and chiefs of extension centers and extension workers gave the largest numbers of answers.
3. Extension workers stating that they asked the chief of their center accounted for the greatest portion of the respondents, and 26% of the respondents answered that they had asked technical experts for guidance and information.

8. Training Courses and Subjects Desired by Respondents

Desired training course and subject \ Respondent		Desa Leader	Extension Worker	Chief of Extension Center	Others	Unknown	Total
Production Techniques	Various production techniques	2	2	1	1		6
	Paddy cultivation		1	1			2
	Soil and fertilizer application					1	1
	Disease and insect pest control					1	1
	Irrigation and drainage				1		1
	Animal husbandry and fish culture	1					1
Sub-total		3	3	2	2	2	12
Agricultural Machinery		1	12	5	2	1	21
Agricultural Management	Agricultural development					1	1
	Agricultural management		3	2	2	1	8
	Agricultural statistics					1	1
	Farm household management		1				1
	Sub-total		4	2	2	3	11
Extension Activities	Extension and guidance method		2	1		2	5
	Experiment and extension farm operation			1	1		2
	Creation and fostering of farmers' organizations			1			1
	Leadership in agricultural improvement		1				1
	Services of extension workers		2				2
	Activities of extension center		1	1			2
	Method of assisting in the activities of extension center				1		1
	Sub-total		6	4	2	2	14
Teachers' Training and Education					1		1
Subject Relevant to Respondent's Duties					1		1
Subject Designated by Superior Officer					1		1
Total		4	26	14	11	8	63
No Answer				1			1

Notes: 1. The number of desired training subjects per person was 1.8 for chiefs of extension centers, 1.4 for other respondents, and 1.3 for extension workers, averaging 1.5 per respondent.

2. Training in agricultural machinery operation was desired by the largest number or 48.8% of respondents.

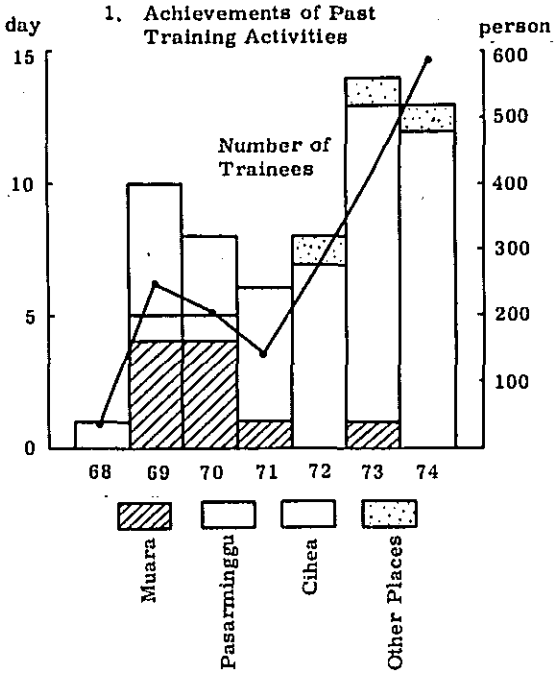
3. 32.6% of all respondents expressed the desire to receive training in extension activities. In the case of extension workers alone, the percentage was as high as 52.6%.

4. Training in production techniques was desired by 27.9% of all respondents, with Desa leaders and extension workers in actual field service noted to be specially willing to take this training.

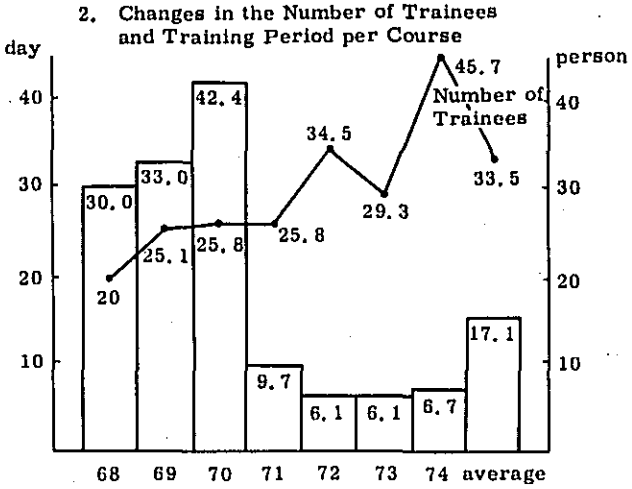
5. Training in agricultural management was desired y 25.5% of all respondents. Extension workers were more willing to receive this training than other respondents.

VII. DIAGRAMS OF PAST TRAINING ACTIVITIES

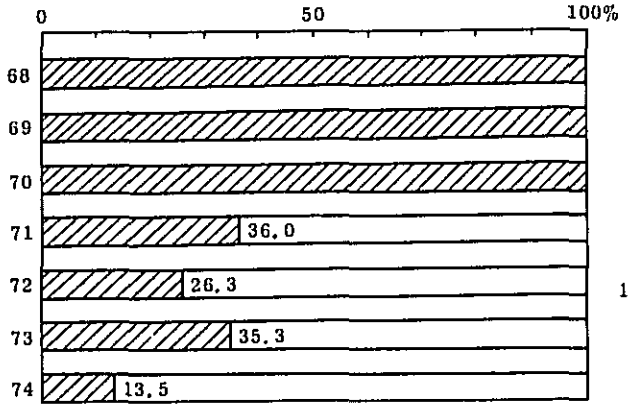
1. Achievements of Past Training Activities



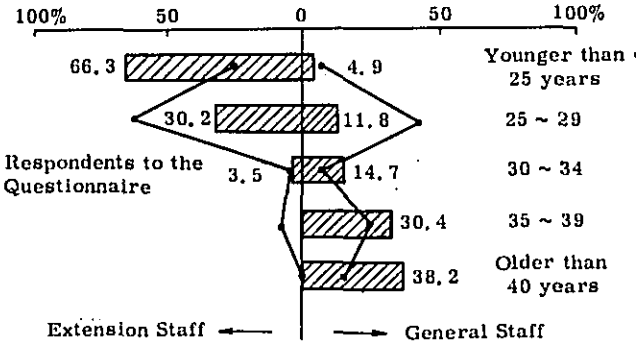
2. Changes in the Number of Trainees and Training Period per Course



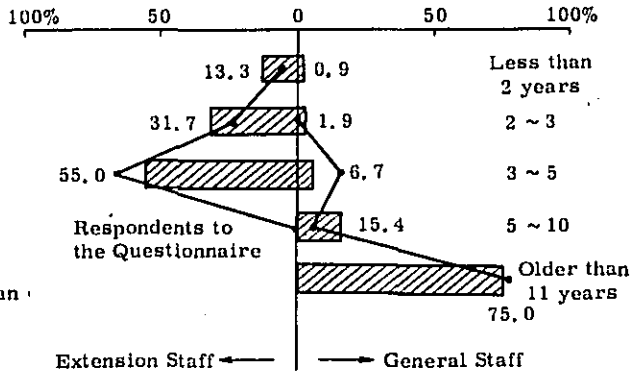
3. Ratio of Leading Agricultural Staffs to All Trainees, Cihea Center



4. Age Structure of Leading Agricultural Staffs



5. Composition of Leading Agricultural Staff by the Number of Years of Experience



PART III. EXTENSION SERVICES FOR PRIVATELY OWNED LAND IN CIHEA AREA

I. Outline of Agriculture in Privately Owned Land of Cihea Area

II. Changes of Privately Owned Paddy Field Area in Cihea Area

III. Annual Achievements of Extension Services in Privately Owned Land in Cihea Area

Number, Area and Yield of Demonstration Farms and Number of Operating Farm Households

Average Yield of Improved and Local Varieties

Planted Area of Improved Varieties and Number of Operating Farm Households

Fertilized Paddy Field Area and Number of Operating Farm Households

Paddy Field Area under Disease and Insect Pest Control and Number of Farm Households Following Control Practices

Paddy Field Area under Disease and Insect Pest Control by Powered Equipment and Number of Farm Households Following Powered Control Practices

Paddy Field Area under Weeder Application and Number of Farm Households Using Weeders

Paddy Field Area under Sickle Reaping Method and Number of Operating Farm Households

Paddy Field Area Covered by Threshers and Number of Operating Farm Households Paddy Field Area Covered by Tillers and Number of Operating Farm Households

IV. Average Yield by Variety of Privately Owned Paddy Field Area Excluding Demonstration Farms

V. Organization of Farmers within Cihea Area

1. Kelompok Tani
2. Himpunan Tani

SUMMARY

(1) Outline of Agriculture in Cihea Area

- o Since Cihea area extends over a number of administrative districts (Desas), there is a gap between the agricultural development policy carried out in each Desa and that implemented for the entire Cihea area. It is possible that this gap will pose a problem in future.
- o The acreage of upland fields in this area is substantially large, and the average operational holding of paddy field is as small as 33 a, with more than 70% of famrers having less than 50 a of land.
- o Farmers cultivating only paddy fields are found among large holders, and farmers with a holding of more than 100 a and less than 30 a have been on the gradual increase, suggesting that class disintegration is in progress at a slow pace.

(2) Relationship between Paddy Yield and Demonstration Farms

- o Average yield of paddy has been on the increase year after year. Specially after 1971, it has been on a sharp increase, recording a growth rate of 24%. Summer cropping of improved varieties has always registered by far the highest yield growth rate.
- o All demonstration farms have registered an average yield of as high as 6 t. As they cover more than 30% of Cihea area, this high yield is largely contributory to the increase of the area's average yield.
- o The great majority of the farmers who have enjoyed a yield of 6 t or more are the members of Kelompok Tani operating demonstration farms, and there are few who are not the members of Kelompok Tani. These farmers are known to have produced a high yield even before the establishment of demonstration farms. Excellent results have been obtained within the demonstration farms, but their fall-out effect into the neighbouring areas cannot be clearly observed yet.
- o It was before the establishment of demonstration farms that many farmers who were not the members of the demonstration farm organization began to enjoy yield increase. This growing trend of yield

is considered assignable to the extension of fertilization and plant protection techniques because it became apparent with the participation of these farmers in BIMAS.

(3) Extension of Improved Paddy Cultivation Techniques

- o Although improved varieties have been increasingly introduced over the past years, their cropping ratios vary largely by season and small holders refrain from planting them in the dry season. This is because the farmers are not yet convinced of the resistance of improved varieties against crop failure and is also attributable to the damage of diseases and insect pests ensued from continuous cropping.
- o Considering the fact that the improved varieties exhbitied a high yield growth rate in the demonstration farms, their cultivation techniques should be extended with guidances provided to make the farmers convinced of the advantages of the established cultural standards.
- o Fertilization and plant protection have been practised for some years already in parallel with the farmers' participation in BIMAS and have produced an appreciable yield increase effect.
- o Extension of an integrated fertilization and plant protection system is an essential prerequisite to the planned increase of yield to the level attained in the demonstration farms. What is to be done in the coming years is therefore to establish an extension and guidance policy for farmers not operating demonstration farms.
- o A number of new farming equipment were introduced to improve the farm work and some of them such as weeders, sprayers and dusters are likely to be used continuously in future. It is possible that threshers will also remain used in those areas where reaping is conducted with a sickle.
- o Improvement of farm work has been prompted by the farmers operating demonstration farms who have gained experience in handling leased farming machines and equipment. This gave an incentive effect on the nearby farmers not participating in the dem-farm organization, and about 30% of such farmers have initiated the farm work improvement in some way or other.

(4) Organization of Farmers and Future Extension Problem

- o In Cihea area, there are four Himpunan Tanis each comprising a number of Kelompok Tanis and operating a rice mill of their own to return the rice distribution cost to the member farmers.
- o In the coming years, Himpunan Tanis must be so transformed as will conform to the farmers' reorganization policy for the entire archipelago. It will therefore become necessary to create a new organization comprising their members and the farmers outside Cihea area.
- o Setting aside the activities of Himpunan Tanis, it is important for future extension of advanced techniques to organize all farmers in Cihea area into Kelompok Tanis which are to be created in all Desas for improved paddy cultivation. Organization of Kelompok Tanis is an impending task to be accomplished by extension activities.

I. Outline of Agriculture in Privately Owned Land of Cihea

WILD	Desa	Farm Household		Farmland Area			Farm Households Participating in BIMAS			Others				
		Number	Population	Paddy Field	Upland Field	Total	BIMAS	INMAS	Total	Rice Mill	Agricultural Cooperative Society	Fertilizer Dealer	Bank	Market
Ciranjanghilir	Ciranjanghilir	2,020	15,144	732	703	1,435	600	100	700	27	1	2	1	1
	Cipeuyeum	1,767	8,838	551	226	777	400	100	500	12		1		1
Cipeuyeum	Gununghalu	2,590	12,645	752	802	1,554	600	00	700	7	1	1	1	
	Sub-total	4,357	21,483	1,303	1,028	2,331	1,000	200	1,200	19	1	2	1	1
Bojongpicung	Bojongpicung	1,478	7,391	562	160	722	300	200	500	5	1	1		
	Ciranjang Girang	1,670	8,361	662	63	725	300	350	650	5		1	1	1
	Sub-total	3,148	15,752	1,224	223	1,447	600	550	1,150	10	1	2	1	1
Total		9,525	52,379	3,259	1,954	5,213	2,200	850	3,050	56	3	6	3	3
Total of Cihea Area		2,291		863		863								

Notes: 1. Cihea area stretches over five administrative districts (Desas) and three WILDs.

2. WILD is a unit area for agricultural development designated by a Presidential decree and a provincial governor's directive. It is planned to establish an agricultural cooperative society and station extension workers in each WILD.

3. Organization of farmers has been promoted in Cihea area under a plan not covering all the five Desas over which the area extends. It will therefore be required to adjust the gap between this plan and those mapped out on the Desa level.

II. Changes of Privately Owned Paddy Field Area in Cihea Area

Item \ Year		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Paddy Field Area		1,086	1,086	1,086	1,086	1,086	836	836	836	836	836	836	836	836
Average Operational Holding per Farm Household		0.47	0.47	0.47	0.49	0.47	0.36	0.36	0.37	0.36	0.36	0.37	0.37	0.37
Number of Farm Households	Less than 30 a	1,299	1,299	1,319	1,320	1,340	1,338	1,342	1,350	1,400	1,380	1,390	1,400	1,400
	30 ∿ 50	365	365	355	350	340	340	340	330	300	321	309	308	308
	50 ∿ 70	591	591	591	586	580	580	565	558	558	550	540	539	539
	70 ∿ 100	46	46	46	44	42	41	45	45	33	32	32	32	30
	100 ∿ 150	9	9	9	9	9	11	14	14	12	12	12	12	14
	150 ∿ 200	-	-	-	-	-	-	-	-	-	-	-	-	-
	More than 200 a	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	2,310	2,310	2,300	2,290	2,311	2,320	2,306	2,283	2,303	2,295	2,283	2,291	2,291
Distribution Ratio of Farm Households by Operational Holding	Less than 30 a	56.23	56.23	57.35	57.64	57.98	57.67	58.20	59.13	60.79	60.13	60.88	61.11	61.11
	30 ∿ 50	15.80	15.80	15.43	15.28	14.71	14.66	14.74	14.45	13.03	13.99	13.53	13.44	13.44
	50 ∿ 70	25.58	25.58	25.69	25.59	25.10	25.00	24.50	24.44	24.23	23.97	23.65	23.53	23.53
	70 ∿ 100	1.99	1.99	2.00	1.92	1.81	1.77	1.95	1.97	1.43	1.39	1.40	1.40	1.31
	100 ∿ 150	0.39	0.39	0.39	0.39	0.39	0.47	0.61	0.61	0.52	0.52	0.53	0.52	0.61
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Notes:
1. Cihea area was originally owned by the province and released by the provincial government for its creation. Part of the area was left under private ownership when the Provincial Farm was placed under direct management of the provincial government in 1970.
2. Since the provincial land was released for cultivation in each cropping season, the entire farmland area is planted under a complete double cropping system.
3. Transfer of land between farmers is observed, though not very notable.
4. About 60% of the farmers have an operational holding of less than 30 a, and they are on the gradual increase. Farmers with 50 ∿ 70 a of operational holding constitute the next largest group. If all farmers with less than 50 a of land are combined, they account for 75% of the total farming population.
5. As a whole, the number of farmers has been on the slight downward trend but the farmers with less than 30 a of land are on the increase. As a consequence, those with more than 100 a of holding are on the steady increase.

III. Annual Achievements of Extension Services in Privately Owned Farmland Area in Cihea

Item			1968 Dry Season	1968 Wet Season	1969 Dry Season	1969 Wet Season	1970 Dry Season	1970 Wet Season	1971 Dry Season	1971 Wet Season	1972 Dry Season	1972 Wet Season	1973 Dry Season	1973 Wet Season	1974 Dry Season
Demonstration Farm	Number									16	17	31	39	42	47
	Area	ha								87.88	77.63	149.57	173.46	202.75	272.75
		%								10.51	9.29	17.89	20.75	24.25	32.63
	Operating Farm Household	Number								269	244	432	510	571	739
		%								11.78	10.59	18.82	22.34	24.92	32.36
	Yield	Highest								8.50	7.10	8.66	7.60	7.50	-
		Lowest								5.30	5.60	4.36	5.64	5.50	-
		Average								6.80	6.30	6.95	6.02	6.00	-
Average Yield	Improved Varieties		3.3	3.5	3.5	3.7	3.7	3.8	3.3	4.6	4.1	5.6	5.0	5.8	-
	Local Varieties		2.9	3.1	2.9	3.1	3.3	3.2	2.7	3.6	3.1	4.4	4.0	4.2	-
	Average		3.1	3.3	3.2	3.4	3.5	3.5	3.0	4.1	3.6	5.0	4.5	4.5	-
Improved Varieties	Area	ha	600	750	500	760	550	500	350	450	390	568	596	500	636
		%	55.24	69.06	46.04	69.98	50.64	59.81	41.87	53.83	46.65	67.94	71.29	59.81	76.08
	Operating Farm Household	Number	1,750	1,800	1,650	1,855	1,700	1,650	950	1,500	1,430	1,690	1,755	1,800	1,850
		%	75.76	77.92	71.74	83.97	73.56	71.12	41.20	65.70	62.09	73.64	76.87	78.57	80.75
Fertilization	Area	ha	890	895	946	998	998	830	830	835	836	836	836	836	836
		%	81.95	82.41	87.11	91.90	91.90	99.28	99.28	99.88	100.00	100.00	100.00	100.00	100.00
	Operating Farm Household	Number	2,100	2,110	2,180	2,200	2,200	2,180	2,190	2,190	2,196	2,200	2,270	2,300	2,300
		%	90.90	91.34	94.78	99.59	94.20	93.97	94.97	95.93	95.35	95.86	99.43	100.00	100.00
Disease and Insect Pest Control	Area	ha	1,086	1,086	1,086	1,086	1,086	836	836	836	836	836	836	836	836
		%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Operating Farm Household	Number	2,300	2,300	2,300	2,300	2,300	2,300	2,200	2,300	2,300	2,300	2,300	2,300	2,300
		%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Disease and Insect Pest Control by Powered Equipment	Area	ha	10	75	85	85	100	115	125	129	140	155	165	170	190
		%	0.92	6.91	7.83	7.83	9.21	13.76	14.95	15.43	16.75	18.54	19.74	20.33	22.73
	Operating Farm Household	Number	210	275	256	260	291	315	340	345	360	385	398	420	435
		%	9.09	11.90	11.13	11.77	12.59	13.58	14.74	15.11	15.63	16.78	17.43	18.33	18.98
Weeder	Area	ha	1,086	1,086	1,086	1,086	1,086	836	836	836	836	836	836	836	836
		%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Operating Farm Household	Number	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
		%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Sickle Reaping	Area	ha	350	370	300	380	255	170	105	200	225	360	375	280	310
		%	32.23	34.07	27.62	34.99	23.48	20.33	12.56	23.92	26.91	43.06	44.86	33.49	37.08
	Operating Farm Household	Number	700	725	685	730	650	346	365	370	378	715	730	680	695
		%	30.30	31.39	29.78	33.05	28.13	14.91	15.83	16.21	16.41	31.15	31.98	29.81	30.34
Thresher	Area	ha							25	90	80	155	175	215	289
		%							2.99	10.77	9.57	18.54	20.93	25.71	34.57
	Operating Farm Household	Number							100	300	250	400	550	579	265
		%							4.34	13.14	10.86	17.43	24.09	25.27	11.57
Tiller	Area									55	5	115	-	7	-
	Number of Farm Households									120	15	350	-	21	-

Notes: 1. In Cihea area, demonstration farms each covering an acreage of about 5 ha are established and their operators are organized into a farmers' voluntary organization called "Kelompok." Each Kelompok is given guidances in joint farming work, intorudction of improved varieties, fertilizer application, plant protection techniques and introduction of mechanized farming method in order to increase the yield.

2. Establishment of the demonstration farms was set afoot from 1971 and their area and operating farm households both exceed 32% of all farmland area and farm households in Cihea area at present. The yield has also reached the originally planned 6 ton mark. However, the average yield has dwindled to a small extent with the expansion of the farms.

3. The average yield in the whole Cihea area has been unquestionably on the upward trend since the 1971 wet season when the demonstration farms were established, which indicates that the operation of the demonstration farms has contributed largely to the area's yield growth.

4. Introduction of improved varieties showed a rather unstable trend before the 1971 wet season. After that, the number of farm households growing improved varieties has been on the steady increase by virtue of the incentive effect produced by the operation of the demonstration farms. Nevertheless, the cropping ratio still remains extremely unstable, showing the tendency to increase in the dry season and dwindle in the wet season. This fact points to the technical problems entailed in the introduction of improved varieties.

5. As for the fertilization and plant protection practices, neither the area nor the number of farm households showed any change after the establishment of the demonstration farms. These practices had been followed for quite some time and were found to have attained nearly 100% diffusion rate when the demonstration farms were created. Hence, Cihea area was found to be much more advanced than other areas, although there might have beeen technical problems involved in the application of fertilizers and control of diseases and insect pests.

6. Powered equipment were used in part of the demonstration farms because their extension was started after introduction of various agricultural machinery and equipment. Extension of the sickle reaping method and introduction of improved varieties can be assigned, though to an extent, to the operation of the demonstration farms.

7. Further expansion of demonstration farms is not considered necessary because their area and operating farm households now account for more than 30% of all farmland area and farm households of Cihea.

IV. Average Yield by Variety of Privately Owned Paddy Field Area Excluding Demonstration Farms (t/ha)

Variety \ Year		1972		1973		1974	Average		
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Dry Season	Wet Season	Aggregate Average
Improved Variety	P.B·5	3.30	4.60	3.20	4.50	4.10	3.53	4.55	4.04
	Pelita I/1	3.60	4.90	4.31	5.10	5.25	4.39	5.00	4.70
	Pelita I/2	3.00	4.20	4.20	4.50	4.80	4.00	4.35	4.18
	C4 – 63	3.90	3.25	3.75	3.80	4.10	3.92	3.53	3.72
	Average	3.45	4.24	3.87	4.48	4.56	3.96	4.36	4.16
Local Variety	Bengawan	3.10	3.20	4.40	4.25	4.15	3.88	3.73	3.80
	Sentral	2.90	3.40	4.00	4.20	4.20	3.70	3.80	3.75
	Omas	3.10	3.50	4.25	4.00	4.10	3.82	3.75	3.79
	Cinta	2.60	2.70	3.20	3.10	3.25	3.02	2.90	2.96
	Jerah	2.60	2.85	3.25	3.60	3.70	3.18	3.23	3.20
	Brondol	3.10	4.00	3.50	4.10	3.90	3.50	4.05	3.78
	Average	2.90	3.28	3.77	3.88	3.88	3.52	3.58	3.55
Aggregate Average		3.18	3.76	3.82	4.18	4.22	3.74	3.97	3.86

Notes: 1. This table was prepared from a survey of average yield of paddy by variety after 1972. The survey covered the paddy field area excluding the demonstration farms.

2. The figures shown in this table are lower than the average yield shown in Table III for demonstration farms and the whole Cihea area.

3. Pelita I/1 gives the highest yield of all improved varieties. As for local varieties, virtually no difference in average yield can be observed among four varieties, i.e., Bengawan, Omas, Brondol and Sentral.

4. The yield difference between improved and local varieties shown in this table is smaller than that given in Table III. This indicates that in order for improved varieties to exhibit their high yielding capacity to the full, it is necessary to provide the farmers with guidances in cultivation techniques.

