SUMMARY REPORT
ON
EX-POST STUDY ON AGRICULTURAL TECHNICAL COOPERATION PROJECT IN THE PHILIPPINES

FEBURUARY, 1981

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO, JAPAN

PREFACE

It is with great pleasure that I present this report entitled Summary Report of Ex-Post Study on Agricultural Technical Cooperation Project in the Philippines to the Government of the Philippines.

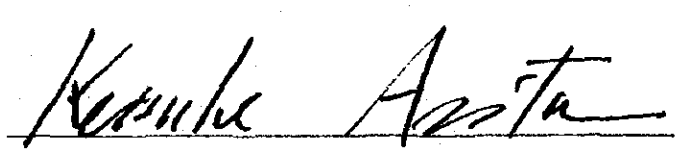
This report embodies the findings of an ex-post survey which was carried out on Rice Development Projects in Northern Leyte and Eastern Mindoro from 20th to 27th of January, 1980 by a Japanese survey team commissioned by the Japan International Cooperation Agency.

The survey team, headed by Mr. Motonaga Ohto, had a series of discussions with the officials concerned of the Government of the Philippines and conducted a wide scope of field survey and data analyses.

I hope that this report will be useful as a basic reference for development of technical cooperation projects between both countries.

I wish to express my deep appreciation to the officials concerned of the Government of the Philippines for their close cooperation extended to the Japanese team.

Feburuary, 1981



Keisuke Arita

President

Japan International Cooperation Agency

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FORWORD

As a part of the Ex-post Study on Agricultural Technical Cooperation Projects, our field survey team visited the Republic of the Philippines for one week from 20, January, 1980.

The main purpose of the Ex-post Study, conducted by Japan International Cooperation Agency(JICA), was to investigate the present situation of the projects, for which JICA had been extending technical cooperation until several years ago, and to examine the after-effects of the cooperation on the agricultural development in the project areas and on the national level; so that the result of the study may be utilized in planning technical cooperation projects in the future.

During the stay in the Philippines, our team visited the agencies concerned of the central government, such as NEDA and BAEX, their regional agencies, extension people and farmers in the project areas. The projects on which our team made on-the-spot study were Rice Development Projects in Northern Leyte and Eastern Mindoro, for which JICA's technical cooperation was extended during the period of 1969-76.

The findings and observation of our team have been incorporated in the report of the Ex-post Study. The report is written in Japanese for internal use of JICA, but the brief summary is translated hereby into English for submission to the government of the Philippines which might be interested in our study.

Our team owes great deal to many persons in the Philippines in conducting our study. To all of them we wish to express our heartfelt gratitude.

Motonaga Ohto

Motonaga Ohto

Team Leader

Ex-post Study on Agricultural
Technical Cooperation Projects
in the Republic of Philippines.

Members' List of the Team

Ohto, Motonaga	Leader	Senior Technical Advisor, JICA, Tokyo
Suwa, Ryo	Coordination	Supervisor, Planning and Research Department, JICA, Tokyo
Suetsugu, Isao	Regional Development	Technical Advisor, Association for International Cooperation of Agriculture and Forestry (AICAF), Tokyo
Watanabe, Tetsuo	Agricultural Development	Technical Advisor, AICAF, Tokyo

Schedule in the Philippines

Jan.	20 (Sun)	Tokyo — Manila	
	21 (Mon)	JICA office, NEDA,BAEX, NFAC	
	22 (Tue)	A Team	B Team
		Manila – Leyte	Manila – Mindoro
		Leyte Pilot Farm Project	Mindoro Pilot Farm Project
	23 (Wed)	"	"
	24 (Thu)	"	"
	25 (Fri)	Leyte – Manila	Mindoro – Manila
		NACIAD	
	26 (Sat)		
	27 (Sun)	Manila — Jakarta	

CONCLUSION AND SUMMARY

CONCLUSION AND SUMMARY

1. Conclusion

The Philippine Government reconsidered, in the first 4-Year Social and Economic Development Plan (1967-70), the fact that the priority of the plan had been given more to industry and less to agriculture in the fore running Development Plans. New measures were to be taken in providing agriculture with such production infrastructure as land reform, irrigation construction, etc. In the course of investigation, high-yielding varieties (HYV) of rice, having been developed at IRRI at that time, came to be noticed.