V. Organization of Farmers within Cihea Area

1. Kelompok Tani

Item		1971 Wet Season Newly Established	1972 Dry Season Newly Established	1972 Dry Season Cumulative Total	1972 Wet Season Newly Established	1972 Wet Season Cumulative Total	1973 Dry Season Newly Established	1973 Dry Season Cumulative Total	1973 Wet Season Newly Established	1973 Wet Season Cumulative Total	1974 Dry Season Newly Established	1974 Dry Season Cumulative Total
Number of Kelompok Tanis	Less than 10 members	4		4	3	7	2	9	1	10	3	13
	11 ∿ 20	7	3	10	10	20	1	21	8	29	2	31
	More than 21 members	2		2	1	3		3		3	2	5
	Total	13	3	16	14	30	3	33	9	42	7	49
Membership	Total	201	48	249	199	448	25	473	135	608	99	707
	Membership/Total number of farm households	8.80		10.81		19.52		20.72		26.54		30.86
	Average membership	15.46	16.00	15.56	14.21	14.93	8.33	14.33	15.00	14.48	14.14	14.43
Coverage	Total	74.26	17.82	92.08	78.86	170.94	11.45	182.39	46.10	228.49	36.65	265.14
	%	8.88		11.01		20.45		21.82		27.33		31.72
	Average	5.71	5.94	5.76	5.63	5.70	3.82	5.53	5.12	5.44	5.24	5.41

Notes: 1. Kelompok Tani is the voluntary association of farmers who are organized by establishing demonstration farms.

2. In terms of the established number, Kelompok Tanis were slightly smaller than the demonstration farms until the 1973 dry season, caught up with the demonstration farms in the west season of the same year, and outstripped them in the 1974 dry season. It is desirable that positive effort be made to organize the farmers into Kelompok Tanis for operation of the demonstration farms and introduction of advanced farming techniques.

3. Most Kelompok Tanis have a membership of less than 20 persons or an average of 14.5 persons, which is ideal for this type of organization. Coverage of one Kelompok Tani is about 5 ha which is equivalent to the area of one demonstration farm.

2. Himpunan Tani

No.	Name	Coverage	Number of Member Farm Households	Activity
1	Tani Mulya	30,146	73	Rice mill operation and management
2	Tani Mukti	25,294	79	"
3	Tani Sugih	27,214	63	"
4	Tani Sekawan	30,833	81	"
Total		113,487	296	

Notes: 1. Himpunan Tani is an organization comprising a number of Kelompok Tanis. Efforts are made to transform it into a utility cooperative society on the basis of its operation and management of rice mill and expand the scope of its activities to include the functions of agricultural cooperative society.

2. 12.9% of all farm households holding 13.2% of the total paddy field area in Cihea are organized into Himpunan Tanis at present.

3. This organization was created by the supply of rice mills under the cooperation agreement. Its further expansion cannot be assured if the supply of rice mills is discontinued.

4. It is believed that the activities of Himpunan Tanis should be taken over by agricultural cooperative societies planned to organized by the Indonesian side.

PART IV. EXTENSION ACTIVITIES IN THE SURROUNDING SEVEN KABUPATENS

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   - (9) Extension of Farming Machines and Equipment

SUMMARY

(1) Outline of Extension Centers

- o Each extension center usually covers four Kecamatans and a farm population of about 200 thousand. The number of farm households and farmland area vary from center to center. About 80% of the personnel requirement for extension services is filled by the extension workers now in service.
- o Each of the extension centers is equipped with farmers' training facilities and a demonstration and experiment farm, so that it resembles Cihea Center in minature. However, the facilities available at these centers are not identical but considerably diversified.
- o Machines and equipment offered to these centers are utilized in different manners depending on the year of establishment of respective centers and quantity of available equipment. At all centers, these machines and equipment came to be put in full use in 1973, the final year of the cooperation agreement.

(2) Agriculture in Kabupatens Cianjur and Bekasi

- o Although these two Kabupatens were selected as the objects of sample survey, Kabupaten Cianjur is an upland field area and the paddy field ratio is higher in Kabupaten Bekasi. In addition, the average yield of main crops and the average operational holding per farm household are both higher in Kabupaten Bekasi, and productivity and efficiency of farming practices are higher in Kabupatens closer to Jakarta than in Kabupatens far from it.
- o The number of large holders in Kabupaten Bekasi is larger than in Kabupaten Cinajur. Although Kabupaten Cianjur is a farm area, the scale of management of individual farmers is rather small.
- o However, when the paddy cropping condition in the two Kabupatens is studied by season, it is noted that paddy is planted uniformly in all cropping seasons at a cropping ratio of nearly 200%, in Kabupaten Cinajur, whereas the cropping ratio in Kabupaten Bekasi is subject to a large seasonal fluctuation and double cropping is possible in

less than half of the total paddy field area. In Kabupaten Bekasi, irrigation improvement is an important problem to be solved in future.

(3) Extension of Paddy Cultivation Techniques and Paddy Yield

- o In all areas covered by the four extension centers, the yield of paddy has increased over the past years. The yield increase in these areas present a sharp contrast to that in Cihea area. To be more specific, local varieties have recorded a higher yield growth rate than improved varieties and the dry season cropping produced a higher yield than the wet season cropping.
- o The highest average yield has been recorded in Gunonghalu district, and the lowest in Tambun district. In terms of the yield growth rate, however, this relationship is reversed, so that it can be said that low productive districts are about to catch up with high productive districts.
- o The yield in the two extension center districts in Kabupaten Cianjur has maintained a fairly steady upward trend, and this is apparently to be accredited to the extension of various improved techniques. While there is no doubt that the extension of fertilization and plant protection techniques has been largely promoted by the farmers' participation in BIMAS, it should be noted that the extension of improved varieties also played an important role in increasing the yield of paddy in Gunonghalu district.
- o In the two extension center districts in Kabupaten Bekasi, the yield does not show a stabilized upward trend and is further subject to an extreme seasonal fluctuation. In addition, improved techniques are introduced and applied only by a small number of large holders. The overall average yield in the two districts is greatly influenced by the paddy cropping by these large holders and by the seasonal yield fluctuation. The lack of consolidated irrigation facilities is another cause of the extreme seasonal fluctuation of yield.
- o Thus, technical extension presents different aspects and problems by district. The points and method of extension activities should therefore be reviewed with the situation in each district taken into due consideration.

(4) Demonstration Farms and Problems in Future Extension Activities

- o The demonstration farms in the districts covered by the four extension centers are not operated satisfactorily to attain the objective of their establishment. This may perhaps be attributable to the present distribution of extension workers. In the coming years, a system should be established under which a single extension worker will be assigned to the task of guiding and controlling the operation of several demonstration farms.
- o However, technical improvement attained in each demonstration farm is quite remarkable, and this is to be construed as an outcome of technical guidance effort rather than that of mere extension of fertilizers and agro-chemicals. Since limits are set on the establishment of additional demonstration farms, future effort should be directed toward devising an efficient method of technical guidance which does not resort to the operation of demonstration farms.
- o The questionnaires filled by farmers disclosed that they regard their leaders as the most dependable source of information and knowledges they want. This fact indicates that excellent diffusion effect can be expected from the services of extension workers. As things stand now, however, extension workers are limited in number and forced to concentrate their activities in demonstration farms.
- o Although large holders constituted a substantially large portion of the respondents to the questionnaire, it was found that the effect of demonstration farm operation is also diffused among about 15% of farmers not belonging to any dem-farm organization. These advanced farmers are important diffusers of improved techniques and should therefore be further encouraged to absorb and apply new techniques.
- o The free answer column included in the questionnaire under the title of "Problems now encountered" registered a considerably high completion rate, making it possible to summarize and recapitulate the problems to be solved in each district. Answers filled in the column provided the basic conditions for conducting extension activities in each district.

- The discussion briefed above leads to the conclusion that prospective leaders should be recruited to create Kelompoks in order to bring solution for the prevailing problems and improve paddy cultivation techniques. Kelompoks thus organized should further be developed from the groups for technical study and improvement into collective production groups.

I. Outline of the Four Extension Centers

I. General Situation in the Four Districts

Item \ Extension Center	Cianjur Kabupaten		Bekasi Kabupaten	
	Cibeber	Gunonghalu	Telukpucung	Tambun
Number of Kecamatans	4	4	4	3
Number of Desas	40	34	26	24
Paddy Field Area	13,132 ha	12,360 ha	19,213 ha	15,581 ha
Upland Field Area	29,595 ha	11,319 ha	9,966 ha	10,955 ha
Number of Farm Households	44,199	24,045	38,181	40,321
Farm Population (persons)	200,854	208,052	191,954	201,605
BIMAS Area			5,456 ha	6,500 ha
Number of BUUD/KUD	9		6	5
Number of Extension Workers	12		14	10
Number of WILD	12	12	16	Same as the number of Desas

Notes: 1. Extension activities are conducted in the seven Kabupatens with assistance offered under Tani Makmur project which covers these Kabupatens. For the present survey, two of these Kabupatens, Cianjur and Bekasi, were selected.

2. Kabupaten Cianjur embraces Cihea area, and Kabupaten Bekasi adjoins Kabupaten Jakarta.

3. Under Tani Makmur project, assistance is offered to two extension centers in each Kabupaten, and they are called the first extension center (P_{3-1}) or the second extension center (P_{3-2}) according to the time of their establishment.

4. Cibeber and Telukpucung are both first extension centers and Gunonghalu and Tambun are second extension centers.

5. Each center covers about four Kecamatans. The number of Desas covered by an extension center is about 40 in Kabupaten Cianjur and about 25 in Kabupaten Bekasi.

6. WILD is a unit area for agricultural development and one extension worker is required to be stationed at each WILD. However, assignment of extension workers to each WILD is not completed except in Cibeber district.

2. Outline of Facilities

	Item \ Extension Center	Cibeber	Gunonghalu	Telukpucung	Tambun
Extension Center Building	Office Room	9 x 4 = 36 m^2	3 x 4 = 12 m^2	7 x 4 = 28 m^2	4 x 4 = 16 m^2
	Lecture Room	9 x 9 = 81 "	8 x 6 = 48 "	10 x 7 = 70 "	–
	Laboratory	3 x 3 = 9 "	3 x 2 = 10 "	7 x 5 = 35 "	9 x 4 = 36 "
	Accommodation Room	6 x 3 = 18 "	–	11 x 7 = 77 "	9 x 4 = 24 "
	Office of Accommodation Room	–	–	4 x 3 = 12 "	–
	Pool	3 x 3 = 9 "	2 x 1 = 2 "	4 x 3 = 12 "	2 x 3 = 6 "
	Cuisine	–	–	4 x 4 = 16 "	5 x 2 = 10 "
	Toilet	–	2 x 1 = 2 "	4 x 3 = 12 "	–
Ancillary Facilities	Ancillary Facilities	9 x 5 = 45 "	6 x 4 = 24 "	4 x 3 = 12 "	8 x 4 = 32 "
	Farm Machinery Storage	–	–	10 x 8 = 80 "	–
	Store Room	–	–	9 x 6 = 54 "	–
	Seed Room	–	–	21 x 6 = 126 "	–

Item	Extension Center	Cibeber	Gunonghalu	Telukpucung	Tambun
Ancillary Facilities	Poultry House	–	–	7 x 5 = 35 m^2	–
	Fish Culture House	–	–	7 x 4 = 28 "	–
	Total Building Area	198 m^2	98 m^2	597 m^2	124 m^2
Field	Paddy Field	150 a		13,586 a	
	Upland Field	100 "		4,000 a	1,856 a
	Total Field Area	250 "	124 a	17,586 a	1,856 a
Office Supplies	Office Supplies Desk	1		3	
	Trainee's Desk	21		26	8
	Conference Desk	1			
	Chair	28		43	10
	Bed			19	5
	Demonstration Shelf	1			
	Book Shelf	1			
	Cupboard	1		1	1
	Blackboard	2		7	3
	Others	1 Steel Cabinet		40 Pillow	1 set Furnitures
Office Equipment	Typewriter	1		1	
	Calculating Machine	5		1	
Audio-visual Aids	Tape Recorder	1			
	Transistor Megaphone	3		2	
	Broadcasting Equipment	1		1	
	Portable Speaker	4		4	
	Broadcasting Car	1			
Agricultural Machinery and Equipment	Hand Tractor (Tiller)	3	1	5	2
	Trailer	4	1		2
	Weeder	40		40	20
	Hand Sprayer	5			
	Horizontal Sprayer	3	4	4	4
	Powered Sprayer			5	
	Mist Blower	1	3	1	3
	Sickle		15	77	49
	Pedal Rotary Thresher	10	4	9	5
	Powered Thresher			1	
	Blower	2		3	
	Cutter	4	2	4	2
	Portable Tool Set	1	1	1	1
	Generator	1		1	1
	Pump			1	1
	Rubber Hammer	2	1	2	1
	Tyre Gauge	1	1		
	Damage Preventive Net	2			
	Hand Husker	1		5	
	Cut-in Engine			1	
	Sub-total	80	33	160	91

Item	Extension Center	Cibeber	Funonghalu	Telukpucung	Tambun
Experimental Appratus and Measuring Instrument	Balance	9	3	9	6
	Measuring Cylinder	25	8	23	12
	Tape Measure	8	5	5	5
	Thermometer	2		3	2
	Tensiometer	3		7	
	Tachometer	2	1		1
	Sample Cereal	5		2	
	Carton	26	10	27	10
	Magnifying Glass	8		5	2
	Petri Dish	38	10	10	10
	Soil Analyzer	3	1	1	
	Light Trap	1			1
	Colour Plate Set	1		1	
	Sub-total	131	38	93	49

Notes:
1. The above table was prepared to show different facilities available at the four extension centers.
2. In general, the first extension centers (Cibeber and Telukpucung) are better equipped than the second centers.
3. Unlike the extension centers in Kabupaten Bekasi, the two centers in Kabupaten Cianjur have no accommodation facilities. This is perhaps because Cihea Center is equipped with excellent accommodation and training facilities.
4. Telukpucung center has far more fields and storehouses than the other three centers because it also functions as a seed center of Kabupaten Bekasi.
5. The accommodation room of Cibeber Center is used solely by its staffs.

3. Utilization of Machines and Equipment Supplied under Technical Cooperation Agreement

Machines and Equipment	Year	Utilization Hours						Paddy Field Area					
		1971	1972		1973		1974	1971	1972		1973		1974
		Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Cultivator Machine	Cibeber	32	96	64	320	352	160	1.0	3.0	8.0	10.0	11.0	5.0
	Gunonghalu				88	48	198				1.2	1.0	4.3
	Telukpucung	480	400	480	496	296		15.0	13.0	15.0	10.5	9.1	
	Tambun				100	531	364				19.5	15.1	22.6
Horizontal Sprayer	Cibeber	5	7	14				2.0	1.0	2.0			
	Gunonghalu				138	60	50				19.0	10.0	8.0
	Telukpucung		16	26	36	43	5		8.0	13.0	16.0	21.5	2.5
	Tambun						108						54.0
Powered Sprayer	Cibeber	80	72	96	96	72	72	10.0	9.0	12.0	12.0	9.0	9.0
Hand Sprayer	Cibeber	70	84	270	270	270	270	5.0	6.0	15.0	15.0	15.0	15.0
	Telukpucung	4	12	19	20	26	30	0.5	1.8	2.3	3.0	3.7	4.1
Weeder	Cibeber	18	50	400	400	400	400	3.0	3.5	20.0	20.0	20.0	20.0
	Gunonghalu												
	Telukpucung	25	23	24	28	24	21	1.4	2.3	2.2	2.8	1.2	1.6
	Tambun				96	168	128				15.0	28.0	21.0
Mist Blower	Cibeber												
	Gunonghalu				60	65	80				10.0	11.0	12.0
	Telukpucung		-	6	-	6	2		18.0	6.0	6.0	1.7	
	Tambun					232	148					232.0	148.0
Pedal Rotary Thresher	Cibeber	7	28	50									
	Gunonghalu				30	35	45				6.0	7.0	9.0
	Telukpucung	21	27	42	27	40	7	0.3	0.5	0.9	0.5	2.4	0.2
	Tambun				61	102	90				11.0	17.0	15.0
Powered Thresher	Telukpucung					126	42					7.2	0.4
Winnower	Cibeber	12	42	80									
	Telukpucung			49	70					1.3	1.8		
Sickle	Cibeber	20	40	50	20	20	20	1.0	2.0	2.5	1.0	1.0	1.0
	Gunonghalu				18	25	84				3.0	3.5	12.0
	Telukpucung	2	3	3	2	2	0.1	0.1	0.6	0.1	0.1	0.1	0.03
	Tambun				72	198	158				18.0	49.5	39.5
Generator	Cibeber	25	100	125	24	10	48						
	Telukpucung		21	196	28	28	28						
	Tambun					42	60						
Balance	Telukpucung	2	1	12	49	16	26						
	Tambun					15	15						
Pump	Telukpucung		40	72	48	16	16		50.0	90.0	60.0	20.0	-
Cut-in Engine	"	8		30	18								
Soil Analyzer	"			2		4	8						
Moisture Meter	"	8	9	18	22	23	9						
Calculating Machine	"	14	20	26	8	7	1						

Notes: 1. This table was prepared for comparison with the previous table which shows the facilities available at respective centers.

2. Full-scale utilization started drom 1973 at most centers.

3. Utilization of machines and equipment should be reviewed in relation to the training of machine operators.

4. Expansion of the paddy field area is slow relative to the increase of the utilization hours.

II. Agriculture in the Two Surveyed Kabupatens

1. Farmland Area

Item / Kabupaten	Acreage (Unit : ha)				Ratio (Unit : %)			
	Paddy Field	Upland Field	Others	Total	Paddy Field	Upland Field	Others	Total
Cianjur	54,000	80,000	60,000	194,000	27.84	41.24	30.93	100.00
Bekasi	87,901	40,993	25,172	159,996	54.94	25.62	15.73	100.00

2. Number of Farm Households by Operational Holding

Kabupaten / Item		Less than 30 a	30 ∿ 50	50 ∿ 70	70 ∿ 100	100 ∿ 150	150 ∿ 200	More than 200 a	Total
Number of Farm House	Cianjur	26,400	88,000	26,400	17,600	7,040	7,040	3,520	176,000
	Bekasi	39,963	28,388	15,848	26,596	11,300	6,890	8,820	137,805
Ratio	Cianjur	15.00	50.00	15.00	10.00	4.00	4.00	2.00	100.00
	Bekasi	29.00	20.60	11.50	19.30	8.20	5.00	6.40	100.00

3. Planted Area and Production of Major Crops

Crop / Kabupaten		Paddy	Maize	Cassava	Sweet Potato	Ground-nut	Soybeans	Sprouting Beans	Paddy Cropping Ratio (%)
Planted Area	Cianjur	93,684	7,238	16,492	4,566	5,653			173.49
	Bekasi	133,872	2,139	2,829	3,158	1,427	201	144	152.30
Production	Cianjur	367,000	9,783	211,153	25,201	6,769			Unit: ha for area and t for production
	Bekasi	536,633	10,780	21,247	18,846	2,194	155	149	
Yield per Unit Area	Cianjur	3.92	1.35	12.80	5.52	1.20			
	Bekasi	4.01	5.04	7.51	5.97	1.54	0.77	1.03	

Notes: 1. The paddy field acreage in Kabupaten Bekasi is greater than that in Kabupaten Cianjur. However, Kabupaten Bekasi is faced with many problems related to upland fields and other farmland areas because its paddy field ratio is no larger than 55%.

2. About 50% of all farm households have an operational holding of less than 50 a in both Kabupatens, but the ratio of large holders is higher in Kabupaten Bekasi.

3. Fairly clear differences can be seen in the main upland crops grown in the two Kabupatens. Specifically, cassava and sweet potato are the main crops in Cianjur, whereas maize is the most important upland crop in Bekasi.

III. Achievements of Extension Activities in Each District

1. Secular Changes of Total Paddy Field Area

District \ Year		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Kabupaten Cianjur	Cibeber Center District	13,111	13,115	13,115	13,122	13,126	13,132	13,132	13,132	13,132	13,132	13,132	13,132	13,132
	Gunonghalu Center District	10,449	13,064	11,850	13,062	11,250	13,062	11,650	13,062	11,625	13,062	11,755	13,062	11,755
Kabupaten Bekasi	Telukpucung Center District			8,689	15,345	1,737	17,742	7,570	16,322	6,430	17,568	10,842	17,082	
	Tambun Center District	5,367	14,846	5,310	15,040	3,570	15,144	4,760	15,099	4,821	15,499	9,086	16,436	9,880

Notes: 1. In Cibeber Center district of Kabupaten Cianjur, virtually no seasonal difference can be observed in the cropping ratio. In Gunonghalu Center district of the same Kabupaten, the difference is also as small as about 1,000 ha.

2. In the two districts of Kabupaten Bekasi, the seasonal difference in the cropping ratio is quite large. Compared with the wet season cropping, the average dry season cropping ratio is 42% in Telukpucung Center district and 36% in Tambun Center district.

3. Double cropping can be carried out in almost the whole area of the two districts in Kabupaten Cianjur. As for Kabupaten Bekasi, it is estimated that double cropping is possible in about 40% of the total paddy field area. The large annual fluctuation of cropping ratio in this Kabupaten indicates the presence of irrigation problems.

2. Secular Changes in the Number of Paddy Growing Farm Households

Item \ Year		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Cibeber District	Less than 30 a	23,596	23,604	23,604	23,619	23,627	23,637	23,637	23,637	23,637	23,637	23,637	23,637	23,637
	30 ∿ 50	5,899	5,901	5,901	5,904	5,906	5,409	5,909	5,909	5,909	5,909	5,909	5,909	5,909
	50 ∿ 70	3,015	3,862	3,934	4,105	4,815	4,919	4,939	4,939	4,939	4,939	4,939	4,939	4,939
	70 ∿100	2,889	3,001	3,115	3,268	3,996	4,185	4,200	4,200	4,200	4,200	4,200	4,200	4,200
	100 ∿150	1,458	1,966	2,350	2,850	3,007	3,500	3,939	3,939	3,939	3,939	3,939	3,939	3,939
	150 ∿200	1,174	1,180	1,180	1,181	1,182	1,181	1,181	1,181	1,181	1,181	1,181	1,181	1,181
	More than 200 a	393	393	393	393	393	394	394	394	394	394	394	394	394
	Total	36,050	39,907	40,477	41,320	42,926	43,724	44,199	44,199	44,199	44,199	44,199	44,199	44,199
	Average Holding per Household	0.36	0.33	0.32	0.32	0.31	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300

Item	Year	1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Gunonghalu District	Less than 30 a	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480
	30 ∿ 50	11,600	11,600	11,600	11,600	11,600	11,600	11,600	11,600	11,600	11,600	11,600	11,600	11,600
	50 ∿ 70	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480	3,480
	70 ∿100	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320
	100 ∿150	920	920	920	920	920	920	920	920	920	920	920	920	920
	150 ∿200	928	928	928	928	928	928	928	928	928	928	928	928	928
	More than 200 a	464	464	464	464	464	464	464	464	464	464	464	464	464
	Total	23,192	23,192	23,192	23,192	23,192	23,192	23,192	23,192	23,192	23,192	23,192	23,192	23,192
	Average Holding per Household	0.45	0.56	0.51	0.56	0.48	0.56	0.50	0.56	0.50	0.56	0.51	0.56	0.51
Telukpucung District	Less than 30 a	13,692	13,837	13,987	14,035	14,284	14,433	14,589	14,730	14,879	15,037	15,179	15,339	15,474
	30 ∿ 50	9,440	9,503	9,648	9,748	9,851	9,954	10,856	13,959	10,964	10,364	10,466	10,579	10,676
	50 ∿ 70	5,428	5,487	5,547	5,605	5,664	5,723	5,787	6,848	5,900	5,959	6,182	6,087	6,126
	70 ∿100	8,910	9,909	9,208	4,673	9,586	9,696	9,705	5,165	9,952	10,832	10,106	10,559	11,298
	100 ∿150	3,877	3,913	3,955	3,997	4,739	4,989	4,123	3,569	4,267	3,249	4,891	4,332	4,475
	150 ∿200	2,360	2,486	2,981	2,457	2,463	2,488	2,514	4,743	3,565	2,591	2,687	2,644	2,668
	More than 200 a	2,497	2,582	2,694	2,638	2,660	2,687	2,715	2,782	2,770	2,798	2,825	2,856	2,882
	Total	47,204	47,717	48,230	48,793	49,257	49,770	50,283	50,797	51,307	51,820	51,333	52,895	53,559
	Average Holding per Household			0.18	0.31	0.04	0.36	0.15	0.32	0.13	0.34	0.21	0.32	
Tambun District	Less than 30 a	9,081	9,019	9,109	9,200	9,291	9,384	9,427	9,571	9,666	9,764	9,860	9,959	9,019
	30 ∿ 50	6,451	6,407	6,470	6,535	6,600	6,661	6,732	6,799	6,866	6,935	7,004	7,074	6,407
	50 ∿ 70	3,601	3,567	3,612	3,648	3,684	3,721	3,738	3,795	3,833	3,871	3,910	3,949	3,567
	70 ∿100	5,935	6,002	6,062	6,122	6,183	6,245	6,307	6,370	6,433	6,497	6,562	6,628	6,002
	100 ∿150	2,521	2,550	2,575	2,601	2,627	2,653	2,679	2,706	2,733	2,761	2,788	2,816	2,556
	150 ∿200	1,537	1,555	1,570	1,586	1,601	1,618	1,634	1,532	1,666	1,683	1,700	1,717	1,555
	More than 200 a	1,667	1,679	1,696	1,713	1,730	1,747	1,767	1,782	1,800	1,818	1,836	1,854	1,679
	Total	30,793	30,779	31,094	31,405	31,716	32,029	32,284	32,555	32,997	33,329	33,660	33,997	30,785
	Average Holding per Household	0.17	0.48	0.17	0.48	0.11	0.47	0.15	0.46	0.15	0.47	0.27	0.48	0.32

3. Class Structure of Farm Households by Operational Holding (1974)

Unit: %

District \ Class		Less than 30 a	30 ∿ 50	50 ∿ 70	70 ∿ 100	100 ∿ 150	150 ∿ 200	More than 200 a	Total
Kabupaten Cianjur	Total Kabupaten	15.00	50.00	15.00	10.00	4.00	4.00	2.00	100.00
	Cibeber District	53.48	13.37	11.17	9.50	8.91	2.67	0.89	100.00
	Gunonghalu District	15.00	50.00	15.00	10.00	3.97	4.00	2.00	100.00
Kabupaten Bekasi	Total Kabupaten	29.00	20.60	11.50	19.30	8.20	5.00	6.40	100.00
	Telukpucung District	28.89	19.93	11.44	21.10	8.36	4.98	5.18	100.00
	Tambun District	29.30	20.81	11.59	19.50	8.30	5.05	5.45	100.00

4. Operational Holding per Farm Household

Farmland / Kabupaten	Paddy Field	Upland Field	Others	Total
Cianjur	0.31	0.45	0.34	1.10
Bekasi	0.63	0.30	0.18	1.16

5. Past Establishment and Operation of Demonstration Farms

Item	Year	1970	1971		1972		1973		1974
		Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Cibeber District	Number of Dem-Farms	1	1	3	5	9	10	10	11
	Area (ha)	3.0	3.0	9.0	12.0	24.0	27.0	27.0	30.0
	Yield per ha (t)	6.0	6.0	6.0	6.3	6.5	6.3	6.3	6.5
	Number of Operating Farm Households	20	20	66	89	159	168	168	178
Gunonghalu District	Number of Dem-Farms					1	1	3	6
	Area (ha)					3.0	2.25	8.7	15.01
	Yield per ha (t)					6.4	6.0	6.2	6.3
	Number of Operating Farm Households					14	13	38	58
Telukpucung District	Number of Dem-Farms			2	5	8	10	10	12
	Area (ha)			6.0	93.1	150.0	178.5	182.5	196.2
	Yield per ha (t)			4.9	4.9	7.4	5.9	5.4	-
	Number of Operating Farm Households			30	85	119	135	139	150
Tambun District	Number of Dem-Farms			1	1	2	4	6	7
	Area (ha)			3.0	3.0	5.6	40.0	46.7	54.2
	Yield per ha (t)			4.3	4.0	6.6	6.2	5.6	4.3
	Number of Operating Farm Households			11	11	44	58	75	86
Average Area per Dem-Farm (ha)	Cibeber	3.0	3.0	3.0	2.4	2.7	2.7	2.7	2.7
	Gunonghalu					3.0	2.3	2.9	2.5
	Telukpucung			3.0	18.6	18.8	17.9	17.9	16.4
	Tambun			3.0	3.0	2.8	10.0	7.8	7.7
Average Area per Dem-Farm (ha)	Cibeber	20.0	20.0	22.0	17.8	17.7	16.8	16.8	16.2
	Gunonghalu					14.0	13.0	12.7	9.7
	Telukpucung			15.0	17.0	14.9	13.5	13.9	12.5
	Tambun			11.0	11.0	22.0	14.5	12.5	12.3

Notes: 1. The technical extension system called Cihea method which aims at diffusing improved techniques by the establishment and operation of demonstration farms is put in practice by all the four extension centers.

2. In Cihea area, demonstration farms cover more than 30% of both the total famland area and total number of farm households. In the case of ordinary extension activities, however, demonstration farms cover about 0.2% of the total farmland area and about 0.3% of the total number of farm households.

3. In all the four districts, the area and number of farm households per demonstration farm are both smaller than in Cihea area.

4. An attempt to attain a coverage comparable to the case of Cihea is impractical because it will require 600 cropping seasons if the establishment of demonstration farms proceeds at the present pace.

5. Accordingly, it will be necessary to establish new demonstration farms in such a way that promises to produce spill-out effect on the surrounding areas. It will also be required to device and implement an extension system not resorting to the operation of demonstration farms.

6. Secular Changes of Average Yield of Paddy

Unit: t/ha

Item		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Improved Varieties	Cibeber	3.5	3.5	3.8	3.8	4.5	4.5	4.5	4.0	4.2	4.5	4.2	5.8	6.0
	Gunonghalu	3.8	4.0	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.5	5.5	5.5	6.0
	Telukpucung			2.7	2.6	2.9	3.4	3.8	4.5	4.2	5.2	5.4	6.1	
	Tambun			1.6	2.8	2.8	3.3	4.2	3.3	3.4	5.4	5.4		
Local Varieties	Cibeber	2.5	3.0	3.0	3.0	4.0	3.9	4.5	4.5	5.0	5.0	4.5	5.5	6.0
	Gunonghalu	3.0	3.5	3.6	3.6	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.5	5.6
	Telukpucung			1.2	1.4	2.7	2.3	3.7	3.1	2.8	3.6	3.9	3.9	
	Tambun			1.0	2.0	1.1	2.4	2.9	2.0	3.3	3.5	3.6		
Average	Cibeber	3.0	3.3	3.4	3.4	4.3	4.0	4.3	4.0	4.5	4.6	4.2	5.5	5.8
	Gunonghalu	3.4	3.8	4.1	4.1	4.5	4.5	4.5	4.5	4.8	5.3	5.3	5.7	5.8
	Telukpucung			2.0	2.1	2.3	2.9	3.6	3.0	3.6	4.5	4.5	4.9	
	Tambun			1.4	2.2	2.5	2.6	3.9	2.6	3.3	4.5	4.5		

Notes: 1. As a whole, the average yield in all the four districts has been on the upward trend, but its growth rate is far lower than in Cihea area.

2. The 1970 dry season recorded an appreciable yield increase. This is assignable to the input of various equipment and materials from BIMAS rather than to the operation of demonstration farms or extension centers.

3. No yield change was recorded in the 1971 wet season when the extension activities began to be conducted on a full scale and demonstration farms were established.

4. In all the four districts, the yield growth rate of local varieties is higher than that of improved varieties. Specially in Kabupaten Cianjur, local varieties have kept on producing a higher yield than improved varieties.

7. Achievements of Extension Activities by Item

(1) Planted Area of Improved Varieties

Item		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Planted Area (ha)	Cibeber	5,761	5,902	6,397	6,547	7,033	7,213	7,669	7,856	8,303	8,500	8,821	8,947	9,265
	Gunonghalu	6,269	7,837	7,701	8,467	7,875	9,143	9,320	10,450	9,881	11,103	10,579	11,755	
	Telukpucung			5,038	6,234	700	8,290	5,243	7,834	2,979	7,369	6,912	5,401	5,456
	Tambun			4,177	4,770	3,005	6,162	3,436	5,779	2,966	8,673	6,729	5,793	5,056
Planted Area/ Total Paddy Field Area %	Cibeber	43.94	45.00	48.78	49.89	53.58	54.93	58.40	59.82	63.22	64.73	67.17	68.13	70.55
	Gunonghalu	60.00	59.99	64.99	64.82	70.00	70.00	80.00	80.00	85.00	85.00	90.00	90.00	
	Telukpucung			57.98	40.63	40.30	46.73	69.26	48.00	46.33	41.95	63.75	31.62	
	Tambun			78.66	31.72	84.17	40.69	72.18	38.27	61.52	55.96	74.06	35.25	51.18
Increase/ Decrease (Base Year: 1970)	Cibeber	0.82	0.81	0.91	0.91	1.00	1.00	1.09	1.09	1.18	1.18	1.25	1.24	1.32
	Gunonghalu	0.80	0.86	0.98	0.93	1.00	1.00	1.18	1.14	1.25	1.21	1.34	1.29	
	Telukpucung			(1.00) 7.20	0.75	(0.14) 1.00	1.00	(1.04) 7.49	0.94	(0.59) 4.26	0.89	(1.37) 9.61	0.65	(1.09) 7.79
	Tambun			1.39	0.77	1.00	1.00	1.14	0.94	0.99	1.41	2.24	0.94	1.68

(2) Number of Farm Households Growing Improved Varieties

District		1968 Dry Season	1968 Wet Season	1969 Dry Season	1969 Wet Season	1970 Dry Season	1970 Wet Season	1971 Dry Season	1971 Wer Season	1972 Dry Season	1972 Wet Season	1973 Dry Season	1973 Wet Season	1974 Dry Season
Number of Farm Households	Cibeber	17,283	17,706	19,187	19,753	21,115	21,637	23,007	23,670	24,918	25,500	29,321	31,456	32,798
	Gunonghalu	18,807	23,511	23,106	25,401	23,625	27,427	27,960	31,350	29,643	33,309	31,737	35,265	
	Telukpucung			7,179	8,906	1,000	11,843	7,490	11,191	4,256	10,527	9,877	7,716	7,794
	Tambun			5,967	6,824	4,292	8,802	4,907	8,255	4,337	12,332	9,612	8,276	7,223
Farm Households Growing Improved Varieties/ Total No. or Farm Households(%)	Cibeber	47.94	44.37	47.40	47.80	49.19	49.45	52.05	53.55	56.38	57.69	66.34	71.17	74.21
	Gunonghalu	27.02	33.78	33.19	36.50	33.94	39.41	40.17	45.04	42.59	47.86	45.60	50.67	
	Telukpucung			14.88	18.25	2.03	23.80	14.90	22.03	8.30	20.31	19.24	14.59	13.49
	Tambun			19.19	21.73	13.53	27.48	15.18	25.36	13.14	37.00	28.56	24.34	23.46
Increase/ Decrease (Base Year: 1970)	Cibeber	82	82	91	91	100	100	109	109	118	118	139	145	155
	Gunonghalu	80	86	98	93	100	100	118	114	125	121	134	129	
	Telukpucung			(100) 718	75	(14) 100	100	(104) 749	94	(59) 426	89	(138) 988	65	(109) 774
	Tambun			139	78	100	100	114	94	101	140	224	94	168

Notes: 1. In Kabupaten Cianjur, cultivation of improved varieties has been on the increase in terms of both planted area and number of farm households. In Bekasi, however, the growth has been unstable and as a whole, a downward trend is observed.

2. The smooth upward trend in Kabupaten Cianjur is ascribable to the absence of seasonal fluctuation of cropping ratio. In Kabupaten Bekasi, the cropping ratio of improved varieties rises in the dry season consequent upon the decline of the overall cropping ratio and becomes low in the wet season relative to the overall planted area. This suggests that there exists the problem of seed rice volume.

3. The ratio of planted area is higher than that of farm households in all districts excepting Cibeber, which indicates that the planted area per farm household is large and improved varieties are accepted by large holders.

4. The above fact points to a number of technical problems arising from the relationship between the traditional cultural practices and improved varieties or between the irrigation facilities and improved varieties. It is clear that solution for these problems, which is indispensable for future extension of improved varieties, cannot be brought by the mere availability of sufficient quantities of seed rice. Results of past activities for introducing improved varieties are graphically illustrated on page 123.

(3) Fertilized Paddy Field Area

District		1968 Dry Season	1968 Wet Season	1969 Dry Season	1969 Wet Season	1970 Dry Season	1970 Wet Season	1971 Dry Season	1971 Wet Season	1972 Dry Season	1972 Wet Season	1973 Dry Season	1973 Wet Season	1974 Dry Season
Fertilized Paddy Field Area (ha)	Cibeber	6,949	7,879	7,528	8,538	8,107	9,194	8,685	9,849	9,264	10,505	9,843	11,818	10,923
	Gunonghalu	6,791	8,490	9,295	9,534	8,437	9,796	9,320	10,450	10,625	11,755	10,570	12,409	
	Telukpucung			5,038	6,234	700	8,290	5,243	7,834	2,979	7,369	6,912	5,401	5,456
	Tambun			4,177	4,770	3,005	6,162	3,436	5,779	2,966	8,633	6,729	5,793	2,056
Fertilized Area/Total Paddy Field Area (%)	Cibeber	53.00	60.08	57.40	65.07	61.76	70.01	66.14	75.00	70.55	80.00	74.95	89.99	83.18
	Gunonghalu	64.99	64.99	78.44	72.99	75.00	74.99	80.00	80.00	91.40	89.99	89.92	95.00	
	Telukpucung			57.98	40.63	40.30	46.73	69.26	48.00	46.33	41.95	63.75	31.62	
	Tambun			78.66	31.72	84.17	40.69	72.18	51.88	61.52	55.70	74.08	35.25	
Increase/ Decrease (Base Year: 1970)	Cibeber	86	86	93	93	100	100	107	107	114	114	121	129	135
	Gunonghalu	81	87	110	97	100	100	111	107	126	120	125	127	
	Telukpucung			(100) 720	75	(14) 100	100	(104) 749	94	(59) 426	89	(137) 987	65	(108) 779
	Tambun			139	77	100	100	114	94	99	140	224	94	68

(4) Number of Farm Households Applying Fertilizers

District	Year	1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Number of Farm Households	Cibeber	20,847	23,535	22,926	26,609	25,103	27,584	26,835	29,547	29,012	33,113	33,011	38,989	41,392
	Gunonghalu	20,373	25,430	27,885	28,602	25,310	29,388	27,960	31,350	31,380	35,265	31,710	37,227	
	Telukpucung			7,179	8,906	1,000	11,843	7,490	11,191	4,256	10,527	9,877	7,716	7,794
	Tambun			5,967	6,824	4,292	8,802	4,909	8,255	4,337	12,332	9,612	8,276	2,957
Fertilizer Applying Farm Households/Total Number of Farm Households	Cibeber	57.83	58.97	56.64	64.40	58.48	63.09	60.71	66.85	65.64	74.92	74.69	88.21	93.65
	Gunonghalu	87.81	109.61	120.19	123.28	109.09	126.67	120.52	135.78	135.26	152.00	136.68	160.46	
	Telukpucung			14.88	18.25	2.03	23.80	14.90	22.03	8.03	20.31	19.24	14.59	13.49
	Tambun			19.19	21.73	13.53	27.48	15.18	25.36	13.14	37.00	28.56	24.34	9.61
Increase/ Decrease (Base Year: 1970)	Cibeber	83	85	91	96	100	100	107	107	116	120	136	141	165
	Gunonghalu	80	87	110	97	100	100	110	107	124	120	125	127	
	Telukpucung			(100) 718	75	(14) 100	100	(104) 749	94	(59) 426	89	(138) 988	65	(109) 779
	Tambun			139	78	100	100	114	94	101	140	224	94	69

Notes:
1. In the two extension center districts of Kabupaten Cianjur, the fertilizer application has pursued a smooth upward trend in terms of both area and number of farm households. In addition, the ratio of farm households in higher than that of area in both districts, which indicates that the fertilized area per farm household is quite small. Hence, it can be said that the fertilization practice is followed by farmers of all classes.
2. In the two districts of Kabupaten Bekasi, on the other hand, the extension of fertilization practice depicts an unstable curve which indicates that the fertilized area in the dry season is larger than in the wet season, but this gap tends to be narrowed with the lapse of years. In both districts, the ratio of area is higher than that of farm households, which indicates that the fertilized area per farm household is large and that this practice is more widely followed by large holders than by smaller holders.
3. The ratios of fertilized area and fertilizer applying farm households in Kabupaten Cianjur have been higher for many years than in Kabupaten Bekasi. Hence, it may as well be said Cianjur is an advanced paddy producing area.
4. It is to be noted that the extension of the fertilization practice has been aided by the input of equipment and materials from BIMAS.
5. Results of past activities for promoting the fertilization practice are graphically illustrated on page 124.

(5) Area under Plant Protection

District	Year	1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Area (ha)	Cibeber	3,474	3,340	4,053	4,596	4,633	5,252	4,632	7,880	7,000	7,231	8,995	9,192	8,117
	Gunonghalu	4,702	5,882	5,925	6,531	6,750	7,837	7,572	8,490	8,137	9,143	8,816	9,796	
	Telukpucung	824	1,627	5,403	7,145	804	9,235	5,477	8,683	3,324	8,389	7,305	6,573	
	Tambun	536	1,484	4,290	5,797	3,060	6,960	3,568	6,708	3,151	9,318	6,964	6,857	1,171
Protected Area/Total Area (%)	Cibeber	26.50	25.47	30.90	35.03	35.30	39.99	35.27	60.01	53.30	55.06	68.50	70.00	61.81
	Gunonghalu	45.00	45.02	50.00	50.00	60.00	60.00	65.00	65.00	70.00	70.00	75.00	75.00	
	Telukpucung			62.18	46.56	46.29	52.05	72.35	53.20	51.70	47.75	67.38	38.48	
	Tambun	9.99	10.00	80.79	38.54	85.71	45.96	74.96	44.43	65.36	60.12	76.65	41.72	11.85
Increase/ Decrease (Base Year: 1970)	Cibeber	75	64	87	88	100	100	100	150	151	138	194	175	175
	Gunonghalu	70	75	88	83	100	100	112	108	121	117	131	125	
	Telukpucung	(15) 102	18	(100) 672	77	(15) 100	100	(101) 681	94	(62) 413	91	(135) 909	71	
	Tambun	18	21	140	83	100	100	117	96	103	134	224	99	38

(6) Number of Farm Households Practising Plant Protection

District \ Year		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Number of Farm Households	Cibeber	10,423	10,020	12,157	13,785	13,900	15,756	13,896	23,642	22,331	23,116	25,006	27,113	29,392
	Gunonghalu	14,106	17,746	17,775	19,593	20,250	23,511	22,716	25,476	24,401	27,429	26,448	29,148	
	Telukpucung	1,177	2,324	7,719	1,027	1,147	13,193	7,824	12,404	4,749	11,984	10,436	9,390	
	Tambun	765	2,170	6,130	8,281	4,100	9,583	5,097	9,583	4,501	12,311	9,948	9,705	1,673
Farm Households Practising Plant Protection/ Total No. of Farm Households	Cibeber	28.94	25.11	30.03	33.36	32.38	36.04	31.44	53.49	50.52	52.30	56.58	61.34	66.50
	Gunonghalu	60.80	76.06	76.62	84.45	87.28	101.34	97.91	109.81	105.18	118.23	114.00	125.64	
	Telukpucung	2.49	4.87	16.00	2.10	2.33	26.51	15.56	24.42	9.26	23.13	20.33	17.75	
	Tambun	2.48	7.05	19.71	26.37	12.93	29.92	15.79	29.44	13.64	36.93	29.55	28.81	4.43
Increase/ Decrease (Base Year: 1970)	Cibeber	75	64	87	87	100	100	100	150	161	147	180	172	211
	Gunonghalu	70	75	88	83	100	100	112	108	120	117	131	124	
	Telukpucung	(15) 103	18	(100) 673	63	(15) 100	100	(101) 682	94	(62) 414	91	(135) 910	71	
	Tambun	19	23	150	86	100	100	124	100	110	128	243	102	41

Notes: 1. Extension of disease and insect pest control measures shows a tendency identical to that of the fertilization practice. This means that the plant protection and fertilization have been integrated in the course of their extension, which is perhaps assignable to the popularization of the equipment and materials from BIMAS.

2. Gunonghalu Center district is conspicuously advanced in disease and insect pest control.

3. Results of pest activities for extending disease and insect pest control practices are graphically illustrated on page 125.

(7) Area under Weeder Application

District \ Year		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Area (ha)	Cibeber	4,400	5,200	4,596	5,780	4,980	5,928	5,300	6,200	5,430	6,580	6,680	7,800	6,500
	Gunonghalu	5,225	6,531	6,517	7,184	6,750	7,837	8,155	9,143	9,300	10,440	9,791	11,102	
	Telukpucung								25	50	25	26	24	21
	Tambun											15	28	21
Area under Weeder Application/ Total Paddy Field Area(%)	Cibeber	33.56	39.65	35.04	44.05	37.94	45.14	40.36	47.21	41.35	50.11	50.87	59.40	49.50
	Gunonghalu	50.00	49.99	55.00	55.00	60.00	60.00	70.00	70.00	80.00	79.93	83.29	84.99	
Increase/ Decrease (Base Year: 1970)	Cibeber	88	88	92	98	100	100	106	105	109	111	134	132	131
	Gunonghalu	77	83	97	92	100	100	121	117	138	133	145	142	

(8) Number of Weeder Using Farm Households

District		1968		1969		1970		1971		1972		1973		1974
		Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Number of Farm Households	Cibeber	13,200	15,600	13,680	17,348	14,950	17,900	15,998	18,600	16,230	19,750	20,040	23,930	19,800
	Gunonghalu	15,675	19,593	19,551	21,552	20,150	23,511	24,465	27,429	27,900	31,320	29,373	33,306	
	Telukpucung								26	62	24	20	26	24
	Tambun											21	40	30
Weeder Using Farm Households/Total No. of Farm Households (%)	Cibeber	36.62	39.09	33.80	41.98	34.83	40.94	36.20	42.08	36.72	44.68	45.35	54.14	44.80
	Gunonghalu	67.59	84.48	84.30	92.93	86.88	101.38	105.49	118.27	120.30	135.05	126.65	143.61	
Increase/ Decrease (Base Year: 1970)	Cibeber	88	87	92	97	100	100	107	104	109	110	134	134	132
	Gunonghalu	78	83	97	92	100	100	121	117	138	133	146	142	

(9) Extension of Farming Machines and Equipment

District		Area						Number of Farm Households					
		1971	1972		1973		1974	1971	1972		1973		1974
		Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season
Tiller	Cibeber	1.0	3.0	3.6	6.0	7.5	9.0	2	10	12	15	18	21
	Gunonghalu				1.0	1.0					1	1	
	Telukpucung	15.0	28.5	34.0	39.0	46.0	25.5	14	17	19	22	27	14
	Tambun	5.0	11.0	5.0	19.0	33.0	23.0	16	42	18	72	156	89
Sprayer and Duster	Cibeber	4.2	5.5	6.0	9.0	10.0	15.0	18	26	30	36	45	60
	Gunonghalu				3.0	6.0					15	30	
	Telukpucung	240.0	360.0	400.0	480.0	680.0							
	Tambun	510.0	453.0	532.0	420.0	766.0	678.0	728	643	757	603	1085	968
Sickle	Cibeber	3.0	6.0	9.0	12.0	15.0	18.0	8	26	40	52	65	78
	Gunonghalu				3.0	6.0					15	30	
	Telukpucung	26.0	36.0	42.0	24.0	34.0		30	46	24	35	33	26
	Tambun				18.0	49.0	39.0				31	70	56
Thresher	Cibeber	6.0	3.0	9.0	10.0	11.5	13.0	23	12	29	42	46	52
	Gunonghalu				6.0	9.0					21	24	
	Telukpucung	28.0	28.0	38.0	19.6	38.0	0.15	38	16	11	14	13	9
	Tambun				10.0	17.0	15.0				15	29	22

Notes: 1. At present, the number of machines and equipment available at respective centers sets limits on further extension activities. It is probable that the limit of utilization was reached in 1973 in all districts excluding Gunonghalu. A downward trend is observed in 1974 in all districts.

2. Data of weeder application in Kabupaten Cianjur is considered to involve errors made during the survey.

3. Since the machines are also used for operation of the fields of extension centers, further extension cannot be hoped for with what machines and equipment currently available at respective centers.