The new Government thought, by employing HYV, to demonstrate a model of increased production of rice by way of Japanese rice cultivation techniques. Thus, in the following two Economic and Social Development Plans, measures to increase food production came to bear fruits and those for rice advanced so as to attain a full sucess in the self-supply of found in the Philippines. Even in the ongoing 4th Economic and Social Development Plan (1978-82), the basic principle "Growth and Equity" has been put on agriculture at the foundation of industrialization as the source of providing food and material. Increased production of food, increased production of export crops and regional development are being pursued again. So it seems that the "food production increase" approach will be placed continuously at the core of the development plans in future.

Two projects covered by the survey assumed the role to be the means to fulfil the objective. Both projects aimed at demonstrating a model of increased production of rice on irrigated field, and set up 100 ha Pilot Farm. The projects had, in this way, responded to the intension of the policy. Moreover, they had kept so close contacts with local events that activities in cooperation could result in success.

Looking into the movement after the termination, both projects experienced a phase, at one time, to develop to an agricultural demonstration and training center. Then, the training wing of the said center was separated and incorporated into a national training program starting around 2 years ago. Under the new program, a Regional Farmer Training Center (FTC) was established with new buildings in a neighboring site. While, the old Pilot Farms (100ha) were remodelled as RP-Japan Demonstration Center, and technical guidance, demonstration of extension methods and training were brought into operation in the four sections, i.e. variety, fertilizer application, cultivation and post-harvest technique.

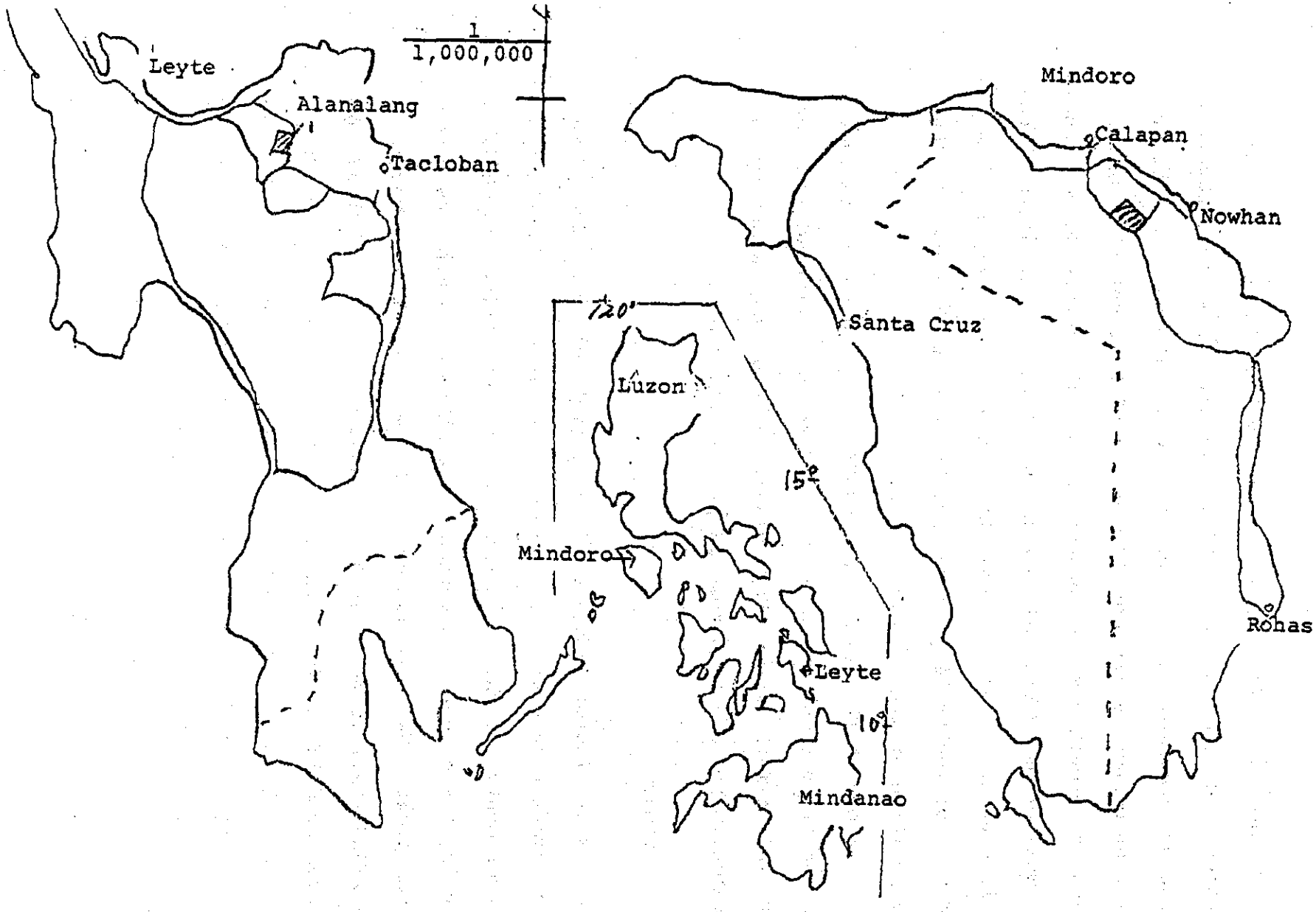
Thus, the projects under survey has experienced several phases: original Pilot Farm, past Demonstration Training Center and present Demonstration Center. This shows a model of project in which objective is partly maintained but partly modified and activities are kept developing. As seen from such a continuous reorientation and adaptation to policy and its requirements, these activities are expected to flourish further in future.