PART V. TABULATION FROM INTERVIEWS WITH FARMERS ON THE RESULTS OF PAST EXTENSION ACTIVITIES

I. Questionnaire for Follow-up Survey of Project Achievements and Farmers' Reactions and Response

II. Results of Survey

1. Survey Area and Respondent
   - (1) Survey Area and Number of Respondents
   - (2) Age of Respondents
   - (3) Operational Holding of Respondents
     - A. Paddy Field
     - B. Upland Field
     - C. Other Farmland Area
     - D. Total Operational Holding
   - (4) Respondents' Family Members and Labour Force
   - (5) Number of Livestock Raising Respondents
2. Changes in Planted Area of Paddy
3. Extension of Improved Varieties
4. Respondents' Participation in BIMAS
5. Respondents' Farm Work
6. Fertilizer Applying Respondents
7. Chemicals Applying Respondents
8. Yield of Paddy per ha
9. Respondents' Participation in Kelompok Tani
10. Utilization of Demonstration Farms by Respondents
11. Utilization of Extension Centers by Respondents
12. Method and Leader of Extension Activities by Item

13. Item-wise Average Number of Extension Methods per Respondent

14. Ratios of Respective Extension Methods in Percentages

15. Item-wise Ratios of Extension Methods in Percentages

16. Free Answer Column

III. Graphic Illustration of Survey Data

1. Composition of Farmers by Operational Holding

2. Paddy Field Acreage per Farm Household in Each Survey Area

3. Secular Changes in Plated Area of Paddy in Each Survey Area

4. Changes in the Number of Demonstration Farms and Yield

5. Increase of High Yielding Farm Households (more than 6 t) as Disclosed by Interviews

6. Past Extension Trend of Improved Varieties

7. Past Extension Trend of Fertilizer Application Practice

8. Past Extension Trend of Disease and Insect Pest Control Practice

9. Past Trend of Farm Households Practising Mechanized Farming (Based on Interviews)

10. Past Trend of Kelompok Participating Farm Households (Based on Interveiws)

11. Past Trend of Farm Households Aware of Demonstration Farms (Based on Interviews)

12. Past Trend of Farm Households Utilizing Extension Centers (Based on Interviews)

I. Questionnaire for Follow-up Survey of Project Achievements and Farmers' Reactions and Response

(1) Objective

The objective of this survey is to follow up the extension activities which were conducted under the West Java Food Production Increase Project in privately owned land of Cihea area as well as in the seven surrounding Kabupatens by extension centers in order to study the farmers' reactions and response and thereby produce the data with which to evaluate the achievements of past extension activities.

(2) Respondent Farmer

Cihea area — Dem-farm participants _____ persons

Non-participants _____ persons

Seven surrounding Kabupatens (random samples)

Well equipped old extension centers _____ persons

Poorly equipped old extension centers _____ persons

Well equipped new extension centers _____ persons

Poorly equipped new extension centers _____ persons

(3) Questions Asked

1) What is your operational holding ? Please tell me the acreage of each kind of farmland area you cultivate.

Paddy field ( ) Upland field ( )

Others ( )

2) Please tell me the numbers of your family members and working members by sex.

Family members (Male _____ Female _____)

Working members (Male _____ Female _____)

3) What is your age, please ?

4) Let me know your recent planted area of paddy by cropping season.

	70	71	72	73	74
Wet	a	a	a	a	a
Dry	a	a	a	a	a

5) Let me ask a few questions about the paddy variety you are growing now.

1. What is the name of the variety and its planted area ?
2. How long have you been cultivating that variety ?
3. What made you choose that variety ? (Cite a number of reasons and check the right one with a circle)

6) Have you ever used credit from BIMAS ?

1. When was it ?
2. Has it been refunded yet ?

   Yes. Not yet. Going to pay back from now.

3. How did you come to know about the BIMAS credit ?

7) Now, about the fertilizer you are using -

1. Tell me the name of the fertilizer and the dosage of its application.
2. When did you start using it ?
3. How did you come to know about that fertilizer ?

8) A few questions about the type of agriculture you are engaged in -

1. What is the name of agriculture you are engaged in and what is the scale of its management ?

2. When did you start it ?

3. How did you come to know about it ?

9) Has your yield of paddy changed in any way over the past years ?

10) About the Kelompok you belong to -

1. What are the name and membership of your Kelompok ?

2. When did you join it ? and how often does your Kelompok conduct joint operation each year ?

3. Who recommended you to joint it ?

11) Do you know that there is a demonstration farm in this neighbourhood ?

I'm one of its participants: I know I don't know

12) Do you know anything about the extension center ?

Have visited it once. Know about it but never visited.

Don't know.

II. Results of Survey

1. Survey Area and Respondent

(1) Survey Area and Number of Respondents

Item \ Survey Area	Cihea	Kabupaten Cianjur			Kabupaten Bekasi			Total
		Cibeber	Gunonghalu	Sub-total	Teluk-pucung	Tambun	Sub-total	
Demo-farm Operator	25	10	10	20	10	10	20	65
Non-demo-farm Operator	25	10	10	20	10	10	20	65
Total	50	20	20	40	20	20	40	130

Notes: 1. This survey was conducted by extension workers who interviewed individual respondents. The Japanese survey team spent a day at each extension center for observation and advice.

2. Recruiting of respondnets was left to the Indonesian side, except that it was requested that the respondents be comprised of both dem-farm operators and non-operators.

(2) Age of Respondents

Area / Age	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunong-halu		Sub-total			Teluk-pucung		Tambun		Sub-total					
	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
year 20 ∿ 24			1			1	1	1	2	1		1	1	2	1	3	3	2	5
25 ∿ 29																			
30 ∿ 34		6	1			2	1	2	3	2		1	1	3	1	4	4	9	13
35 ∿ 39	7	5	4	1	3	2	7	3	10	1		1	2	2	2	4	16	10	26
40 ∿ 44	8	3		2	1	2	1	4	5	2	1	3	2	5	3	8	14	10	24
45 ∿ 49	5	3	1	3	1		2	3	5	2	3	2	3	4	6	10	11	12	23
50 ∿ 54	2	6	1	6	1	3	3	4	7	1	5	2	1	3	6	9	8	16	24
55 ∿ 59	2			2	1		1	2	3	1	1			1	1	2	4	3	7
Older than 60 years		2	2	1	1		3	1	4								3	3	6
Unknown	1				1		1		1								2		2
Total	25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130
Average	42.5	42.08	41.90	49.00	46.78	39.40	44.21	44.20	44.20	40.60	49.10	40.2	39.50	40.40	44.30	42.35	42.35	43.42	42.89

Notes: 1. Respondents were so recruited that their age would be uniformly distributed within the age bracket of 30 to 50 years, so that most of them were the managers of agricultural operation.

2. Dem-farm operators were somewhat younger than non-operators.

(3) Operational Holding of Respondents

A. Paddy Field

Survey Area / Acreage	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Less than 10 a																			
10 ∿ 30	3	8	4			1	7	1	8								10	9	19
30 ∿ 50	3	2	3		3	7	7	7	14	1		2		3		3	13	9	22
50 ∿ 70	9	11		2	4			2	2	3		3		6		6	15	13	28
70 ∿100	3	3	1	2		2	1	4	5	1				1		1	5	7	12
100 ∿150	5		1	3			4	3	7	2	2	1	2	3	4	7	12	7	19
150 ∿200		1		1	3			1	1	2	1		3	2	4	6	2	6	8
200 ∿250	1		1	2			1	2	3	1	1	1	2	2	3	5	4	5	9
250 ∿300	1										1		2		3	3	1	3	4
More than 300 a											5	3	1	3	6	9	3	6	9
Total	25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130
Average	76.09	49.71	61.90	129.00	59.80	50.00	60.40	89.50	75.18	99.70	258.00	173.00	187.00	136.35	222.50	179.43	89.94	115.12	102.53
Respondents Cultivating Only Paddy Field	8	15	3	1	3	4	6	5	11	3	1		4	3	5	8	17	25	42

B. Upland Field

Survey Area / Acreage	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunong-halu		Sub-total			Teluk-pucung		Tambun		Sub-total					
	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Less than 10 a	10	6	2		1	4	3	4	7			2		2		2	15	10	25
10 ∿ 30	4	2	2		2	1	4	1	5		1	5		5	1	6	13	4	17
30 ∿ 50	1		2		1	1	3	1	4		1		1		2	2	4	3	7
50 ∿ 70	1	1	1	1			1	1	2		1		2		3	3	2	5	7
70 ∿ 100											1	1		1	1	2	1	1	2
100 ∿ 150		1		1				1	1		3		1		4	4		6	6
150 ∿ 200				3				3	3									3	3
200 ∿ 250				1				1	1									1	1
250 ∿ 300				1				1	1									1	1
More than 300 a				1				1	1									1	1
Total	16	10	7	8	4	6	11	14	25		7	8	4	8	11	19	35	35	70
Average	11.05	21.67	21.14	175.63	21. 5	12.17	21.27	105.57	68.48		69.29	21.88	57.50	21.88	65.00	46.84	16.74	68.85	42. 79

C. Other Farmland Area (Fruit Garden, Garden Compound, Culture Pond, etc.)

Survey Area / Acreage	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunong-halu		Sub-total			Teluk-pucung		Tambun		Sub-total					
	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Less than 10 a	2			4				4	4	1		2		3		3	5	4	9
10 ∿ 30	2			2	3		3	2	5	3	4	2	1	5	5	10	10	7	17
30 ∿ 50										2				2		2	2		2
50 ∿ 70													1		1	1		1	1
70 ∿ 100													1		1	1		1	1
100 ∿ 150																			
150 ∿ 200										1				1		1	1		1
200 ∿ 250																			
250 ∿ 300																			
More than 300 a																			
Total	4			6	3		3	6	9	7	4	4	3	11	7	18	18	13	31
Average	1.28			3.40	17.67		17.67	3.40	9.67	38.41	17.50	9.25	45.00	27.81	29.29	28.38	21.72	18.39	20.32

D. Total Operational Holding

Survey Area / Acreage	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Less than 10 a																			
10 ∿ 30	3	8	4		1	1	5	1	6								8	9	17
30 ∿ 50	2	1	1		4	6	5	6	11			2		2		2	9	7	16
50 ∿ 70	9	7	1	1			1	1	2	4		2		6		6	16	8	24
70 ∿ 100	4	7	2		2	3	4	3	7			1		1		1	9	10	19
100 ∿ 150	4		1		2		3		3	2	1		2	2	3	5	9	3	12
150 ∿ 200	1	2		1	1		1	1	2	2	1	1	1	3	2	5	5	5	10
200 ∿ 250				2				2	2	1	1	1	3	2	4	6	2	6	8
250 ∿ 300	2		1	3			1	3	4	1			2	1	2	3	4	5	9
More than 300 a				3				3	3		7	3	2	3	9	12	3	12	15
Total	25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130
Average	84.44	58.37	76.70	276.50	73.70	46.30	75.20	161.40	118.30	126.59	313.50	194.20	223.50	160.40	268.50	214.45	104.97	154.73	129.85

Notes:
1. Most of the respondents recruited for the survey in each area were large holders as can be seen from the graphic illustration of the respondents' structure by operational holding and of the paddy field area per respondent shown on page 120.
2. The paddy field ratio shown in the table of farmland acreage (Section II of Part IV, page 120) is not very high. In the case of the respondents, however, the aggregate average of the paddy field ratio is as high as 78.96%.
3. The paddy field ratio of the dem-farm operators is slightly higher than that of the non-operators, the former being 85.68% and the latter 74.40%.
4. The class structure of respondents shows close approximation to that of all farmers in Gunonghalu district. However, the respondents in all other survey areas are large holders. Specially in Kabupaten Bekasi, respondents with a holding of more than 2 ha are the largest in number.
5. 32% of all respondents were exclusive paddy field operators. These respondents were found in larger number among non-dem-farm operators, and they had a larger average holding than dem-farm operators.

(4) Respondents' Family Members and Labour Force

Survey / No. of Family Members \ Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total			
			Cibeber		Gunong-halu		Sub-total			Teluk-pucung		Tambun		Sub-total						
	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total	%
Up to 2		1	1		2	1	3	1	4	1				1		1	4	2	6	4.6
3 ∿ 4	6	5	5	4	1	4	6	8	14	2	1	3	2	5	3	8	17	16	33	25.4
5 ∿ 6	8	12	3	4	3	3	6	7	13	6	2	2	5	8	7	15	22	26	48	36.9
7 ∿ 8	9	5	1	1	4	2	5	3	8	1	5	3	2	4	7	11	18	15	33	25.4
More than 9	2	2		1				1	1		2	2	1	2	3	5	4	6	10	7.7
Total	25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130	100.0
Average	6.16	5.68	4.10	5.20	5.20	4.80	4.65	5.00	4.83	5.10	7.00	6.00	6.10	6.50	6.08	6.08	5.54	5.73	5.63	

Survey / Labour Force (person) \ Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunong-halu		Sub-total			Teluk-pucung		Tambun		Sub-total					
		D. F.	N. D.	D. F	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Male	1	19	13		5	2	8	2	13	15	3	4	4	3	7	7	14	28	33	61
	2	4	8		5	2	1	2	6	8	1	2	2	4	3	6	9	9	20	29
	3	1	3										2	1	2	1	3	3	4	7
	More than 4												2	2	2	2	4	2	2	4
	Total	24	24		10	4	9	4	19	23	4	6	10	10	14	16	30	42	59	101
	Average	1.25	1.52		1.50	1.50	1.11	1.50	1.32	1.35	1.00	1.33	2.40	2.30	2.07	1.94	2.00	1.59	1.59	1.59
Female	1	17	20		7	1	8	1	15	16	4	3	5	5	9	8	17	27	43	70
	2	6	4		1	2		2	1	3			2	1	2	1	3	10	6	16
	3		1										3	3	3	3	6	3	4	7
	More than 4													1		1	1		1	1
	Total	23	25		8	3	8	3	16	19	4	3	10	10	14	13	27	40	54	94
	Average	1.21	1.24		0.90	1.25	0.89	1.25	1.06	1.16	1.00	1.00	1.80	2.00	1.57	1.77	1.67	1.40	1.32	1.35
Total	1	1	1		2	1	1	1	3	4		3				3	3	2	7	9
	2	13	12		3	1	7	1	10	11	3	1		1	3	2	5	17	24	41
	3	8	7		4		1		5	5	1	2	3	3	4	5	9	12	17	29
	4	1	3		1	2		2	1	3			2	2	2	2	4	5	6	11
	More than 5	1	2										5	4	5	4	9	6	6	12
	Total	24	25		10	4	9	4	19	23	4	6	10	10	14	16	30	42	60	102
	Average	2.46	2.76		2.40	2.75	2.00	2.75	2.21	2.30	2.00	2.33	4.20	4.30	3.64	3.38	3.50	2.88	2.75	2.80
No Answer		1	-	10	-	6	1	16	1	17	6	4	-	-	6	4	10	23	5	28

Notes: 1. The average labour force of 2.8 persons is very large. On the average, the dem-farm operators have a larger labour fource than the non-operators.

2. Since most respondents are large holders, it is probable that they employ landless farm labourers. Considering the wages paid to these labours, it is possible that large holders will introduce farm machinery and equipment in future.

3. Although demonstration farms are cultivated by joint operation to a considerable extent, large holders may not find it easy to participate in such collective farming because they need labour force for the operation of their own farms and farmers with surplus labour force meet their need.

(5) Number of Livestock Raising Respondents

Livestock \ Survey Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Respondents Not Raising Liv stock		1	4	1		2	1	2	1	3		1		2		3	3	3	8	12
Cattle											2 (2 heads)	1 (1 head)	2 (4 heads)	1 (1 heads)	4	2	6	4	2	6
Buffalo				3 (3 heads)	1 (2 heads)	1 (1 head)		4	1	5	3 (6 heads)	3 (3 heads)	1 (4 heads)	2 (4 heads)	4	5	9	8	6	14
Sheep and Goat	1	3	2	1			1	1	1	2								4	3	7
	2 ∿ 3	4	6	3	4	2	1	5	5	10	1	1			1	1	2	10	12	22
	4 ∿ 5	1	1		1		1		2	2		1	1		1	1	2	2	4	6
	More than 6	2			2		1		3	3				1		1	1	2	4	6
	Total	10	9	4	7	2	4	6	11	17	1	2	1	1	2	3	5	18	23	41
	Average	3.00	2.44	2.00	4.86	2.50	3.25	2.17	4.27	3.53	3.00	3.50	4.00	40.00	3.50	17.67	10.80	2.78	5.04	4.05
Chicken	1 ∿ 5	9	10	5	3	5	6	10	9	19	7	3	3	3	10	6	16	29	25	54
	6 ∿ 10	5	8	2	2	2	2	4	4	8		2	2	1	2	3	5	11	15	26
	11 ∿ 20	4	3		4	1		1	4	5	2	2	2	3	4	5	9	9	12	21
	More than 21	2			1				1	1		2	2		2	2	4	4	3	7
	Total	20	21	7	10	8	8	15	18	33	9	9	9	7	18	16	34	53	55	108
	Average	10.80	7.14	5.00	10.30	6.38	4.25	5.73	7.61	6.76	9.00	26.44	12.11	9.57	9.56	19.06	14.03	8.94	10.76	9.87
Others (Incl. Duck)	1 ∿ 5	1	1		2	3		3	2	5	2	1		3	2	4	6	6	7	13
	6 ∿ 10	3	1		1				1	1	1	1		1	1	2	3	4	4	8
	11 ∿ 20	2											2		2		2	4		4
	More than 21			1				1		1	1				1		1	2		2
	Total	6	2	1	3	3		4	3	7	4	2	2	4	6	6	12	16	11	27
	Average	9.83	6.50	25.00	4.67	3.67		9.00	4.67	7.14	13.25	4.50	13.50	4.75	13.33	4.67	9.00	10.94	5.00	8.52

Livestock \ Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Raising Patten																			
Cattle + Buffalo + Goat + Chicken + Others										1				1		1	1		1
Cattle + Chicken										1	1	2	1	3	2	5	3	2	5
Buffalo + Goat + Chicken				1	1		1	1	2		1		1		2	2	1	3	4
Buffalo + Chicken + Others										1				1		1	1		1
Buffalo + Chicken			2				2		2	1	2		1	1	3	4	3	3	6
Buffalo + Others																			
Buffalo Only												1		1		1	1		1
Sheep + Chicken + Others	3	1		3				3	3		1				1	1	3	5	8
Sheep + Chicken	5	8	3	3	1	3	4	6	10			1		1		1	10	14	24
Sheep + Others	2		1				1		1								3		3
Sheep and Goat Only	1		1			1	1	1	2								2	1	3
Chicken + Others	1	1			3		3		3	1	1	2	2	3	3	6	7	4	11
Chicken Only	12	11	2	3	3	5	5	8	13	4	3	4	2	8	5	13	25	24	49
Others Only										1			1	1	1	2	1	1	2
Total	24	21	9	10	8	9	17	19	36	10	9	10	8	20	17	37	61	57	118

Notes: 1. Farmers raising no livestock at all account for only 9% of all respondents, but the number of farmers keeping draught animals (cattle and buffaloes) is also as small as 18 or 13.8% of all respondents.

2. 56 farmers or 43% of all respondents are raising medium size livestock (sheep and goat), and the great majority of livestock raising farmers keep small animals such as chicken and duck.

3. The percentage of dem-farm operators raising large or medium animals is larger than that of non-operators raising the same animals.

4. More than half of small animal raising farmers keep 1 ∿ 5 chickens.

5. The survey disclosed that 24.6% of the respondents have an operational holding of more than 2 ha and 41% more than 1 ha, but the farmers keeping draught animals account for 14% of all respondents.

2. Changes in Planted Area of Paddy

Item			Survey Area: Cihea D.F.	Cihea N.D.	Kabupaten Cianjur: Cibeber D.F.	Cibeber N.D.	Gunonghalu D.F.	Gunonghalu N.D.	Sub-total D.F.	Sub-total N.D.	Sub-total Total	Kabupaten Bekasi: Telukpucung D.F.	Telukpucung N.D.	Tambun D.F.	Tambun N.D.	Sub-total D.F.	Sub-total N.D.	Sub-total Total	Grand Total D.F.	Grand Total N.D.	Grand Total Total
Planted Area (ha)	1968	Dry Season	2106.6	1429.8	353	1370	521	451	874	1821	2695	677	2273	1312	1320	1989	2492	5582	4969.6	6843.8	11813.4
		Wet Season	2056.6	1334.8	353	1395	521	476	874	1871	2745	677	2273	1312	1320	1989	4262	6251	4919.6	7467.8	12387.4
	1969	Dry Season	2033.4	1320.7	353	1195	521	452	874	1647	2521	727	2273	1324	1320	2051	3593	5644	5958.4	6560.7	12519.1
		Wet Season	1835.4	1313.7	359	1235	628	476	987	1711	2698	677	2280	1424	1320	2101	3600	5701	4923.4	6624.7	11548.1
	1970	Dry Season	1835.4	1313.7	367	1180	628	452	995	1632	2627	677	2380	1424	1420	2101	3800	5901	4931.4	6745.7	11667.1
		Wet Season	1835.4	1313.7	582	1200	657	476	1239	1676	2915	727	2230	1424	1570	2151	3800	5951	5225.4	6789.7	12015.1
	1971	Dry Season	1835.4	1313.7	582	1200	601	382	1183	1582	2765	747	2230	1624	1570	2371	3800	6171	5389.4	6695.7	12085.1
		Wet Season	1835.4	1313.7	582	1265	673	405	1255	1670	2925	697	2440	1624	1570	2321	4010	6331	5411.4	6993.7	12405.1
	1972	Dry Season	1835.4	1313.7	604	1290	673	381	1277	1671	2948	847	2530	1662	1395	2509	3925	6434	5621.4	6909.7	12531.1
		Wet Season	1835.4	1242.7	619	1290	673	361	1292	1651	2943	897	2530	1662	1520	2559	4050	6609	5686.4	6943.7	12630.1
	1973	Dry Season	1835.4	1242.7	619	1290	679	361	1298	1651	2949	897	2530	1690	1670	2587	4200	6787	5720.4	7093.7	12814.1
	1973	Wet Season	1902.2	1242.7	619	1290	598	500	1217	1790	3007	997	2580	1730	1870	2727	4450	7177	5846.2	7482.7	13328.9
Index (Base : 1973 Wet Season)	1968	Dry Season	110.74	115.06	57.03	106.20	87.12	90.20	71.82	101.73	89.62	67.90	88.10	75.84	70.59	72.93	80.74	77.78	85.00	91.46	88.63
		Wet Season	108.24	107.41	57.03	108.14	87.12	95.20	71.82	104.53	91.29	67.90	88.10	75.84	70.59	72.93	95.78	87.10	84.15	99.81	92.94
	1969	Dry Season	106.12	106.28	57.03	92.64	87.12	90.40	71.82	92.01	83.84	72.90	88.10	76.53	70.59	75.21	80.74	78.65	101.92	87.68	93.92
		Wet Season	96.49	105.71	58.00	95.74	105.02	95.20	81.10	95.59	89.72	67.90	88.37	82.31	70.59	77.04	80.90	79.43	84.22	88.53	86.64
	1970	Dry Season	96.91	105.71	59.29	91.47	105.02	90.40	81.76	91.17	87.36	67.90	92.25	82.31	75.93	77.04	85.39	82.22	84.35	90.15	87.61
		Wet Season	96.28	105.71	94.02	93.02	109.87	95.20	101.81	93.63	96.94	72.90	86.43	82.31	83.96	78.88	85.39	82.92	89.38	90.74	90.14
	1971	Dry Season	97.42	105.71	94.02	93.02	100.50	76.40	97.21	88.38	91.95	74.92	86.43	93.87	83.96	86.95	85.39	85.98	92.19	89.48	90.67
		Wet Season	97.42	105.71	94.02	98.06	112.54	81.00	103.12	93.30	97.27	69.91	94.57	93.87	83.96	85.11	90.21	88.21	92.56	93.46	93.07
	1972	Dry Season	97.42	105.71	97.58	100.00	112.54	76.20	104.93	93.35	98.00	84.95	98.06	96.07	74.60	92.01	88.30	89.64	96.15	92.34	94.01
		Wet Season	97.42	100.00	100.00	100.00	112.54	72.20	106.16	92.23	97.87	89.97	98.06	96.07	81.28	93.84	91.01	92.09	97.27	92.80	94.76
	1973	Dry Season	97.42	100.00	100.00	100.00	113.55	72.20	106.56	92.23	98.07	89.97	98.06	97.67	89.31	94.87	94.38	94.57	97.85	94.10	96.14
	1973	Wet Season	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Item	Survey Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
					Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
			D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Average Planted Area per Household (a)	1968	Dry Season	87.78	57.19	39.22	137.00	52.10	45.10	43.70	91.05	67.37	84.63	284.13	218.67	264.00	99.45	179.65	139.55	76.46	105.29	90.87
		Wet Season	85.69	53.39	39.22	139.50	52.10	47.60	43.70	93.55	68.63	84.63	284.13	218.67	264.00	99.45	213.10	156.28	75.69	114.89	95.29
	1969	Dry Season	84.73	52.83	39.22	119.50	52.10	45.20	43.70	82.35	63.03	90.88	284.13	189.14	264.00	102.55	179.65	141.10	91.67	100.93	96.30
		Wet Season	76.48	52.55	39.89	123.50	62.80	47.60	49.35	85.55	67.45	84.63	285.00	178.00	264.00	105.05	180.00	142.53	75.74	101.92	88.83
	1970	Dry Season	76.81	52.55	40.78	118.00	62.80	45.20	49.75	81.60	65.68	84.63	264.44	178.00	236.67	105.05	190.00	147.53	75.87	103.78	89.82
		Wet Season	73.26	52.55	64.67	120.00	65.70	47.60	61.95	83.80	72.88	90.88	247.78	178.00	224.29	107.55	190.00	148.78	80.39	104.46	92.42
	1971	Dry Season	74.13	52.55	64.67	120.00	60.10	38.20	59.15	79.10	69.13	93.38	247.78	180.44	224.29	118.55	190.00	154.28	82.91	103.01	92.96
		Wet Season	74.13	52.55	64.67	126.50	67.30	40.50	62.75	83.50	73.13	87.13	244.00	180.44	224.29	116.05	200.50	158.28	83.25	107.60	95.42
	1972	Dry Season	74.13	52.55	67.11	129.00	67.30	38.10	63.85	83.55	73.70	94.11	253.00	184.67	174.38	125.45	196.25	160.85	86.48	106.30	96.39
		Wet Season	74.13	49.71	61.90	129.00	67.30	36.10	64.60	82.55	73.58	89.97	253.00	184.67	190.00	127.95	202.50	165.23	87.48	106.83	97.15
	1973	Dry Season	74.13	49.71	61.90	129.00	67.90	36.10	64.90	82.70	73.73	89.97	253.00	187.78	208.75	129.35	210.00	169.68	88.01	109.13	98.57
	1973 Wet Season		76.09	49.71	61.90	129.00	59.80	50.00	60.85	89.50	75.18	99.70	258.00	173.00	187.00	136.35	222.50	179.43	89.94	115.12	102.33
Changes in 68 ∿ 73 Period	No Change		10	15	5	1	4	4	9	5	14	7	4	7	2	14	6	20	33	26	59
	Increased		5		5	7	5	2	10	9	19	3	2	3	7	6	9	15	21	18	39
	Decreased		10	10		2	1	4	1	6	7		4		1		5	5	11	21	32
	Total		25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130

Notes: 1. There were 59 farmers (45% of all respondents) who replied that their paddy field area had not changed during the six year covered by the survey. This means that a majority of the respondents increased or decreased their paddy field area during the same period.

2. Changes in the paddy field area are rather conspicuous. Of all the respondents who had changed their paddy field area, those who replied "Increased" accounted for 30% and those who answered "Decreased" 25%. Farmers who had maintained the same acreage or increased it were found in larger number in the dem-farm operators' group than in the non-operators' group which included a large number of acreage-decreasing farmers. The relationship between acreage increase and demonstration farm operation is unknown.

3. The general trend of the respondents' cropping ratio is that it is somewhat lower in the dry season than in the wet season. However, the difference is far smaller than the seasonal fluctuation of the average cropping ratio in the entire survey area. It appears that large holders plant paddy in a substantially large area even in the dry season.

4. In Cibeber and Telukpucung, demonstration farms have been established to increase the planted area. In Gunonghalu and Tambun, however, they have been established for those farmers whose planted area is larger than that of non-dem-farm operators. This difference is perhaps assignable to the fact that the latter two centers are second centers which started extension activities some time after the first centers.

5. The changes in paddy planted area in each survey area are graphically illustrated on page 121 with the 1973 wet season taken as the base.

3. Extension of Improved Varieties (Acreage of Planted Area and Number of Farm Households)

Item			Survey Area	Cihea		Kabupaten Cianjur						Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-total		Telukpucung		Tambun		Sub-total					
				D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Cropping Condition by Variety	Improved Varieties	Pelita	ha	1540.2	412.6	15	380	239		254	380	634	784	2020	1582	1510	2366	3530	5896	4160.2	4322.6	8482.8
			Number of Farm Households	23	11	1	8	4		5	8	13	9	8	10	9	19	17	36	47	36	83
		PB5	ha	116	30		210				210	210	30	400			30	400	430	146	640	786
			Number of Farm Households	3	1		4				4	4	1	2			1	2	3	4	7	11
		C 4	ha					153		153		153	68	160			68	160	228	221	160	381
			Number of Farm Households					6		6		6	2	2			2	2	4	8	2	10
		Sub-Total	ha	165.62	442.6	15	590	392		407	590	997	882	2580	1582	1510	2464	4090	6554	4527.2	5122.6	9649.8
			Number of Farm Households	24	12	1	10	10		11	10	21	9	10	10	9	19	19	38	54	41	95
	Local Varieties	Central	ha	125	5921	40	125	74	440	114	565	679								239	1157.1	139.61
			Number of Farm Households	3	17	1	3	1	9	2	12	14								5	29	33
		OA MS	ha		25			184	70	184	70	254								184	95	279
			Number of Farm Households		1			2	1	2	1	3								2	2	4
		HA AR WL	ha			520	485			520	485	1005								520	485	1005
			Number of Farm Households			9	8			9	8	17								9	8	17
		CE EE	ha												148	220	148	220	368	148	220	368
			Number of Farm Households												3	2	3	2	5	3	2	5
		Others	ha	22	33		65	29	13	29	78	107	75			140	75	140	215	126	251	377
			Number of Farm Households	1	1		3	1	1	1	4	5	1			3	1	3	4	3	8	11
		Sub-Total	ha	147	650.1	560	675	287	523	847	1198	2045	75		148	360	223	360	583	1217	2208.1	3425.1
			Number of Farm Households	4	19	9	9	4	10	13	19	32	1		3	5	4	5	9	21	43	46

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
				D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Cropping Condition by Variety	Unknown		ha	99	150	44	25			44	25	69	90				90		90	233	175	408
			Number of Farm Households	1	1	(1)	(1)			(1)	(1)	(2)	1				1		1	2 (1)	1 (1)	3 (2)
	Average Planted Area per Household	Improved Varieties		69.01	36.88	15.00	59.00	39.20		37.00	59.00	47.48	102.50	258.00	158.20	167.78	129.68	215.63	172.47	83.83	124.94	101.58
		Local Varieties		36.75	342	62.22	75.00	71.00	102.55	65.15	63.05	63.91	75.00		49.33	72.00	55.75	72.00	64.78	57.95	51.35	53.52
	Ratio	Planted Area	Imp.	89.37	3562	242	45.74	54.49		31.36	32.54	32.05	82.25	100.00	91.45	80.75	88.73	91.91	90.69	75.74	68.25	71.57
			Loc.	7.93	52.31	90.47	52.33	42.27	100.00	65.25	66.08	65.73	7.52		8.55	19.25	8.03	8.09	8.07	20.36	29.42	25.40
			Unknown	2.70	12.07	7.11	1.94			3.39	1.38	2.22	9.03				3.24		1.25	3.90	2.33	3.03
		Number of Farm Households	Imp.	96.00	48.00	10.00	100.00	100.00		55.00	50.00	52.50	90.00	100.00	100.00	90.00	95.00	95.00	95.00	83.08	63.08	73.08
			Loc.	16.00	76.00	90.00	90.00	40.00	100.00	65.00	95.00	80.00	10.00		30.00	50.00	20.00	25.00	22.50	32.31	66.15	49.23
			Unknown	4.00	4.00								10.00				5.00		2.50	3.08	1.54	2.31
Annual Number of Farm Households Growing Improved Varieties	Before 1968																					-
	1968	D.	New										2	1			2	1	3	2	1	3
			Cumulative Total										2	1			2	1	3	2	1	3
		W.	New																			
			Cumulative Total										2	1			2	1	3	2	1	3
	1969	D.	New		1									1				1	1		2	2
			Cumulative Total		1								2	2			2	2	4	2	3	5
		W.	New	1										1				1	1	1	1	2
			Cumulative Total	1	1								2	3			2	3	5	3	4	7
	1970	D.	New	1			1	1		1	1	2								2	1	3
			Cumulative Total	2	1		1	1		1	1	2	2	3			2	3	5	5	5	10
		W.	New																			
			Cumulative Total	2	1		1	1		1	1	2	2	3			2	3	5	5	5	10

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-total			Telukpucung		Tambun		Sub-total					
				D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Annual Number of Farm Households Growing Improved Varieties	1971	D.	New	2	1									1				1	1	2	2	4
			Cumulative Total	4	2		1	1		1	1	2	2	4			2	4	6	7	7	14
		W.	New	8	2									1				1	1	1	8	11
			Cululative Total	12	4		1	1		1	1	2	2	5			2	5	7	15	10	25
	1972	D.	New	5	2		5				5	5		1	3	4	3	5	8	8	12	20
			Cumulative Total	17	6		6	1		1	6	7	2	6	3	4	5	10	15	23	22	45
		W.	New	2	3	1	1			1	1	2	5	1	1	1	6	2	8	9	6	15
			Cumulative Total	19	9	1	7	1		2	7	9	7	7	4	5	11	12	23	32	28	60
	1973	D.	New	3	2		3	9		9	3	12		2	2	1	2	3	5	14	8	22
			Cumulative Total	22	11	1	10	10		11	10	21	7	9	6	6	13	15	28	46	36	82
		W.	New	1	1									1	4	2	4	3	7	5	4	9
			Cumulative Total	23	12	1	10	10		11	10	21	7	10	10	8	17	18	35	51	40	91
	1974	D.	New	1														1	1	1	1	2
			Cumulative Total	24	12	1	10	10		11	10	21	7	10	10	9	17	19	36	52	41	93
	Unknown																2		2	2		2
	Total			24	12	1	10	10	-	11	10	21	9	10	10	9	29	19	38	54	41	95

Notes: 1. The extension ratio of improved varieties is 72% and 73% in terms of planted area and number of farm households, respectively. These values are considerably higher than the average ratios in the whole survey area, and indicate that the diffusion ratio of improved varieties is high for large scale management.

2. Pelita is dominant over all other improved varieties in terms of planted area. Local varieties are clearly divided by area, with Sentral and Omas dominating in Kabupaten Cianjur and Hawara and Cere in Kabupaten Bekasi.

3. Dem-farm operators surpass non-operators in the ratios of both planted area and number of farm households, which is quite natural. In Kabupaten Cianjur, however, the ratio of planted area of local varieties turns out to be larger than that of improved varieties if the dem-farm operators in Cihea area are excluded. Although improved varieties are grown by increasingly larger number of farmers in Cianjur, the ratio of their planted area is still smaller than that of local varieties.

4. All respondents in Kabupaten Bekasi have a high ratio of planted area of improved varieties. However, it is smaller than the ratio of farm household number, which is also small.

5. Extension of improved varieties has been prompted by the operation of demonstration farms. This is most distinctly exemplified in Tambun district where the diffusion of improved varieties among non-dem-farm operators, which started in time with the establishment of demonstration farms, proceeded at the same pace as among dem-farm operating farmers. In Telukpucung district, however, the extension speed among dem-farm operators is faster than among non-operators. In Cibeber district, no improved varieties are cultivated in demonstration farms, and in Gunonghalu district, diffusion from demonstration farms into non-dem-farm operators is not observed at all. The condition in the latter two districts indicates that extension of improved varieties in Kabupaten Cianjur excluding Cihea area involves various difficulties.

6. The extension condition of improved varieties is graphically illustrated on page 123.

4. Respondents' Participation in BIMAS

Item \ Survey Area				Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Ex-Participant				18	19	4	1	5	7	9	8	17	9	10	6	10	15	20	35	42	47	89
Current Participant					4	5	9	3		8	9	17	1				1		1	9	13	22
Never Participated				1	2	1		2	3	3	3	6			4		4		4	8	5	13
Refundment of BIMAS Credit	Completed Already			16	19	2	4	8	6	10	10	20	8	4	6	6	14	10	24	40	39	79
	Refunding at Present				3	7	6		1	7	7	14	2	1		3	2	4	6	9	14	23
	Not Started Yet													5		1		6	6		6	6
	Completed Some Time Ago												2				2		2	2		2
Annual Number of BIMAS Participants	1968	D.	New					2	1	2	1	3	3	2			3	2	5	5	3	8
			Cumulative Total					2	1	2	1	3	5	2			5	2	7	7	3	10
		W.	New	1	2								1				1		1	2	2	4
			Cumulative Total	1	2			2	1	2	1	3	6	2			6	2	8	9	5	14
	1969	D.	New		1	1		2		3		3		1				1	1	3	2	5
			Cumulative Total	1	3	1		4	1	5	1	6	6	3			6	3	9	12	7	19
		W.	New	5																5		5
			Cumulative Total	6	3	1		4	1	5	1	6	6	3			6	3	9	17	7	24
	1970	D.	New	7	5		2		4		6	6	6	1		2		3	3	7	14	21
			Cumulative Total	13	8	1	2	4	5	5	7	12	6	4		2	6	6	12	24	21	45
		W.	New		4		3				3	3		1				1	1		8	8
			Cumulative Total	13	12	1	5	4	5	5	10	15	6	5		2	6	7	13	24	29	53

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Annual Number of BIMAS Participants	1971	D.	New	3	5	1	1			1	1	2		2				2	2	4	8	12
			Cumulative Total	16	17	2	6	4	5	6	11	17	6	7		2	6	9	15	28	37	65
		W.	New		1		1				1	1	1				1		1	1	2	3
			Cumulative Total	16	18	2	7	4	5	6	12	18	7	7		2	7	9	16	29	39	68
	1972	D.	New	1	1		2	2	1	2	3	5			5	2	5	2	7	8	6	14
			Cumulative Total	17	19	2	9	6	6	8	15	23	7	7	5	4	12	11	23	37	45	82
		W.	New		3		1				1	1		1				1	1		5	5
			Cumulative Total	17	22	2	10	6	6	8	16	24	7	8	5	4	12	12	24	37	50	87
	1973	D.	New		1	7		1	1	8	1	9	2	1		1	2	2	4	10	3	13
			Cumulative Total	17	23	9	10	7	7	16	17	33	9	9	5	5	14	14	28	47	53	100
		W.	New	1									1	1	1	2	2	3	5	3	3	6
			Cumulative Total	18	23	9	10	7	7	16	17	33	10	10	6	7	16	17	33	50	56	106
	1974	D.	New					1		1		1				3		3	3	1	3	4
			Cumulative Total	18	23	9	10	8	7	17	17	34	10	10	6	10	16	20	36	51	59	110
	Unknown				1						1	1									1	1
	Total			18	24	9	10	8	7	17	18	35	10	10	6	10	16	20	36	51	60	111

Notes:
1. 85.4% of the respondents are BIMAS participants and 68.5% are ex-participants, and most of the ex-participants belonged to INMAS.
2. BIMAS participants account for 78.5% of demo-farm operating respondents and 92.3% of non-operating respondents.
3. The annual percentage of BIMAS participants was higher for dem-farm operators up to the 1970 dry season. After that, however, it dindled for dem-farm operators and increased sharply for non-operators.
4. Most of non-dem-farm operators can obtain agricultural equipment and materials from BIMAS because more than 90% of such operators are BIMAS members. Data of Cihea area clearly indicates that the establishment of demonstration farms has given BIMAS participating farmers an incentive to obtain additional agricultural equipment and materials.

5. Respondents' Farm Work

Item \ Survey Area			Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
					Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
			D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Plowing	Manual Labour		25	25	10	10	9	10	19	20	39	4	8		1	4	9	13	48	54	102
	Animal Driven Plow		11	9	10	10	5	10	15	20	35	10	10	1	6	11	16	27	37	45	82
	Powered Plow		10		1	1			1	1	2			9	4	9	4	13	20	5	25
Disease and Insect Pest Control	Hand Sprayer and Duster		25	25	10	10	8	2	18	12	30	9	10	1	6	10	16	26	53	53	106
	Powered Sprayer and Duster		7		9	1	2	7	11	8	19	1		9	7	10	7	17	28	15	43
Weeding	Manual Weeding		25	25	10	10	10		20	10	30	9	10		5	9	15	24	54	50	104
	Weeder		23	9	9	7	1	10	10	17	27	5		10	6	15	6	21	48	32	80
Reaping	Ani-Ani (Spike Cutting)		18	25	10	10	10	10	20	20	40	10	9	3	4	19	7	26	57	52	109
	Sickle Cutting (Stalk Cutting)		17	5	1	1	1		2	1	3	6	1	7	6	13	7	20	32	13	45
Threshing	Foot Threshing		18	25	10	10	5	10	15	20	35	7	10	6	7	13	17	30	41	62	103
	Hand Threshing (by beating on the ground)		8	2		2	1		1	2	3		1		2		3	3	9	7	16
	Thresher		10	3			5		5		5	10		4	1	14	1	15	19	4	23
Annual Number of Machined Farmers	Before 1968																				
	1968	D. New						1		1	1									1	1
		D. Cumulative Total						1		1	1									1	1
		W. New																			
		W. Cumulative Total						1		1	1									1	1
	1969	D. New																			
		D. Cumulative Total						1		1	1									1	1
		W. New																			
		W. Cumulative Total						1		1	1									1	1

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Annual Number of Mechanized Farmers	1970	D.	New					2		2		2				1		1	1	2	1	3
			Cumulative Total					2	1	2	1	3				1		1	1	2	2	4
		W.	New																			
			Cumulative Total					2	1	2	1	3				1		1	1	2	2	4
	1971	D.	New																			
			Cumulative Total					2	1	2	1	3				1		1	1	2	2	4
		W.	New	12	3															12	3	15
			Cumulative Total	12	3			2	1	2	1	3				1		1	1	14	5	19
	1972	D.	New	3	2				1		1	1		1		4		5	5	3	8	11
			Cumulative Total	15	5			2	2	2	2	4		1		5		6	6	17	13	30
		W.	New	4	2	10				10		10	9				9		9	23		23
			Cumulative Total	19	7	10		2	2	12	2	14	9	1		5	9	6	15	40	13	53
	1973	D.	New					6		6		6			4	1	4	1	5	10	1	11
			Cumulative Total	19	7	10		8	2	18	2	20	9	1	4	6	13	7	20	50	14	64
		W.	New				2				2	2	1		6	1	7	1	8	7	3	10
			Cumulative Total	19	7	10	2	8	2	18	4	22	10	1	10	7	20	8	28	57	17	74
	1974	D.	New	1												2		2	2	1	2	3
			Cumulative Total	20	7	10	2	8	2	18	4	22	10	1	10	9	20	10	30	58	19	77
	Unknown			4	6		6	2		2	6	8				1		1	1	6	13	19
	Total			24	13	10	8	10	2	20	10	30	10	1	10	10	20	11	31	64	32	96

Notes: 1. The interview disclosed that powered plows are used by 20% of the respondents, powered sprayers and dusters by 33% and weeders by 62%, and that sickle reaping is practised by 35% of the respondents.

2. An average of 67.2% of these respondents are dem-farm operators, which indicates that dem-farm operators are far more modernized than non-operators. However, the respondents' modernization of farm work is limited by the number of equipment and implement offered to them so that it should not be attributed to their own voluntary effort for applying improved equipment and implement.

3. It can be seen from the annual number of mechanized farmers that in all districts excluding Cibeber, non-dem-farm operators introduced farm machinery and equipment earlier than dem-farm operators. The extension ratio of farm machinery and equipment shows virtually no difference between the two groups of respondents.

4. The changes in the number of mechanized farmers are graphically illustrated on page 126.

6. Fertilizer Applying Respondents

Item \ Survey Area				Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Annual Number of Mechanized Farmers	Before 1968			20	22	6		2	1	8	1	9	5				5		5	33	23	56
	1968	D.	New	2		1	7	3	7	4	14	18	3	3			3	3	6	9	17	26
			Cumulative Total	22	22	7	7	5	8	12	15	27	8	3			8	3	11	42	40	82
		W.	New		1								1	1			1	1	2	1	3	3
			Cumulative Total	22	23	7	7	5	8	12	15	27	9	4			9	4	13	43	42	85
	1969	D.	New						1		1	1		1				1	1		2	2
			Cumulative Total	22	23	7	7	5	9	12	16	28	9	5			9	5	14	43	44	87
		W.	New			2				2		2		1				1	1	2	1	3
			Cumulative Total	22	23	9	7	5	9	14	16	30	9	6			9	6	15	45	45	90
	1970	D.	New					4	1	4	1	5				3		3	3	4	4	8
			Cumulative Total	22	23	9	7	9	10	18	17	35	9	6		3	9	9	18	49	49	98
		W.	New											2				2	2		2	2
			Cumulative Total	22	23	9	7	9	10	18	17	35	9	8		3	9	11	20	49	51	100
	1971	D.	New											1				1	1		1	1
			Cumulative Total	22	23	9	7	9	10	18	17	35	9	9		3	9	12	21	49	52	101
		W.	New																			
			Cumulative Total	22	23	9	7	9	10	18	17	35	9	9		3	9	12	21	49	52	101
	1972	D.	New	2				1		1		1		1	5	2	5	3	8	8	3	11
			Cumulative Total	24	23	9	7	10	10	19	17	36	9	10	5	5	14	15	29	57	55	112
		W.	New		1	1				1		1	1				1		1	2	1	3
			Cumulative Total	24	24	10	7	10	10	20	17	37	10	10	5	5	15	15	30	59	56	115

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Annual Number of Mechanized Farmers	1973	D.	New												2	1	2	1	3	2	1	3
			Cumulative Total	24	24	10	7	10	10	20	17	37	10	10	7	6	17	16	33	61	57	118
		W.	New												3	2	3	2	5	3	2	5
			Cumulative Total	24	24	10	7	10	10	20	17	37	10	10	10	8	20	18	38	64	59	123
	1974	D.	New													2		2	2		2	2
			Cumulative Total	24	24	10	7	10	10	20	17	37	10	10	10	10	20	20	40	64	61	125
	Unknown						3				3	3									3	3
No Answer				1	1															1	1	2
Total				25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130

Notes: 1. Fertilizer application practice is followed by all the respondents.

2. There is no clear evidence that fertilizer applying farmers increased specially because of the operation of demonstration farms. It is known that in all districts excepting Tambun, almost 100% of dem-farm operators had been practising fertilization application before the establishment of demonstration farms. This suggests that they were induced to participate in the dem-farm organization by their own experience in fertilized farming.

3. The diffusion of the fertilization practice is graphically illustrated on page 124.

7. Chemicals Applying Respondents

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Annual Number of Chemicals Applying Farmers	Before 1968			14	10	6			1	6	1	7	4				4		4	24	11	35
	1968	D.	New			1	1	3	8	4	9	13	3	2			3	2	5	7	11	18
			Cumulative Total	14	10	7	1	3	9	10	10	20	7	2			7	2	9	31	22	53
		W.	New		2									1				1	1		3	3
			Cumulative Total	14	12	7	1	3	9	10	10	20	7	3			7	3	10	31	25	56
	1969	D.	New						1		1	1		2				2	2		3	3
			Cumulative Total	14	12	7	1	3	10	10	11	21	7	5			7	5	12	31	28	59
		W.	New	1	1	1						1								2	1	3
			Cumulative Total	15	13	8	1	3	10	10	11	22	7	5			7	5	12	33	29	62
	1970	D.	New	3	5		3	5		1	3	8		1		3		4	4	. 8	12	20
			Cumulative Total	18	18	8	4	8	10	11	14	30	7	6		3	7	9	16	41	41	82
		W.	New		1		1			5	1	1		1				1	1		3	3
			Cumulative Total	18	19	8	5	8	10	16	15	31	7	7		3	7	10	17	41	44	85
	1971	D.	New		1									1				1	1		2	2
			Cumulative Total	18	20	8	5	8	10	16	15	31	7	8		3	7	11	18	41	46	87
		W.	New	3	4															3	4	7
			Cumulative Total	21	24	8	5	8	10	16	15	31	7	8		3	7	11	18	44	50	94
	1972	D.	New	3			3	1			3	4	1	1	5	2	6	3	9	10	6	16
			Cumulative Total	24	24	8	8	9	10	16	18	35	8	9	5	5	13	14	27	54	56	110
		W.	New	1	1	2	2			1	2	4	2				2		2	5	3	8
			Cumulative Total	25	25	10	10	9	10	17	20	39	10	9	5	5	15	14	29	59	59	118

Item / Survey Area			Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
					Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
			D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
1973	D.	New							2				1	1	1	1	2	3	1	2	3
		Cumulative Total	25	25	10	10	9	10	19	20	39	10	10	6	6	16	16	32	60	61	121
	W.	New												4	2	4	2	6	4	2	6
		Cumulative Total	25	25	10	10	9	10	19	20	39	10	10	10	8	20	18	38	64	63	127
1974	D.	New					1		1		1				1		1	1	1	1	2
		Cumulative Total	25	25	10	10	10	10	20	20	40	10	10	10	9	20	19	39	65	64	129
Unknown																					
Farmers Not Using Chemicals															1		1	1		1	1
Total			25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130

Notes: 1. Extension of agro-chemical application presents an almost identical pattern to that of fertilizatilization practice.