The main objective of the survey lies in pursuing the effects of cooperation. In the agricultural sector, however, whether phenomena of development are attributed to a certain factor or not is difficult to answer without detailed analyses and enough time for observations. The survey do not assume a well-prepared one, but eventually it could attain its objectives under a favorable condition in which authorities concerned of the Philippine Government accepted the survey with a positive attitude.

Crossing the gate of the 1980's, it is a postulate that cooperation be strengthened further and be performed in a more efficient fashion. We hope significance of such a survey be reconsidered and be afresh in a consecutive one.

2. Summary

What kind of change the two projects had experienced in the transitory phases of Development Policies in the Philippine Government? To what extent the initial objective was modified during the cooperation period? What kind of change the hand-over project had experienced after the termination? How is it now and shall it be in future? Answers to these questions are summarized in the following Table.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Leyte
Alanalang
Tacloban
Mindoro
Calapan
Nowhan
120°
Santa Cruz
Luzon
15°
Mindoro
Leyte
10°
Mindanao
Rohas

Outline of Transitory Phases — Cooperation Projects and Development Plans

Transition of Economic Development (Agricultural Development) Plans	Outline of Project	Leyte Pilot Farm Project	Mindoro Pilot Farm Project
(1967-70) The 1st. Social and Economic Development Plan Emphasis on agriculture changed from laid-less in the forerunning one to laid-more in this plan. Increased production of rice being the objective, irrigation construction works were given priority. Production loan was provided from Land Bank.	Official Name	Republic of the Philippines-Japan Pilot Farm Project, Leyte	ditto, Mindoro
	Cooperation Period First	1969-74	1969-74
	Extension (under Colombo Plan)	1975-76	1975-76
(1972-75) The 2nd. Social and Economic Development Plan Same with the 1st. Plan, more emphasis laid on agriculture. In 1972 damages by typhoon and flood decreased rice production, which was already self-supplying, and increased production of rice came up to the main pursuit again. The plan transferred to the 3rd. Plan in 1974.	Progress Expenses (million Yen)	446	
	Experts	9	9
	Man/month	274	301
	Establishment	5(under agreement) 2(under Colombo Plan)	5(under agreement) 2(under Colombo Plan)
	Machines and supplies (million Yen)	202	
(1974-77) The 3rd. Social and Economic Development Plan Basic objective set at improving living standard of low-income group. Land reform, attain the self-supply of agricultural commodities, increase of exports and import sub-stitution were promoted. For this purpose Masagana 99 and Maisan77 were unfolded. In the important regions integrated rural development plans were introduced.	Headquarter	Alan-Alang, Leyte	Nowhan, Mindoro
		Cooperation	Cooperation
	Initial Plan	Establish 1,000ha model compound area, and irrigation construction works, paddy field arrangement, new varieties and new techniques be introduced there and the results of these introductions were to be extended. In the center of the area a Pilot Farm(100ha) was to be established.	
	Revised Plan	Activities were confined in 100ha, and their emphasis was laid on training. Pilot Farm assumed a character of training center.	