2. It was after the establishment of demonstration farms that dem-farm operators reached 100% extension ratio, although many of the respondent farmers are known to have applied chemicals even before that. This means that full extension of chemicals applying practice was attained by the operation of demonstration farms.

3. Both dem-farm operators and non-operators attained 100% extension rate at about the same time, which suggests that the extension of chemicals application practice was prompted to a considerable degree by the establishment of demonstration farms.

4. The extension condition of the plant protection practice is graphically illustrated on page 125.

8. Yield of Paddy per ha

Item \ Survey Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Cause of Yield Increase	Largely Increased	12	4		5	10		10	5	15	10	10	9	6	19	16	35	41	25	66
	Slightly Increased	13	21	10	5		10	10	15	25			1	4	1	4	5	24	40	64
	Variety	25	11	10	10	10		20	10	30	10	9	10	8	20	17	37	65	38	103
	Joint Farming Work	25		9		10		19		19	9		10		19		19	63		63
	Fertilizer Application	25	25	10	10	10	8	20	18	38	10	10	10	9	20	19	39	65	62	127
	Disease and Insect Pest Control	25	25	10	10	10	1	20	11	31	10	9	10	9	20	18	38	65	54	119
	Irrigation	25	21		7	10		10	7	17	6		9	5	15	5	20	50	33	83
	Mechanized Farming	12		2				2		2			9	2	9	2	11	23	2	25
	Others																			
Cause of Yield Decrease	Variety	5	2				1		1	1								5	3	8
	Drought Damage	6	6				4		4	4								6	10	16
	Natural Disaster	1	1															1	1	2
	Shortage of Labour Force	1																1		1
	Disease and Insect Pests	6	6				9		9	9								6	15	21
	Others																			
Yield	Less than 3 t						1		1	1									1	1
	3.0 ∿ 3.5		1											3					1	1
	3.5 ∿ 4.0		2				6		6	6				3		3	3		11	11
	4.0 ∿ 4.5						1		1	1	1	2	1	1	2	3	5	2	4	6
	4.5 ∿ 5.0		6		1		1		1		2	1	1	2	2	3	5	2	11	13
	5.0 ∿ 5.5	1	6	3	3			3	3	6	2	3	4	1	5	4	0	10	13	23
	5.5 ∿ 6.0	2	5	2			1	2	1	3		3	1	1	1	4	5	5	10	15
	6.0 ∿ 6.5	4	2	4	2	1		5	2	7	3	1	1		4	1	5	13	5	18
	6.5 ∿ 7.0	4	1	1	3	6		7	3	10	1				1		1	12	4	16
	More than 7 t	14	2			3		3		3	2		2		4		4	21	2	23
Highest Yield		8.0	7.5	6.5	6.8	8.0	5.5	8.0	6.8	8.0	7.7	6.3	7.0	5.8	7.7	6.3	7.7	8.0	7.5	8.0
Lowest Yield		5.4	3.5	5.0	4.5	6.3	2.1	5.0	2.1	2.1	4.0	4.0	4.2	3.5	4.0	3.5	3.5	4.0	2.1	2.1
Average		6.76	5.17	5.67	5.74	6.93	3.77	6.30	4.76	5.53	5.84	5.10	5.43	4.34	5.64	4.72	5.18	6.23	4.88	5.56

Item \ Survey Area				Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Annual Number of Farmers Recording Yield Increase	Before 1968			1					1		1	1								1	1	2
	1968	D.	New						2		2	2		2				2	2		4	4
			Cumulative Total	1					3		3	3		2				2	2	1	5	6
		W.	New		2																2	2
			Cumulative Total	1	2				3		3	3		2				2	2	1	7	8
	1969	D.	New	1	1									2				2	2	1	3	4
			Cumulative Total	2	3				3		3	3		4				4	4	2	10	12
		W.	New	1	1															1	1	2
			Cumulative Total	3	4				3		3	3		4				4	4	3	11	14
	1970	D.	New	2	5				3		3	3	3	1			3	1	4	5	9	14
			Cumulative Total	5	9				6		6	6	3	5			3	5	8	8	20	28
		W.	New		3																3	3
			Cumulative Total	5	12				6		6	6	3	5			3	5	8	8	23	31
	1971	D.	New	2	4		1				1	1		2		1		3	3	2	8	10
			Cumulative Total	7	16		1		6		7	7	3	7		1	3	8	11	10	31	41
		W.	New	4	2																	
			Cumulative Total	11	18		1		6		7	7	3	2		1	3	9	12	14	34	48
	1972	D.	New	5	2		5		1		6	6	1	1	4	4	5	5	10	10	13	23
			Cumulative Total	16	20		6		7		13	13	4	9	4	5	8	14	22	24	47	71
		W.	New	3	4	10	1			10	1	11	5		1		6		6	19	5	24
			Cumulative Total	19	24	10	7		7	10	14	24	9	9	5	5	14	14	28	43	52	95
	1973	D.	New	1				10		10		10			1	1	1	1	2	12	1	13
			Cumulative Total	20	24	10	7	10	7	20	14	34	9	9	6	6	15	15	30	55	53	108
		W.	New	4									1	1	4	2	5	3	8	9	3	12
			Cumulative Total	24	24	10	7	10	7	20	14	34	10	10	10	8	20	18	38	64	56	120
	1974	D.	New	1												1		1	1	1	1	2
			Cumulative Total	25	24	10	7	10	7	20	14	34	10	10	10	9	20	19	39	65	57	122
	Unknown				1		3		3		6	6									7	7
No Answer																1		1	2		1	1
Total				25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130

Item \ Survey Area			Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
					Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
			D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Annual Number of Farmers Recording More than 6 t of Yield	Before 1968		1																1		1
	1968	D. New																			
		D. Cumulative Total	1																1		1
		W. New																			
		W. Cumulative Total	1																1		1
	1969	D. New	1	1															1	1	2
		D. Cumulative Total	2	1															2	1	3
		W. New	1	1															1	1	2
		W. Cumulative Total	3	2															3	2	5
	1970	D. New	2	1								2				2		2	4	1	5
		D. Cumulative Total	5	3								2				2		2	7	3	10
		W. New																			
		W. Cumulative Total	5	3								2				2		2	7	3	10
	1971	D. New	3	1		1				1	1		1				1	1	3	3	6
		D. Cumulative Total	8	4		1				1	1	2	1			2	1	3	10	6	16
		W. New	3																3		3
		W. Cumulative Total	11	4		1				1	1	2	1			2	1	3	3	6	19
	1972	D. New	4			2				2	2	1		1		2		2	6	2	8
		D. Cumulative Total	15	4		3				3	3	3	1	1		4	1	5	19	8	27
		W. New	3	1	5	1			5	1	6	3				3		3	11	2	13
		W. Cumulative Total	18	5	5	4			5	4	9	6	1	1		7	1	8	30	10	40
	1973	D. New	1				10		10		10								11		11
		D. Cumulative Total	19	5	5	4	10		15	4	19	6	1	1		7	1	8	41	10	51
		W. New	3											2		2		2	5		5
		W. Cumulative Total	22	5	5	4	10		15	4	19	6	1	3		9	1	10	46	10	56
	1974	D. New																			
		D. Cumulative Total	22	5	5	4	10		15	4	19	6	1	3		9	1	10	46	10	56
	Unknown					1				1	1									1	1
	Total		22	5	5	5	10	-	15	5	20	6	1	3	-	9	1	10	46	11	57

Notes:

1. When asked if the yield has increased from the level of five or six years ago, all respondents ansered "Yes," half of them adding "Largely increased" and the remaining half "Slightly."
2. 62% of the respondents who said that their yield had largely increased were dem-farm operators, and 62% of the respondents whose yield had slightly increased were non-operators.
3. As for the cause of yield increase, fertilizer application, disease and insect pest control, selection of suitable variety, irrigation improvement, joint farm work, and mechanized farming were cited in that order. Among the dem-farm operators, those who cited fertilizer application, disease and insect pest control and variety were the largest and equal in number, followed by those who gave high evaluation to the effect of joint farming. Further, the great majority of the respondents who gave mechanized farming as the cause of yield increase were dem-farm operators.
4. The aggregate average yield is 5. 6 t which is higher than the average yield in most of the survey areas. The average yield of dem-farm operators exceeds 6 t which is higher than is attained by non-operators.
5. However, the annual average yield of dem-farm operators has been on the deline with the increase of demonstration farms, whereas that of non-operators is on the gradual increase. If this tendency maintains itself, the yield relationship between the two groups of farmers will be reversed in future.
6. Nevertheless, the annual number of farmers with an average yield of more than 6 t is apparently closely related to the year of establishment of demonstration farms, and has increased in parallel with the establishment of demonstration farms.
7. Non-dem farm operators cited earlier years as having marked a yield increase, suggesting that their yield has been on the gradual increase, whereas the years of yield increase given by dem-farm operators evidently coincidened with the time of their participation in dem-farm operation.
8. The changes in the number of demonstration farms and yield and the increase of high yielding farmers (more than 6 t) are graphically illustrated on page 122.

9. Respondents' Participation in Kelompok Tani (Farmers' Voluntary Organization)

Item \ Survey Area			Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
					Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
			D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
No. of Participants/Non-Participants	Participants		25	1	10	1	10		20	1	21	10	4	10	3	20	7	27	65	9	74
	Non-Participants			22		9		10		19	19				5		5	5		46	46
	Unknown			2									6		2		8	8		10	10
	Total		25	25	10	10	10	10	20	20	40	10	10	10	20	20	40	65	65	120	
Annual Number of Participants	Before 1968																				
	1968	New																			
		Cumulative Total																			
	1969	New																			
		Cumulative Total																			
	1970	New	1			1				1	1								1	1	2
		Cumulative Total	1			1				1	1								1	1	2
	1971	New	6																6		6
		Cumulative Total	7			1				1	1								7	1	8
	1972	New	11		10				10		10	8				8		8	29		29
		Cumulative Total	18		10	1			10	1	11	8				8		8	36	1	37
	1973	New	4				10		10		10	1	1	8	3	9	4	13	23	4	27
		Cumulative Total	22		10	1	10		20	1	21	9	1	8	3	17	4	21	59	5	64
	1974	New	2											2		2	1	3	4	1	5
		Cumulative Total	24		10	1	10		20	1	21	9	2	10	3	19	5	24	63	6	69
	Unknown		1	1								1	2			1	2	3	2	3	5
	Total		25	1	10	1	10	-	20	1	21	10	4	10	3	20	7	27	65	9	74

	Item \ Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Annual Number of Participations	Less than 3 times											1				1	1		1	1
	3 ∿ 4 times													1		1	1		1	1
	5 ∿ 6 "				1				1	1	3		2	1	5	1	6	5	2	7
	7 ∿ 8 "			2		1		3		3								3		3
	9 ∿ 10 "	1		5		1		6		6	1				1		1	8		8
	11 ∿ 12 "	11		3		8		11		11			7	1	7	1	8	29	1	30
	More tha 13 times	12									6		1		7		7	19		19
	Unknown	1	1									3				3	3	1	4	5
	Total	25	1	10	1	10	-	20	1	21	10	4	10	3	20	7	27	65	9	74
	Average	19.42	-	9.90	6.00	11.3	-	10.60	6.00	8.30	12.3	2.00	10.80	7.33	11.55	4.67	8.11	13.86	5.34	9.60
Number of Participations by Type of Joint Work	Joint Seedling Rading	25		10		10		20		20	9	1	9	1	18	2	20	63	2	65
	Joint Nursery Bed Fertilization	22		10		10		20		20	9		7	1	15	1	17	58	1	59
	Joint Control of Seedling Diseases and Insect Pests	25		10		10		20		20	10		10	3	20	3	23	65	3	68
	Joint Seed Purchase	25		9		10		19		19	9		9	1	18	1	19	62	1	63
	Joint Plant Protection	23		4		9		9		9	5	1	7	1	12	2	14	44	2	46
	Joint Plowing	22	1	4		10		14		14	9		9	2	18	2	20	54	3	57
	Joint Disease and Insect Pest Control	25		10		10		20		20	9	3	10	3	19	6	25	64	6	70
	Joint Water Management	25	1	2		9		11		11	8	1	10	2	18	3	21	30	3	33
	Joint Fertilizer Application	25		10		9		19		19	8	1	7	2	15	3	18	59	3	62
	Joint Rice Milling	18		-		-					1		-	-	1		1	19		19
	Unknown	-		-	1				1	1									1	1
	Total	25	1	10	1	10	-	20	1	21	10	4	10	3	20	7	27	65	9	74

Item \ Survey Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Number of Joint Operations Conducted	10	14																14		14
	9	9				8		8		8	4		6		10		10	27		27
	8			2		1		3		3	3		1	1	4	1	5	7	1	8
	7	2		6		1		7		7			1		1		1	10		10
	6			1				1		1	2			1	2	1	3	3	1	4
	5			1				1		1	1		1		2		2	3		3
	4												1		1		1	1		1
	3											1				1	1		1	1
	2		1									1		1		2	2		3	3
	1											2				2	2		2	2
	Unknown				1				1	1									1	1
	Total	25	1	10	1	10	-	20	1	21	10	4	10	3	20	7	27	65	9	74

Notes:
1. Since Kelompok is organized for operation of demonstration farms, all dem-farm operating respondents stated that they are its members, but 14% of non-operators also identified themselves as Kelompok participants.
2. Quite naturally, Kelompoks have been organized increasingly with the establishment of demonstration farms (See the diagram of farm households participating in Kelompok shown on page 126.
3. 73.8% of the Kelompok members participate in the joint operation once a month of oftener, and the remainder of the members who are dem-farm operators once in two months.
4. When asked about the kind of joint operation they participate in, more than 90% of the dem-farm operating Kelompok members cited joint disease and insect pest control of nursery bed, joint disease and insect pest control of paddy field, joint seedling raising, joing seed purchase, and joint fertilization of nursery bed in that order. These joint operations were followed by joint plowing (80%), joint plant protection (70%), and joint water management (70%). Joint rice milling, conducted only in Cihea area, was cited by 30% of all Kelompok members.
5. 63% of dem-farm operating members stated that they participate in all joint operations excepting rice milling, and 90% of all members said that they participate in more than 70% of all joint operations.
6. In the coming years, it will be important to promote the Kelompok activities without resorting to the establishment of demonstration farms.

10. Utilization of Demonstration Farms by Respondents

Item / Survey Area			Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
					Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
			D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Number of Users/ Non-Users	User		25	21	10	3	10	1	20	4	24	10	5	10	5	20	10	30	65	35	100
	Non-Users					1		9		10	10				1		1	1		11	11
	Unknown			4		6				6	6		5		4		9	9		19	19
	Total		25	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130
Annual Number of Users	1971	D. New	2									2				2		2	4		4
		D. Cumulative Total	2									2				2		2	4		4
		W. New	18	10									2				2	2	18	12	30
		W. Cumulative Total	20	10								2	2			2	2	4	22	12	34
	1972	D. New	4	6								1	1			1	1	2	5	7	12
		D. Cumulative Total	24	16								3	3			3	3	6	27	19	46
		W. New	1	3	10				10		10	6	2			6	2	8	17	5	22
		W. Cumulative Total	25	19	10				10		10	9	5			19	5	14	44	24	68
	1973	D. New		2		1	10	1	10	2	12				1		1	1	10	5	15
		D. Cumulative Total	25	21	10	1	10	1	20	2	22	9	5		1	9	6	15	54	29	83
		W. New										1		10	4	11	4	15	11	4	15
		W. Cumulative Total	25	21	10	1	10	1	20	2	22	10	5	10	5	20	10	30	65	33	98
	1974	D. New																			
		D. Cumulative Total	25	21	10	1	10	1	20	2	22	10	5	10	5	20	10	30	65	33	98
	Unknown					2				2	2									2	2
	Total		25	21	10	3	10	1	20	4	24	10	5	10	5	20	10	30	65	35	100

	Survey Area / Item	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Contents	Variety Selection and Guidance	25	9	10	2	10		20	2	22	10	2	10	3	20	5	25	65	16	81
		25	14	10	3	10		20	3	23	10	2	10	4	20	6	26	65	23	88
	Transplanting Method	25	12	9		10	1	19	1	20	10	1	9	3	19	4	23	63	17	80
	Plowing Method	22	-	1				1		1	2		8	2	10	2	12	33	2	35
	Disease and Insect Pest Control Method	25	14	10	2	10		20	2	22	10	1	10	4	20	5	25	65	21	86
	Water Management	24	10	6		10		16		16	7		9	3	16	3	19	56	13	69
	Unknown		7									3				3	3		10	10
Number by Items	6 Items			1				1		1	2		7	2	9	2	11	10	2	12
	5 Items	21	8	5		10		15		15	5		2	1	7	1	8	53	9	62
	4 Items	4	3	3				3		3	3	1	1		4	1	5	11	4	15
	3 Items		1	1	1			1	1	2								1	2	3
	2 Items		2		2				2	2		1		1		2	2		6	6
	1 Item						1		1	1									1	1
	Unknown		7									3				3	3		10	10
	Total	25	21	10	3	10	1	20	4	24	10	5	10	5	20	10	30	65	35	100

Notes: 1. Dem-farm operators naturally registered a 100% utilization rate, but non-operators also recorded as high a utilization rate as 54%.

2. Increase of users who are not dem-farm operators is approximately proportionate to that of demonstration farms (See page 126 for the diagram showing the increase of farmers knowing demonstration farms).

3. More than half of the users who are not dem-farm operators cited their respective purposes of utilization which are, in order of decreasing frequency, fertilizer application method, disease and insect pest control method, transplanting method, variety selection and guidance, and water management. Further, more than 30% of such users cited more than five purposes of utilization.

4. It can therefore be concluded that the demonstration farm operation has given extension effect upon about half of non-dem-farm operating respondents and also resulted in the actual diffusion of improved techniques among about 30% of them.

11. Utilization of Extension Centers by Respondents

Item			Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
						Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
				D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Number of Users/ Non-Users	Users			0	14		7	8		8	7	15	10	7	4	3	14	10	24	42	31	73
	Non-Users			5	6	10			10	10	10	20			1	2	1	2	3	16	18	34
	Unknown				5		3	2	-	1	3	5		3	5	5	5	8	13	7	16	23
	Total			15	25	10	10	10	10	20	20	40	10	10	10	10	20	20	40	65	65	130
Annual Number of Users	1971	D.	New	3	2															3	2	5
			Cumulative Total	3	2															3	2	5
		W.	New	4	2		1				1	1								4	3	7
			Cumulative Total	7	4		1				1	1								7	5	12
	1972	D.	New	8	3									4				4	4	8	7	15
			Cumulative Total	15	7		1				1	1		4				4	4	15	12	27
		W.	New	1	3		2				2	2	2				9		9	10	5	15
			Cumulative Total	16	10		3				3	3	9	4			9	4	13	25	17	42
	1973	D.	New	2	3		1	8		8	1	9	1	1	1	1	2	2	4	12	6	18
			Cumulative Total	18	13		4	8		8	4	12	10	5	1	1	11	6	17	37	23	60
		W.	New	2	1		1				1	1		1	3	2	3	3	6	5	5	10
			Cumulative Total	20	14		5	8		8	5	13	10	6	4	3	14	9	23	42	28	70
	1974	D.	New																			
			Cumulative Total	20	14		5	8		8	5	13	10	6	4	3	14	9	23	42	28	70
	Unknown						2				2	2		1				1	1		3	3
	Total			20	14		7	8		8	7	15	10	7	4	3	14	10	24	42	31	73

Notes: 1. Users of extension centers account for 56% of all respondents.

2. *Users' percentage is 65% for dem-farm operators and 48% for non-operators.*

12. Method and Leader of Extension Activities by Item

Item	Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpuncung		Tambun		Sub-Total					
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Introduction of Improved Varieties	Extension Work	11	1	10	10	10	3	20	13	33	9	7	9	9	18	16	34	49	30	79
	Desa Leader		1	9	7	7	1	16	8	24		1	9	7	9	8	17	25	17	42
	Cihea Center's Staff	10	9				1		1	1								19	10	29
	Kecamatan Leader			10	7			10	7	17	2	3	3	4	5	7	12	15	14	29
	Other Leader											3		3		6	6		6	6
	Study Course	5				1	1	1	1	2	5			1	5	1	6	11	2	13
	Demonstration Farm Utilization	12	3	3		7		10		10	8	4		1	8	5	12	30	8	38
	Key Farmer	2	2	1	5	5		6	5	11	4	4	8	5	12	9	21	20	16	36
	Neighbouring Farmer	5	12		10		1		11	11		4				4	4	5	27	32
	Relative																			
	Total	54	28	33	39	30	7	63	46	109	28	26	29	30	57	56	113	174	130	304
	No Anser	1	6				5		5	5	1			1	1	1	2	2	12	14
BIMAS	Extension Worker	7	12	8	8	10	1	18	9	27	9	5	5	10	14	15	29	39	36	75
	Desa Leader	12	10	9	7	10	3	19	10	29		3	6	8	6	11	17	37	31	68
	Kecamatan Leader	6	7	9	4	3	1	12	5	17	7	3	3	9	10	12	22	28	24	52
	BIMAS' Staff	1	1		6	3	2	3	8	11	7	2	2	6	9	8	17	13	17	30
	Other Leader				1				1	1	1			1	1	1	2	1	2	3
	Key Farmer		1		1	6		6	1	7	4	2	4	4	8	6	14	14	8	22
	Neighbour	11	11		4				4	4		2				2	2	11	17	28
	Relative	2	7															2	7	9
	Others												1		1		1	1		1
	Total	39	49	26	31	32	7	58	38	96	28	17	21	38	49	55	104	146	142	288
	No Answer	4	1	1	1		3	1	4	5			4		4		4	9	5	14

Item \ Survey Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D. F	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Introduction of Paddy Cultivation Equipment	Extension Worker	11	1	10	6	10		20	6	26	9	2	10	9	19	11	30	50	18	68
	Desa Leader			10	3	6	2	16	5	21			9	7	9	7	16	25	12	27
	Cihea Center's Staff	22	10															22	10	32
	Other Leader			10	4			10	4	14		1	2	1	2	2	4	12	6	18
	Study Course	10				7		7		7	8			1	8	1	9	25	1	26
	Key Farmer	16	12	6	2	10		16	2	18	10	1	1	2	11	3	14	43	17	60
	Key Farmer				3	6		6	3	9	4		8	5	12	5	17	18	8	26
	Neighbour	1	2		3	2		2	3	5				1		1	1	3	6	9
	Relative					1		1		1								1		1
	Others																			
	Total	60	25	36	21	42	2	78	23	101	31	4	30	26	61	30	91	199	78	277
	No Answer	1	7		3		8		11	11		8		1		9	9	1	27	28
Fertilizer Application	Extension Worker	2	2	5	7	10	1	15	8	23	10	10	10	10	20	20	40	37	30	67
	Desa Leader			10	7	10	3	20	10	30	1	1	10	8	11	9	20	31	19	50
	Cihea Center's Staff	25	22				4		4	4								25	26	51
	BIMAS' Staff	1			7	5	1	5	8	12	6	3		2	6	5	11	12	13	25
	Kecamatan Leader			10	5	1		11	5	16	4	1	4	2	8	3	11	19	8	27
	Study Course	1				4		3		3	7			1	7	1	8	11	1	12
	Demonstration Farm Utilization	1				10		10		10	9	2	1	2	10	4	14	21	4	25
	Key Farmer	1	1		3	4		4	3	7	4	2	9	6	13	8	21	18	12	30
	Neighbour	1	3		8		1		9	9		6				6	6	1	18	19
	Relative	1																1		1
	Fertilizer Dealer			8	4	5		13	4	17								13	4	17
	Others											1				1	1		1	1
	Total	33	28	33	41	48	10	81	51	132	41	26	34	31	75	57	132	189	136	325
	No Answer																			