(1978-82) The 4th. Social & Econ. Develop. plan. "Growth and Equity" as the basic principle, increase of employment, human resources development, and improving of living standard of low-income groups were persued. For this purpose, crop multiplication, and social development and education promotion in less developing regions were promoted.	At the Time of Termination	In 1976, transferred to RP regional Demo. Training Center and training was practised for technical persons outside Pilot area. In 1978, a regional training center(FTC) was attached and training function was strengthened. Rice production targets:dry season 4t/ha, rainy season 5t/ha were met 100%. Rice scarcity region turned to exporting region.	In 1976, transferred to RP Regional Demo. Training Center. In 1978, training was separated to formulate FTC. The old facilities were succeeded by RP-Japan Demo. Farm. In a consecutive 3 years from 1977, yield of rice(total of 2 crops in a year) stood at: in Pilot area 7.7t/ha non-Pilot area 7.0t/ha

I TRANSITIONAL ASPECTS OF AGRICULTURAL DEVELOPMENT POLICIES AND PHASES OF JAPAN'S COOPERATION

I Transitional Aspects of Agricultural Development Policies and Phases of Japan's Cooperation

I-1 Transitional Aspects of Agricultural Development Policies

1. Transitional aspects of Economic Development Plans

The Government under President Marcos had enforced 4 National Development Plans in the past, and made efforts on social and economic development. The first 4-Year Social Economic Development Plan was enforced in 1967-70 period, and 4-Year Plans were persued up to the third Plan, then in the fifth Plan 5-Year Plan was introduced.

The outstanding event in these 4-Year Plans was a significant decrease of rice production in 1972 caused by big-scale innundation of fields and alteration of Plan period caused by change of policy. The second Plan was transferred to the third in between and the policy of increasing production of rice was strengthened further.

In the third Plan period, gap between city and farm, between agriculture and industry and among income groups came to be felt and economic inequity brewed social unrest, with the results that uprisings be brought forth. As a counter measure, regional development approach was contemplated in depth. Such a development was collated with a shift of strategy, from development aid to stability and equity of the Society, by such major aid donating agencies like US AID and IBRD.

In the fourth Plan(5-Year), started in 1978, the basic principle "Growth and Equity" was to be implemented by emphasizing increase of employment, integrated regional development, priority for education and strengthening of extension activi-

ties for the benefit of low-income groups in rural sector. In particular, much foreign aid was anticipated, as it was told, in integrated regional development.

Transition of Economic Development Plans

	1st Plan, 1967-70	2nd Plan, 1972-75
Basic Policy	Less emphasis on agriculture was ammended. Land bank was establish and production loan was provided. Priority was given to construction of irrigation facilities.	The main objective followed a same fashion. Finance policy shifted to a stabilization by a tighter financing and by devaluation of peso.
	3rd Plan, 1974-77	4th Plan, 1978-82
Basic Target	To fill the prevailing gaps, improve living standard of low-income groups	"Growth and Equity"
Main Objective	1.Appropriate use of labor force 2.Acceleration of economic growth 3.Equalized distribution of income and wealth 4.Acceleration of regional development and industrialization 5.Acceleration of social development 6.Stabilizations of prices and balance of payment	1.Enlargement of employment 2.Development of human resource 3.Betterment of living of low-income groups
Plan Objective	1.Promotion of land reform 2.Self-supply of agricultural commodities 3.Development and preservation of forest resources 4.Increase of exports and substitution of imports	1.Growth rate per annum: National income, gross 7.5% per person 4.7% 2.Employment target: 96% of labor force 3.Increase of employment opportunities by public investment Others: same with the previous Plan
Strategy to fulfil the above objectives	1.Active promotion of institutional reform including land reform 2.Credit and marketing	1.Promote crop multiplication to increase employments 2.To improve living con-

	services by private organizations would be replaced by public organization in backward areas. 3.Priority of executive program should be decided by the Govt. but its formulation and execution were entrusted to municipalities. 4.Executions were under the supervision of the Joint Council formed by NFAC and Authorities concerned. 5.Promote agri-business to fortity linkages to activities of industries 6.Introduce Integrated Rural Development program in principal regions	dition of low-income group in a long range: integrate development program and extension of education, in the less developed region

I-2 Phases of Japan's Cooperation in The Field of Agniculture

1) Outline

Tendency in Japan's cooperation in recent years was characterized by : donation of fertilizers, chemicals, farm machinery and implements through food aid; offer of rice milling facility, etc. on non-recourse basis; loans for infrastructure construction through yen-credit were predominant, but those for social development like education and health services were minimal.

Very recently, development surveys to prepare for technical cooperation come to be closely liked to yen-credit projects.

2) Finance cooperation(credit)

Three projects out of 4 ongoing ones were for irrigation works, including construction of terminal canal and farm road in 15 irrigation area. Underground water irrigation projects in 5 districts in Central Luzon covered the area 12,000ha. Loans for the Cagayan Valley Integrated Agriculture Develop-

ment Project were, in effect, for the irrigation works which was promoted under the help of technical cooperation.

Other than irrigation, loans were provided to government seed multiplication farm for installing seed inspecting facilities, implements and supplies. Rice and maize seeds were handled at the initial phase but vegetable seeds were added in 1978.

3) Technical cooperation

Terminated project: RP-Japan Pilot Farm Project, Leyte, Mindoro

Ongoing project : Cagayan Valley Integrated Agricultural Development Project (Loans for irrigation and technical cooperation were combined)

4) Dispatch of experts and acceptance of trainees

It is noted that trainees accepted from the Philippines numbered 427, the biggest part of the total acceptance of 1,950, and that she also holded predominant 223 experts in the total 363 (in agricultural sector only). While, 3 JICA-experts participated in FAO-supported technical cooperation to Masagana 99 program, in the field fertilizer application test at 10 districts. These experts were highly esteemed by local people.

II CHANGING PHASES OF COOPERATION PROJECTS AND EVALUATION ON THEM

II Changing Phases of Cooperation Projects and Evaluation on them

II-1 Changes and Progresses during the Cooperation Period

1. Outline of progress

1) General

1st Preparatory Survey Team	Sept.	1966
2nd Plan-formulating S.T.	Apr.	1967
3rd Executive Design S.T.	Mar.	1968
4th Pilot Farm S.T.	Sept.	1968
Agreement reached	June	1969
Dispatch of Experts	Aug.	1969
1st Itinerary Guidance T.		
2nd "		
3rd "	Mar.	1973
Agreement terminated	June	1974
Evaluation S.T.	Aug.	1974
Follow-up Cooperation terminated	June	1976

Note: It took three and a half years from the first Survey to the date agreement reached.
Agreed period: 5 years
Follow-up period: 2 years (under Colombo Plan)

2) Construction works

Leyte	completed	Jan. 1971
Mindoro	"	Oct. 1970

In 1972, a trainig room was newly established and office room space was increased as an extra-budget building

3) Construction of farm road and irrigation canal

Though these facilities were to be completed in

advance, construction work hardly started one and a half years later. Works retarded further and it was one year within the termination of agreement when they were finally completed. The event disturbed the activities of the project severely and rendered a reason why assessment of the progress was inferior. Reasons for the retarded works were: i)financial difficulties of the Government, ii)capability and standard of technique of the contractor were inferior, iii)cooperation between experts and contractor poor, iv)organization of business, design of construction works and supervision on works were all inappropriate.