	Item \ Survey Area	Cihea		Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total			Grand Total		
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Kelompok Tani	Extension Worker	13	8	10	2	10	10	20	12	32	10	3	10	3	20	6	26	63	26	79
	Desa Leader			10	1	8		18	1	19			10	2	10	2	12	28	3	31
	Cihea Center's Staff	22	10															22	10	32
	Other Leader			10	2			10	2	12	2		1		3		3	13	2	15
	Key Farmer	3		5		9		14		14	9		10	3	15	3	18	32	3	35
	Neighbour	4	7	1	1			1	1	2								5	8	13
	Relative	1	1															1	1	2
	Others																			
	Total	43	26	36	6	27	10	63	16	79	17	3	31	8	48	11	59	154	53	207
	No Answer		14		7				7	7		7		7		14	14		35	35
Application of Agro-chemicals	Extension Worker	1	5	11	8	10	1	11	9	20	10	10	10	9	20	19	39	35	33	68
	Desa Leader			10	4	10	3	20	7	27	1		10	8	11	8	19	31	15	46
	Cihea Center's Staff	21	22				2		2	2								21	24	45
	BIMAS' Staff		1		4	1	3	1	7	8	6	3		2	6	5	11	7	13	20
	Other Leader			9	4			9	4	13	2	1			2	1	3	11	5	16
	Study Course				2	5		5	2	7	7			1	7	1	8	12	3	15
	Demonstration Farm Utilization	2				10		10		10	9	2	1	2	10	4	14	22	4	26
	Key Farmer		1		2	6		6	2	8	3	1	9	9	12	6	18	18	9	27
	Neighbour	3	5		7				7	7		4				4	4	3	16	19
	Relative	1	1															1	1	2
	Agro-chemicals Dealer			8	5	1		9	5	14								9	5	14
	Others																			
	Total	31	35	28	36	43	9	71	45	116	38	21	30	27	68	48	116	170	128	298
	No Answer	1	1				1		1	1				1		1	1	1	3	4

	Item \ Survey Area	Cihea		Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total			Grand Total		
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Demonstration Farm	Extension Worker	11	7	9	4	10	9	19	13	32	10	5	10	4	20	9	29	50	29	79
	Desa Leader			9	1	3		12	1	13			10	4	10	4	14	22	5	27
	Cihea Center's Staff	20	12															20	12	32
	Other Leader			10	4			10	4	14	2		1		3		3	13	4	17
	Study Course	8	1			5		5		5	6		2		8		8	21	1	22
	Key Farmer	3	1	3	1	7		10	1	11	4	2	10	2	14	4	18	27	6	33
	Neighbour	3	9															3	9	12
	Relative	2	2															2	2	12
	Others	4	6				1		1	1	5	2	1	3	6	5	11	10	12	22
	Total	51	38	31	10	25	10	56	20	76	27	9	34	13	61	22	83	168	80	248
	No Answer		6		5				5	5		5		5		10	10		21	21
Extension Center	Extension Worker	19	11		7	10	7	10	14	24	9	5	6	4	15	9	24	44	34	78
	Desa Leader				3	3		3	3	6			4	1	4	1	5	7	4	11
	Cihea Center's Staff	18	8															18	8	26
	Other Leader				5				5	5	2	1		1	2	2	4	2	7	9
	Key Farmer		1		2	7		7	2	9	4	1	4	1	8	2	10	15	5	20
	Neighbour		2		1				1	1									3	3
	Relative		1																1	1
	Others																			
	Total	37	23		18	20	7	20	25	45	15	7	14	7	29	14	44	86	62	148
	No Answer	3	11	10	1		3	10	4	14	1	5	4	6	5	11	16	18	26	44

Item		Survey Area	Cihea		Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total			Grand Total		
			D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Total	Leader	Extension Worker	78	47	53	52	80	32	133	84	217	76	56	64	58	140	114	25	351	245	596
		Desa Leader	12	11	67	33	57	12	124	45	169	2	5	68	45	70	50	120	206	106	312
		Cihea Center's Staff	147	93				7		7	7								147	100	247
		BIMAS' Staff	2	2		17	9	6	9	23	32	19	8	2	10	21	18	39	32	43	7
		Kecamatan Leader	6	7	29	16	1	1	30	17	47	13	7	10	15	23	22	45	59	46	105
		Others			39	20			39	20	59	9	6	4	8	13	14	27	52	34	86
		Sub-Total	245	160	188	138	147	58	335	196	531	119	82	148	136	267	218	485	847	574	1421
	Training in Advanced Techniques	Study Course	24	1		2	21	1	21	3	24	33		2	4	35	4	39	80	8	88
		Demonstration Farm	31	15	9	2	37		46	2	48	36	9	3	7	39	16	55	116	33	149
		Sub-Total	55	16	9	4	58	1	67	5	72	69	9	5	11	74	20	94	196	41	237
	Merchant Providing Data and Information	Fertilizer Dealer			8	4	5		13	4	17								13	4	17
		Agro-chemicals Dealer			8	5	1		9	5	14								9	5	14
		Sub-Total			16	9	6		22	9	31								22	9	31
	Neighbour and Relative	Key Farmer	9	7	9	17	50		59	17	76	32	12	62	31	94	43	137	162	67	229
		Neighbour and Relative	28	51	1	34	2	1	3	35	38		16		1		17	17	31	103	134
		Relative	7	12			1		1		1								8	12	20
		Sub-Total	44	70	10	51	53	1	63	52	115	32	28	62	32	94	60	154	201	182	383
Others			4	6				1		1	1	5	3	2	3	7	6	13	11	13	24
Total			348	252	223	204	264	61	487	263	750	225	122	218	182	442	304	746	1277	819	2096
No Answer			10	46	11	17	-	20	11	37	48	2	25	8	20	10	45	55	31	128	159

13. Item-wise Average Number of Extension Methods per Respondent

Item \ Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
			Cibeber		Gunonghalu		Sub-Total			Telkpucung		Tambun		Sub-Total					
	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D	Total
Introduction of Improved Varieties	2. 25	1. 47	3. 30	3. 90	3. 00	1. 40	3. 15	3. 06	3. 11	3. 11	2. 60	2. 90	3. 33	3. 00	2. 95	2. 97	2. 76	2. 45	2. 62
Participation in BIMAS	1. 95	20. 4	28. 9	3. 44	3. 20	1. 00	3. 05	2. 38	2. 74	2. 80	1. 70	2. 50	3. 80	3. 06	2. 75	2. 89	2. 61	2. 37	2. 48
Improvement of Farm Work	2. 50	1. 39	3. 60	3. 00	4. 20	1. 00	3. 90	2. 56	3. 48	3. 10	2. 00	3. 00	2. 89	3. 05	2. 73	2. 94	3. 11	2. 05	2. 72
Application of Fertilizers	1. 32	1. 12	3. 30	4. 10	4. 80	1. 00	4. 05	2. 55	3. 30	4. 10	2. 60	3. 40	3. 10	3. 75	2. 85	3. 30	2. 91	2. 09	2. 50
Application of Agro-chemicals	1. 29	1. 46	2. 80	3. 60	4. 30	1. 00	3. 55	2. 37	2. 97	3. 80	2. 10	3. 00	3. 00	3. 40	2. 53	2. 97	2. 66	2. 06	2. 37
Kelompok Activities	1. 72	2. 36	3. 60	2. 00	2. 70	1. 00	3. 15	1. 23	2. 39	1. 70	1. 00	3. 10	2. 67	2. 40	1. 83	2. 27	2. 37	1. 77	2. 18
Demonstration Farm Operation	2. 04	2. 00	3. 10	2. 00	2. 50	1. 00	2. 80	1. 33	2. 17	2. 70	1. 80	3. 40	2. 60	3. 05	2. 20	2. 77	2. 58	1. 82	2. 28
Extension Center	1. 68	1. 64	-	2. 00	2. 00	1. 00	2. 00	1. 56	1. 73	1. 67	1. 40	2. 33	1. 75	1. 93	1. 56	1. 79	1. 83	1. 59	1. 72
Aggregate Average	1. 83	1. 63	3. 23	3. 24	3. 30	1. 02	3. 27	2. 14	2. 76	2. 88	2. 22	3. 01	3. 03	2. 95	2. 64	2. 82	2. 61	2. 09	2. 38

14. Ratios of Respective Extension Methods in Percentages

Item \ Survey Area		Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	D. F.	N. D.	D. F.	N. D.	Total	D. F.	N. D.	Total
Leader	Extension Worker	22.4	18.7	23.8	23.3	30.3	52.5	27.3	31.9	28.9	33.8	45.9	29.5	31.9	31.7	37.5	34.0	27.5	29.9	28.4
	Desa Leader	3.4	4.4	30.0	14.8	21.6	19.7	25.5	17.1	22.5	0.9	4.1	31.3	24.7	15.8	16.4	16.1	16.1	12.9	14.9
	Cihea Center's Staff	42.2	36.9				11.5		2.7	0.9								11.5	12.2	11.8
	BIMAS' Staff	0.6	0.8		7.6	3.4	9.8	1.8	8.7	4.3	8.4	6.6	0.9	5.5	4.8	5.9	5.2	2.5	5.3	3.6
	Kecamatan Leader	1.7	2.8	13.0	7.2	0.4	1.6	6.2	6.5	6.3	5.8	5.7	4.6	8.2	5.2	7.2	6.0	4.6	5.6	5.0
	Others	-		17.5	9.0			8.0	7.6	7.9	0.4	4.9	1.8	4.4	2.9	4.6	3.6	4.1	4.6	4.1
	Sub-Total	70.4	63.5	84.3	61.9	55.7	95.1	68.8	74.5	70.8	52.9	67.2	68.2	74.7	60.4	71.7	65.0	66.3	70.1	67.8
Training in Advanced Techniques	Study Course	6.9	0.4		0.9	8.0	1.6	4.3	1.1	3.2	14.7		0.9	2.2	7.9	1.3	5.2	6.2	1.0	4.2
	Demonstration Farm Utilization	8.9	6.0	4.0	0.9	14.0		9.4	0.7	6.4	16.0	7.4	1.4	3.8	8.8	5.2	7.4	9.1	4.0	7.1
	Sub-Total	15.8	6.4	4.0	1.8	22.0	1.6	13.8	1.9	9.6	30.7	7.4	2.3	6.0	16.7	6.6	12.6	15.3	5.0	11.3
Merchant Providing Data and Information	Fertilizer Dealer	-	-	3.6	1.8	1.9	-	2.7	1.5	2.3	-	-	-	-	-	-	-	1.0	0.5	0.8
	Agro-chemicals Dealer	-	-	3.6	2.2	0.4	-	1.8	1.9	1.9	-	-	-	-	-	-	-	0.7	0.6	0.6
	Sub-Total	-	-	7.2	4.0	2.3	-	4.5	3.4	4.1	-	-	-	-	-	-	-	1.7	1.1	1.5
Neighbour and Relative	Key Farmer	2.6	2.8	4.0	7.6	18.9		12.1	6.4	10.1	14.2	9.8	28.6	17.0	21.3	14.1	18.4	12.7	8.2	10.9
	Neighbour	8.0	20.2	0.4	15.2	0.8	1.6	0.6	13.3	5.1		13.1		0.5		5.6	2.3	2.4	12.6	6.4
	Relative	2.0	4.8	-		0.4		0.2		0.1								0.6	1.5	1.0
	Sub-Total	12.6	27.8	4.4	22.9	20.1	1.6	12.9	19.8	15.3	14.2	23.0	28.6	17.6	21.3	19.7	20.6	15.7	22.2	18.3
Others		1.1	2.4				1.6		0.4	0.1	2.2	2.5	0.9	1.6	1.6	2.0	1.7	0.9	1.6	1.1
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

15. Item-wise Ratios of Extension Methods in Percentages

Extension Item \ Extension Method	Leaders							Training in Advanced Techniques			Merchant Providing Data & Information			Sub-Total				Others	Total
	Extension Worker	Desa Leader	Cihea Center's Staff	BIMAS' Staff	Kecamatan Leader	Other Leaders	Sub-Total	Study Course	Demonstration Farm Utilization	Sub-Total	Fertilizer Dealer	Agro-chemicals Dealer	Sub-Total	Key Farmer	Neighbour	Relative	Sub-Total		
Introduction of Improved Varieties	26.0	13.8	9.5	-	9.5	2.0	60.8	4.3	12.5	16.8	-	-	-	11.8	10.5		22.3	-	100.0
Participation in BIMAS	26.0	23.6	-	10.4	18.1	1.0	79.1	-	-	-	-	-	-	7.6	9.7	3.1	20.4	0.3	100.0
Improvement of Farm Work	24.5	13.4	11.5	-	-	6.5	55.9	8.4	21.7	31.1	-	-	-	9.4	3.2	0.4	13.0	-	100.0
Application of Fertilizers	20.6	15.4	15.7	7.7	8.3	-	67.7	3.7	7.7	11.4	5.2	-	5.2	9.2	5.8	0.3	15.3	0.3	100.0
Application of Agro-chemicals	22.8	15.4	15.1	6.7	-	5.3	65.3	5.0	8.7	13.7	-	4.5	4.5	9.1	6.4	0.7	16.2	-	100.0
Kelompok Joint Operation	38.2	15.0	15.5	-	-	2.2	75.9	-	-	-	-	-	-	16.9	6.3	1.0	24.2	-	100.0
Demonstration Farm Operation and Utilization	31.9	10.9	12.9	-	-	6.9	62.6	6.9	-	6.9	-	-	-	13.3	4.8	1.6	19.7	8.9	100.0
Extension Center	52.7	7.4	17.6	-	-	6.1	83.8	-	-	-	-	-	-	13.5	2.0	0.7	16.2	-	100.0
Total	28.4	14.3	11.8	3.6	5.0	4.1	67.8	4.2	7.1	11.3	0.8	0.6	1.5	10.9	6.4	1.0	18.3	1.1	100.0

Notes:
1. When asked about the source of new agricultural information, leaders were cited by 68% of all respondents, exchange of data with friends and neighbours by 18% and training courses for extension by 11%. It was found that the respondents have an average of 2.4 sources of new information per person.
2. The respondents rely on the leaders more for information and guidance on BIMAS participation, Kelompok activities and extension centers than for other information, whereas the information on improved varieties, BIMAS participation, Kelompok activities, and demonstration farm operation occupies higher percentages than the average in the data exchanged between friends and neighbours. In study courses and demonstration farm participation, information on improved varieties, farm work improvement, fertilizer application and agro-chemicals application is sought in higher percentages than the average.
3. Comparison of the sources of information between dem-farm operators and non-operators disclosed that the non-operators depend more on the leaders and neighbours than the dem-farm operators, and resort less to study courses and demonstration farm participation. The dem-farm operators' reliance on leaders and friends, which is not so heavy than that of non-operators, is made up for by their dependence on study courses and demonstration farm participation. As for the exchange of information between fellow farmers, the dem-farm operators' dependence on key farmers is high but the non-operators rely more on neighbours than on key farmers, and the ratios of dependence on these two sources are approximately equal.
4. The average number of sources of new information per respondent is the largest for farm work improvement, followed by introduction of improved varieties, fertilizer application and agro-chemicals application, with the farm work improvement of dem-farm operators registering the largest number of sources and the extension center utilization by non-operators the smallest number of sources.
5. In general, dem-farm operators resort to a larger number of sources than non-operators.
6. It can be concluded from the above data that although the number of extension methods per farmer is quite large, the leaders, specially extension workers, are most heavily depended upon and requested to, provide various information. Also, the fact that the ratio of dependence on fellow farmers is less than one-third of the ratio of dependence on leaders indicates that the routes of extension are not established in such a way as will produce areal diffusion of improved techniques.

16. Free Answer Column (Problems Currently Encountered by Respondents)

Item	Survey Area	Cihea		Kabupaten Cianjur							Kabupaten Bekasi							Grand Total		
				Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total					
		D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Improved Varieties	Damage of continuous cropping	3																3		3
	Degradation of Pelita			1				1		1		1				1	1	1	1	2
	Difficulty in securing improved varieties			4				4		4								4		4
	Sub-Total	3		5				5		5		1				1	1	8	1	9
Diseases and Insect Pests	Extremely heavy damage of disease and insect pests		5	1			9	1	9	10	3	1	4	1	7	2	9	8	16	24
	Heavy damage of insect pests	1											5	3	5	3	8	6	3	9
	Heavy damage of stem borers	1												2		2	2	1	2	3
	Heavy damage of gall midge	1																1		1
	Heavy damage of mentek		1																1	1
	Heavy rodent damage	2				10		10		10			2	7	2	7	9	14	7	21
	Difficulty in determing the time and duration of control measures	2												2		2	2	2	2	4
	Deficient joint control measures	1																1		1
	Shortage of chemicals	1	5	1	2			1	2	3		1				1	1	2	8	10
	Sub-Total	9	11	2	2	10	9	12	11	23		1	7	14	7	15	22	35	39	74
Fertilization and Irrigation	Shortage of fertilizer supply											1				1	1		1	1
	Poor water management	3	4	2			5	2	5	7		1		1		2	2	5	11	16
	Shortage of irrigation water			2	1			2	1	3	7		8	6	15	6	21	17	7	24
	Poor drainage			1				1		1		1				1	1	1	1	2
	Poor irrigation facilities											1				1	1		1	1
	Sub-Total	3	4	5	1		5	5	6	11	7	3	8	7	15	10	25	23	20	43
Agricultural Machinery and Equipment	Poor availability of leased tractors				1				1	1									1	1
	Shortage of farm machinery and equipment	1	2		1				1	1		4				4	4	1	7	8
	Inability to lease farm machinery and equipment	1		2		1		3		3								4		4
	Shortage of sprayers and dusters	6	9		5	9		9	5	14	1	2	1		2	2	4	17	16	33
	Shortage of weeders					8		8		8		1				1	1	8	1	9
	Inability to apply farm machinery and equipment(refilling & plowing)	3																3		
	Sub-Total	11	11	2	7	18		20	7	27	1	7	1		2	7	9	33	25	58

	Item \ Survey Area	Cihea		Cibeber		Gunonghalu		Sub-Total			Telukpucung		Tambun		Sub-Total			Grand Total		
		D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	D.F.	N.D.	D.F.	N.D.	Total	D.F.	N.D.	Total
Labour Force	Unsatisfactory joint operation	2				1		1		1								3		3
	Shortage of labour force	1		5				5		5		3				3	3	6	3	9
	Shortage of draught animals											3				3	3		3	3
	Inability to unify transplanting time												1		1		1	1		1
	Sub-Total	3		5		1		6		6		6	1		1	6	7	10	6	16
Agricultural Management	Shortage of management fund				7				7	7		1		1		2	2		9	9
	High price of agro-chemicals	1	2								1				1		1	2	2	4
	High price of fertilizers	1	1															1	1	2
	Low selling price of paddy			1				1		1								1		1
	Delay in the supply of BIMAS equipment and materials	12		5					5	5									17	17
	Difficulty in obtaining production equipment and materials	1			1			1		1								2	2	4
	Sub-Total	4	16	1	12	1		2	12	14	1	1		1	1	2	3	6	31	37
	No Answer	8	3								2				2		2	10	3	13

Notes: 1. 80% of all respondents filled the free answer column, and 13 respondents left it unfilled. Since a total of 237 answers were given by 52 respondents, the average number of answers given per person was 4.6.

2. Problems relating to disease and insect pest control registered the highest completion rate of 142.3%, which means that 3 answers were given by each two respondents. This was followed by 111.5% of agricultural machinery and equipment, 82.7% of irrigation problems, 71.2% of agricultural management, 30.8% of labour force problems, and 17.3% of improved varieties.

3. Damages of diseases and insect pests were reported to be heavy, and the respondents' concern is focused on the rodent damage.

4. Among the problems of mechanized farming, shortage of machines and equipment was felt by many respondents. In particular, shortage of sprayers and dusters was complained of by many respondents as a problem bearing on the control of diseases and insect pests.

5. In the aspect of irrigation, there were many respondents, specially in Kabupaten Bekasi, who suffered from the shortage of water.

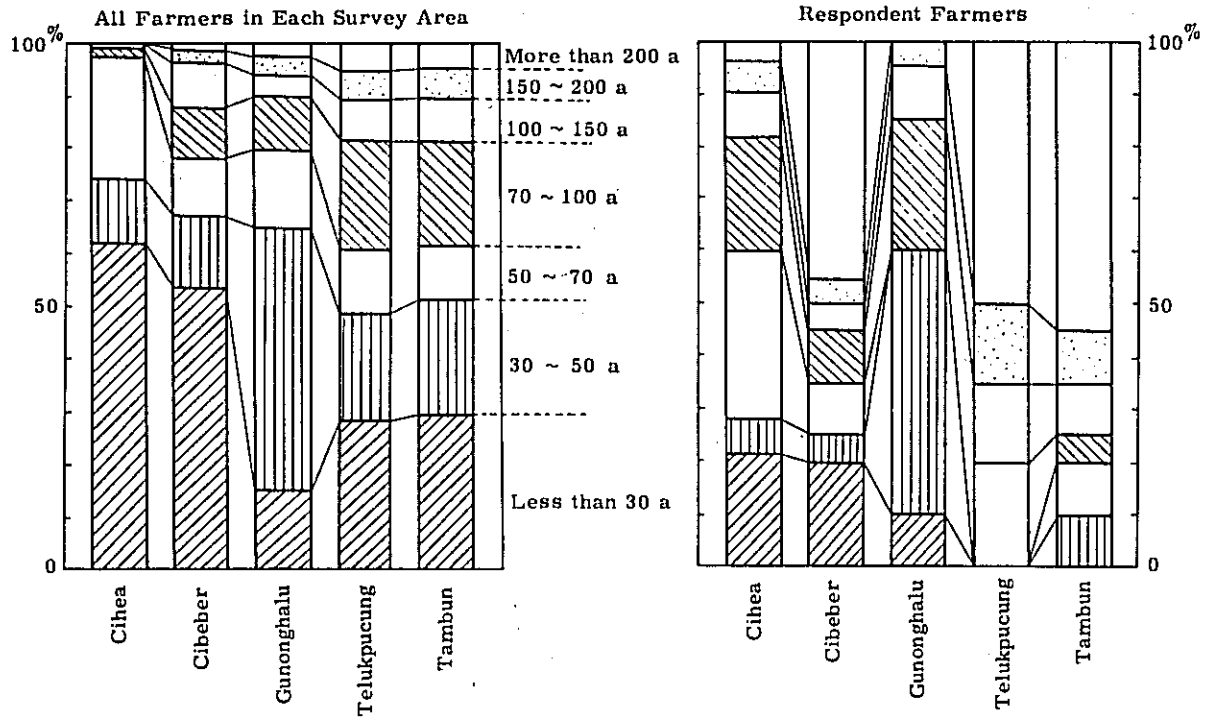
6. As for the problems of agricultural management, many respondents, particularly those in Kabupaten Cianjur, complained of the delayed delivery of BIMAS equipment and materials.

7. Shortage of labour force was notable in Kabupaten Bekasi, and difficulty in obtaining seeds of improved varieties in Kabupaten Cianjur.

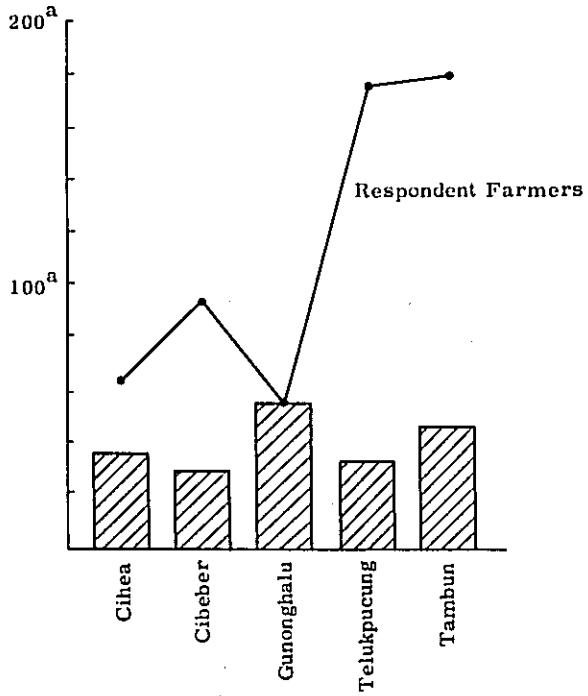
8. The high completion rate of a free answer column of this kind indicates that the respondent farmers are eager to absorb advanced agricultural knowledges and information or have no adequate route or means through which to ask for assistance in solving the prlblems they are faced with.