2. Character of the project

The prime objective: Increase production of rice and self-supply of food

Project objective: Establish Pilot Farm and demonstrate a model of promotion of rice-crop in the region

Means to attain objective:

Initial phase	1.Construction of 1,000ha model compound area
	2.Irrigation facilities, arrangement of field
	3.Introduction of variety and new technique
	4.Extension of results from above activities
	5.Construction of a central Pilot Farm (100ha) in model compound area
Revised phase	1.Field arrangement in 100ha was to be the main activity
	2.Content of activity was to be oriented to training

3.Therefore, Pilot Farm was to be a Training Center

3. Summary - questions, problems and lessons

1) Backgroud and events in establishing projects

i) Backgrounds in requesting projects

Mr. Marcos's Government proposed a food self-suppling policy in 1965, the next year of his debut, being supported by a successful introduction of IRRI-bred miracle rice.

Mr. Ropez, Vice-President, asked Japanese Ambassador cooperation for increase production of rice in January 1966. He also asked Premier Sato help, at Tokyo, and the Premier promised to cooperate. Then, Assistant Secretary, Agriculture Department had consultations with the staff of Ministry of Agriculture and Forestry and studies and surveys were set forth.

ii) Ex-ante surveys

1st preparatory survey, Sept. 1966,24days: Covered rice producing regions in whole country in 24days. Assuming to establish an increase production model conglomarit around irrigation facilities, several 1,000ha areas were proposed.

2nd plan-formulation survey, Apr. 1967,38days: The Philippine Government proposed 10 areas. Survey team picked up 3 areas (Mindoro, Leyte and Mindanao) and investigated technical feasibility and economic stability by each. Mindoro and Leyte were screened.

3rd executive plan formulation survey, Mar. 1968,55days: Plans were formulated for the scale of 1,000ha. At R/D stage scale cut down to 100ha, but the reasons were not clearly informed even to project personnel.

4th R/D team, June 1969: Agreement was reached as Pilot Farm in which irrigation, field arrangement and improved cultivation techniques were practised and promoted in extension service. However, in the light of social and economic limitations, improvement of primary techniques should be initially taken up and targets should gradually be persued in the later phases.

2) Process of project formulation

Questions/constraints	Problems	Lessons
: Project area was cut from initial 1,000ha to 100ha. activities started without mutual understandings.	: How to promote mutual understandings without mishaps between survey teams, among executing persons on the spot, and between local authorities concerned.	: ditto In view of financial resources and other circumstances in Japan, scale-down to 100ha at the R/D stage would be an agreeable decision.
: Construction works started without understanding the principle which specified costs for irrigation and road to be burdened by Government and those for field arrangement by farmer.	: What to do with Local farmers to make them fully realize the services at the initial stage.	: ditto As to the field of activities directly affects farmers, their understandings were all the more important.
: Due attention was not paid to artesian wells in Mindoro.	: Comparative analysis on uses of artesian well and of irrigation water.	: Diffusion effects should be assessed in advance.
: Responsibilities to be taken by experts, by Philippine Government were not distinctively specified(This was raised by Philippine side).	: How to describe share of responsibilities on R/D.	: In concluding agreement a share of responsibilities deserve consideration.

3) Mamagement of projects

Questions/constraints	Problems	Lessons
: Staff in the Pilot Farms was not fully trained in management and technique.	: To intensity training more intentionally and effectively.	: First priority should be laid on upgrading capabilities of staff. Significance of in-ser-

: Difficulties in spare-parts availability. : Difficulties in attaining production target of HYV. : Demonstration plots were placed on private land and activities were limited there.	: To organize spare-parts supplying system domestically. : To elaborate an intentional seed production system and execute it. : How to coordinate opinions at the initial stage. : To introduce compensation system for damages by natural calamities.	vice training should be kept in mind. : In a project like this demonstration plots were to be used at will. Full understanding by both party was necessary at the start.