III. Graphic Illustration of Survey Data

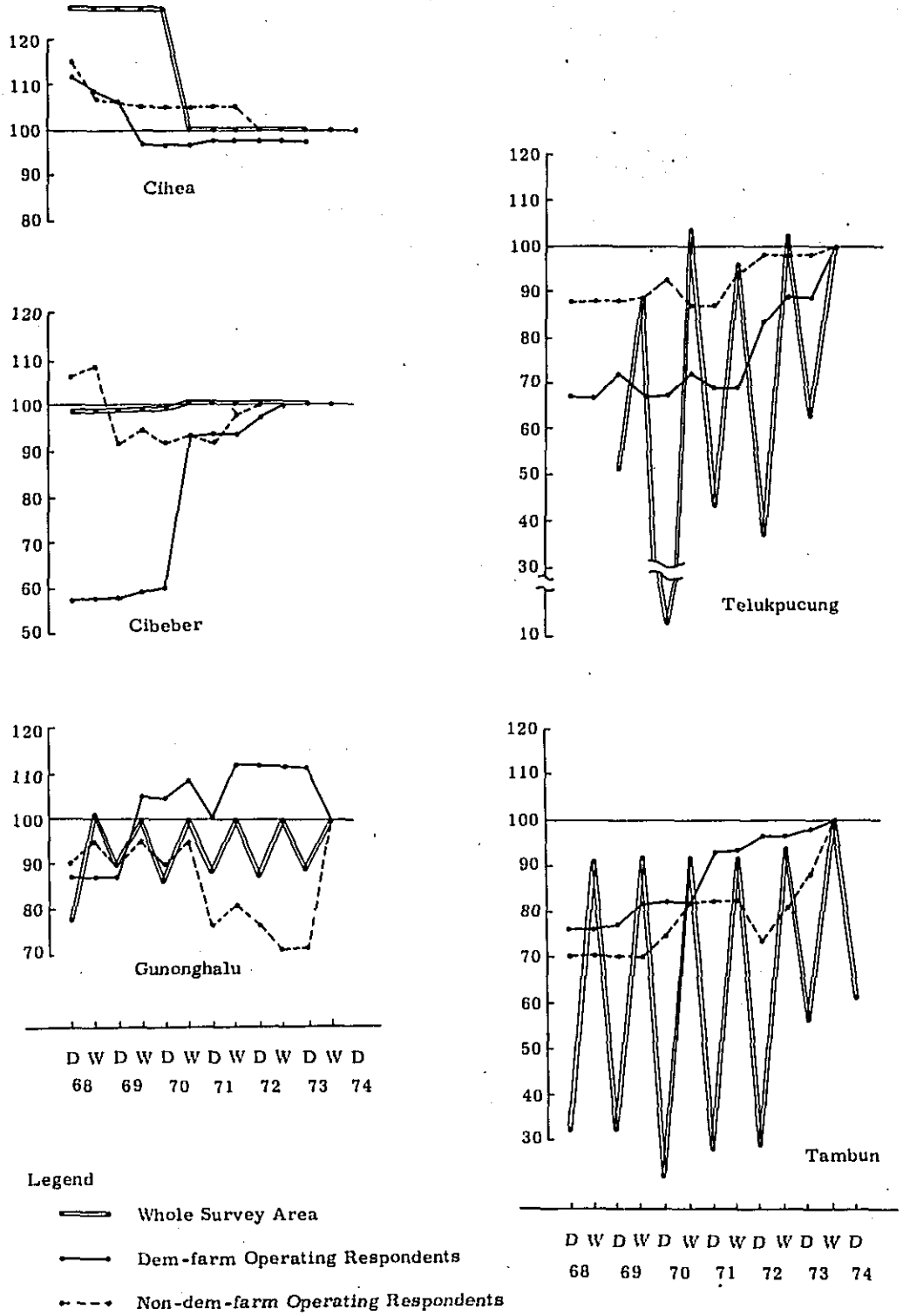
1. Composition of Farmers by Operational Holding



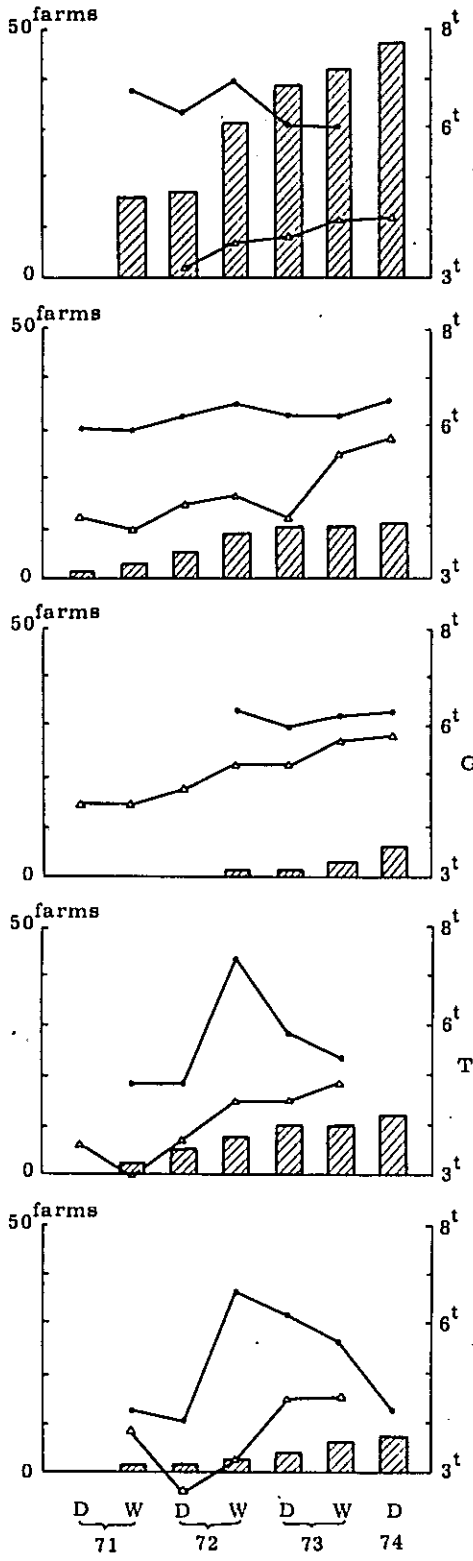
2. Paddy Field Acreage per Farm Household in Each Survey Area



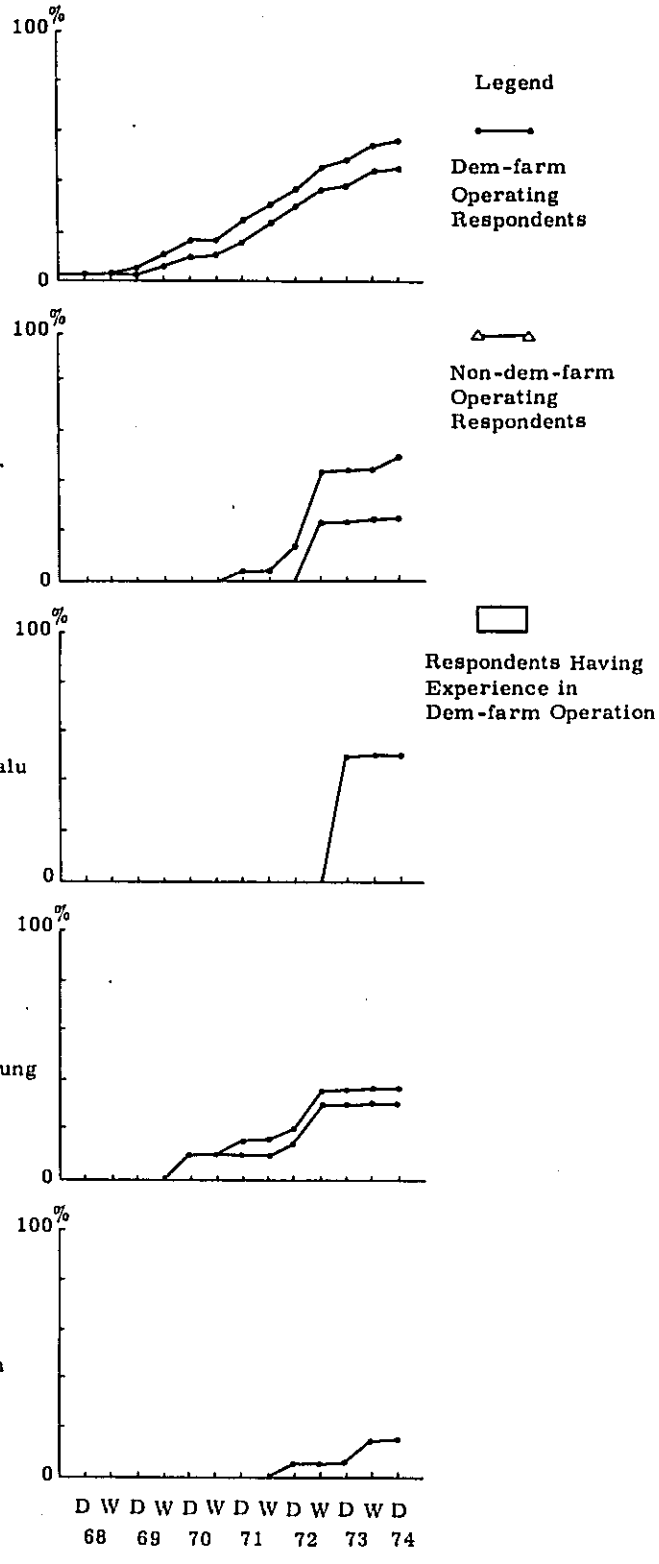
3. Secular Changes in Planted Area of Paddy in Each Survey Area (Base : 1973 Wet Season)



4. Changes in the Number of Demonstration Farms and Yield



5. Increase of High Yielding Farm Households (more than 6t) as Disclosed by Interviews



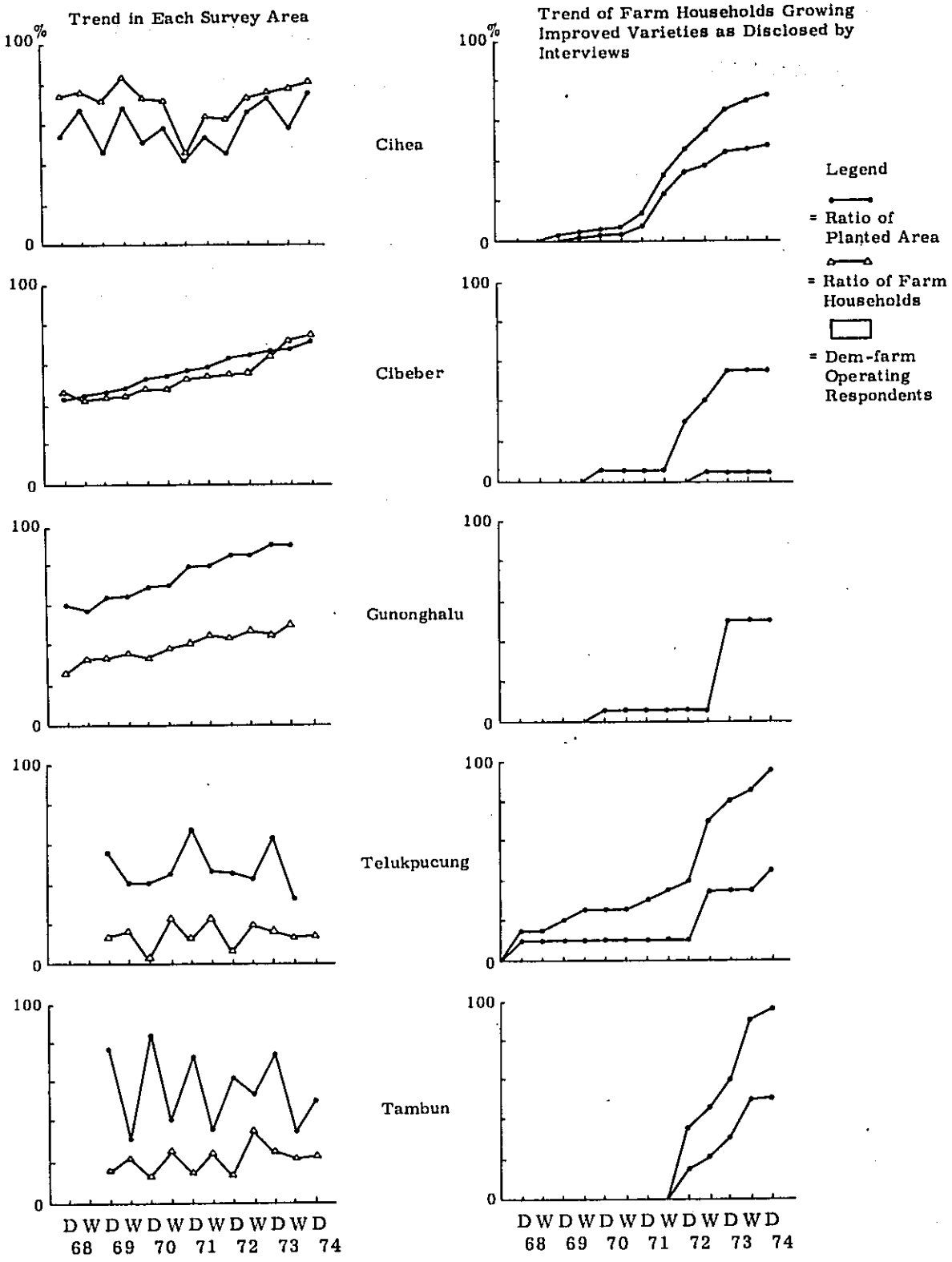
Legend

Dem-farm Operating Respondents

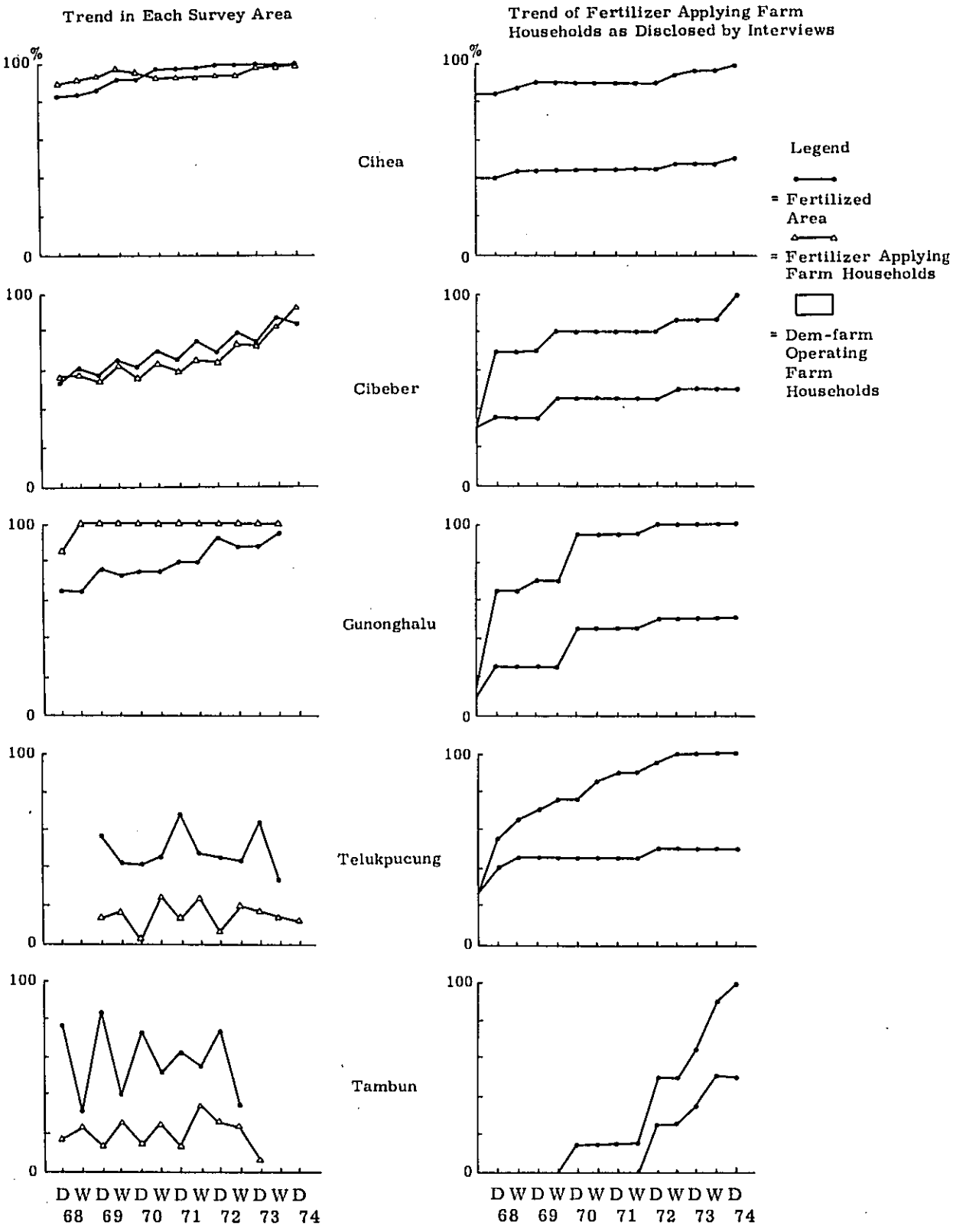
Non-dem-farm Operating Respondents

Respondents Having Experience in Dem-farm Operation

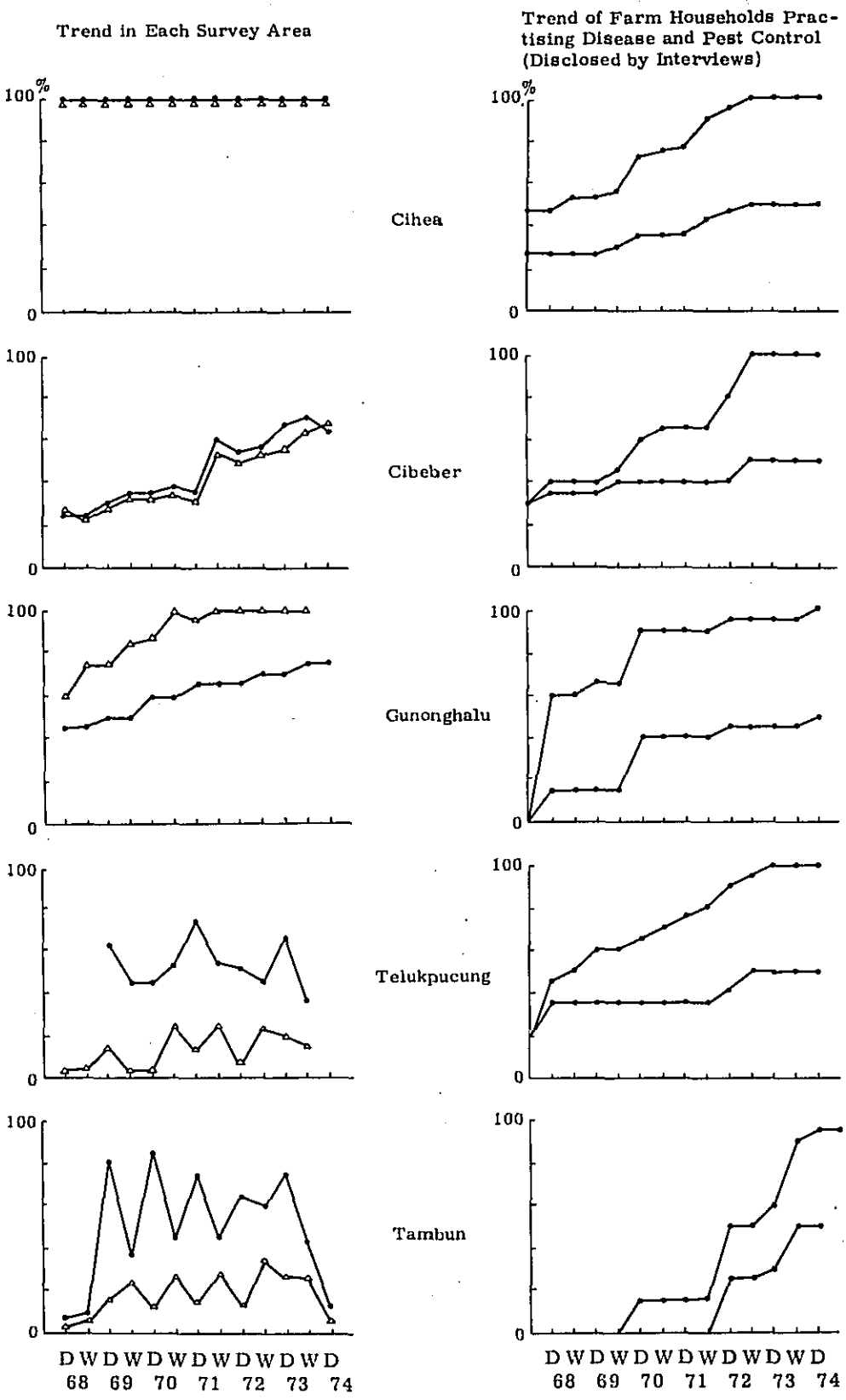
6. Past Extension Trend of Improved Varieties



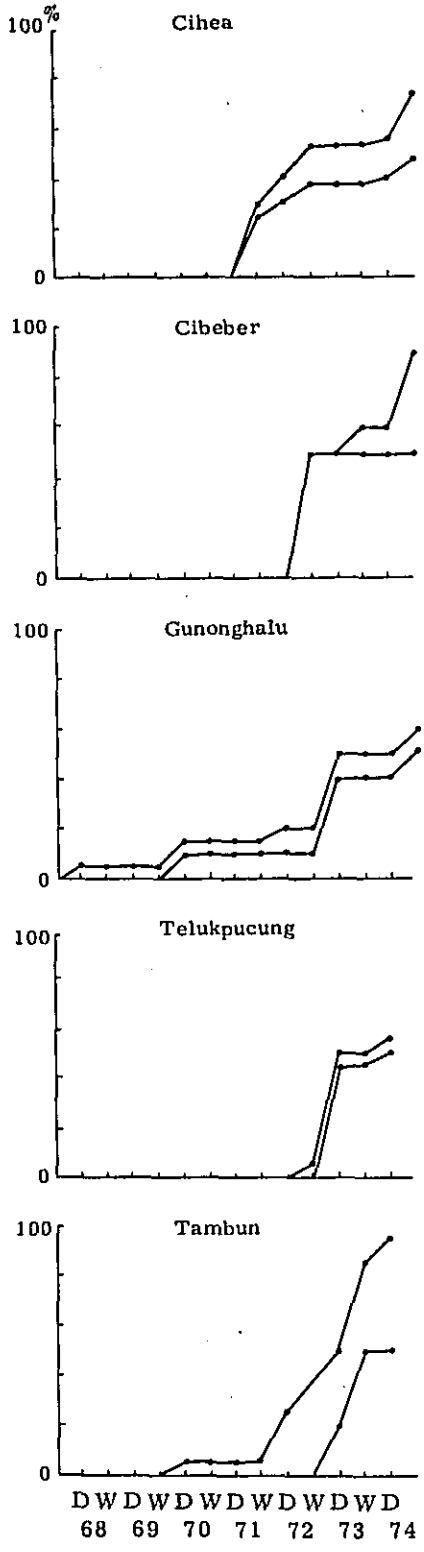
7. Past Extension Trend of Fertilizer Application Practice



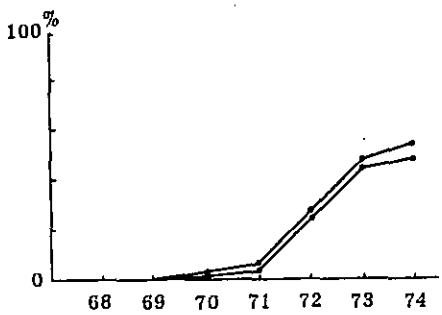
8. Past Extension Trend of Disease and Insect Pest Control Practice



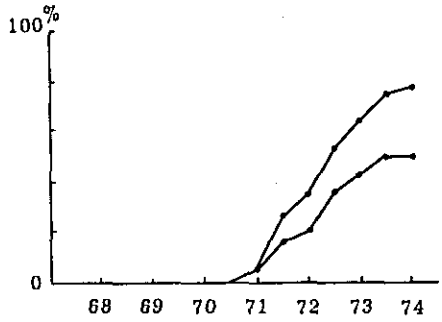
9. Past Trend of Farm Households Practising Mechanizing Farming (Based on Interviews)



10. Past Trend of Kelompok Participating Farm Households (Based on Interviews)



11. Past Trend of Farm Households Aware of Demonstration Farm Operation (Based on Interviews)



12. Past Trend of Farm Households Utilizing Extension Centers (Based on Interviews)