4) Infrastructure installation

Questions/constraints	Problems	Lessons
: Financial difficulties by the Government. Contractor's technical standard was inferior. Connection between expert and contractor was ineffective. : Ineffective business management. Construction works retarded by imperfect design and supervision. : Land consolidation was not practised in the Philippines. : Machine troubles were caused by unskilled operations by drivers. : 1ha plot was too big.	: How to use artesian well all year round. : In many places in the Pilippines, rather drainage than irrigation was necessary. Counter-measures were needed. : How to exercise precedent training effectively. : 30are plot was reconsidered.	: In developing countries, main and branch canals were usually born by government and there after by farmer. In this project, all of them born by Government budget(a good example). : At the outset drainage was also to be envisaged. : To promote self-reliance of farmers, low-cost utilization model of artesian well should be conceived.

5) Techniques development

Questions/constraints	Problems	Lessons
: In the Philippines fertilizer production not advanced(1), much amount imported, but used by wealthy farmers. Increments went to landowners and deterred incentives for tenant farmers. : The country might have contribute to a handbook of insects and pests, so mulitifarious. Unspecified physiological deseases were found. : For prevention, only knapsap sprayer was used practically. : Transplanting machines failed practical use under the different conditions of field, varieties and nurselings.	: To institute domestic production system of fertilizers. : To develop cultivation technique under a controlled application of fertilizers. : To develop practical use of "intercultivation drying of field"(conceptions in IRRI guidance program were to be investigated). Zn defficiencies pointed out in the published report should have been referred.	: As an intermediate technique, cultivation with controlled application of fertilizers should be noticed. : Progress attained at local research and experiment should be utilized fully. : To make use of timely and short term itineracy of pest and disease experts. : To give agronomists knowledge on identifying and preventing insects and pests. : To keep close link with research organizations in the country.

Note: (1)Fertilizer production: in 1950's 30,000-50,000 tons, 50% of consumption, in 1960's 100,000-250,000 tons, 30-50%.

6) Techniques extension

Questions/constraints	Problems	Lessons
: Literacy rate : Land holding system : Tenancy system(high rent) : lack of self-promotion : Traditional rain-fed non-fertilizer cropping system : Development and extension of techniques were rather oriented to farmers favored with irrigation water. Rain-fed farmers were frustrated. : Supply of seed was inadequate. : Chemicals donated from Japan were not available in the market and not used practically.	: How to give guidance to simple-thinking farmers. : Strategies to cope with phases of development : Objective-setting in extension activities : Development of low-cost stabilized cropping technique : How to develop rain-fed rice cultivation techniques : Promote and strengthen seed production and distribution program : To promote wider use of chemical with those available in the local market or through increase production of practicable chemicals domestically.	: To keep in mind the inevitable fact that, in a transitional stage of development, technique extension service tended to be directed to intelligent farmers who were at the same time rich. : How to develop farmers' extension group - from technique extension to individual farmer to group guidance. Its significance should be fully understood.

7) Agricultural machines and mechanization

Questions/constraints	Problems	Lessons
: There were many questions and constraints, so a few points	: To investigate mechanization promotion measures by phases	: A leap forward development should not be tried on a weak

are raised. : Owe to low level of knowledge a long-term training is necessary to master practices of operation and maintenance. : Harvestor and circulate-system dryer, which were introduced on trial, were used with less disorder but lived a short life. : Difficulties in supply of spare-parts	of development. : To develop and utilize long duration-type machines rather than to use high-performance one. : To exercise intensive training : To promote domestic manufacturing of hand-driven weeder : Supply system of home-produced spare-parts	foundation. : To select locally suited machines, listen to the well-experienced person. : Attension should be paid to the fact that among high-priced machines donated, some were not used at all. : A positive lesson was shown by rice milling machine. By its high-recovery rate of rice, production increased by 10%.

8) Organizing farmers' group - fostering of production organization

Questions/constraints	Problems	Lessons
: Owe to increased production and differences in area sown, discrepancy between big and small farmers widened and affected farmers' emotion to form a group. : In Mindoro, farmers depending on artesian well were involved in regulation by new water distribution and paid a higher expense.	: How to adjust the said(on the left) conflicting interests and promote association among them(this point was raised on the spot). : To justify amount of association fee by farmer. : The way to promote self-reliant farm organizations	: In fostering farmer's organizations, due consideration should be payed for the amount of benefit enjoyed, by each group of farmer, especially that by petty farmers.

4. Evaluation of the Project

	Outline of Evaluation	Problems/lessons
Overall appraisal (Government level)	Three appraisals were given: quite high, high and not specified. : In terms of "pilot cooperation project" it attained success. Impacts on the Government, technical staff and farmers were highly estimated, respectively. : A new series of irrigated rice cultivation techniques was introduced. : That arrangement of field plot was completed and that tillers and rice milling machines were introduced received respectively a high estimation. : Use of fertilizers and chemicals extended.	: Significance of enlightening farmers and make them free from conservatism was fully recognized. : A development strategy was formulated under the condition of low-level learning and prevalent tradition. : Counter-measure for land fragmentation and reallotment. : Course of mechanization of rice cultivation in overall country. : Way to utilize donated machinery which lied idle.
Project level	: As a test case it was successful, but propagation to other areas was not envisaged. : A high esteem was paid as "a scientific show window". : Extension area and training site were used alternately. : The most outstanding result was an epochal increase of production. : The most impressive technique were line-planting and machine use.	: How and where the progress of the project was to be applied ? : In order to propagate the experiences to other areas programs should be modified. : Techniques should be modified to cope with on-the-spot conditions. : To establish a series of technique well adapted to on-the-spot conditions.
Grass-root level	Results of anquete to farmers: : Epochal high yeild(predominant ratio), factors contributed; chemicals, fertilizers, water & milling.	: Self-reliant development measures. : Opportune availabilities of fertilizer, chemicals and seeds.

	Outline of Evaluation	Problems/lessons
Grass-root level	: Improved practice by; power-tiller, duster, thresher and arrangement of field.	: Regulating a plot to an optimum size(1ha was too big).
Lessons for Japanese side	: Closer affiliations should be kept between projects started with the same objectives. : Machines and supplies should be selected by collating local requirements for them to the objectives of the project. : Attentions should be payed to more efficient and rationalized business management in delivering donation machines and supplies on time, and in up-keeping, repairing and replenishining delivery. : At the time of evaluating progress of the projects, experts responded with careful preparations.	

5. Progress of Project activities

(1,000 Yen)

	1967	68	69	70	71	72	73	74 3)	Total
Expenses 1)									
Surveys 2)	15,582	44,414	-	857	761	1,354	2,407	2,501	68,067
Executing Plan	-	-	123	73	253	337	288	326	1,400
Experts	-	-	19,416	25,258	23,631	26,344	32,153	39,122	165,924
Machines and Supplies	-	-	109,332	37,741	15,048	16,711	12,054	11,040	201,926
Business	-	-	-	1,293	1,491	1,817	2,687	1,746	9,034
Total	15,582	44,414	128,871	65,222	41,384	46,554	49,589	54,735	446,351
Number of trainee Accepted				2	6	4	4	4	7,000 4)

Note: 1) Based on settled account. For 1974, initial budget.
2) First and second preliminary surveys were not included.
3) Agreement period: 5 years, 7 June, 1969 - 16 June, 1974.
4) Estimated expense.

II-2 Movements after the Termination of the Cooperation and the Present Status

1. Movements after the termination of the projects

	Leyte	Mindoro
New name	Regional Demonstration Training Center. Farmers' Training Center	RP-Japan Demonstration Farm, BAEX. RP Farmers' Training Center, RP 1145 (to start in Feb. 1980)
Transitory phases	1968: RP-Japan Pilot Project 1976: As RP regional Demonstration Training Center, training was performed for not only Pilot area but also technical workers in Districts. 1978: In addition to above, PTC-RD (mentioned later) was set up as a regional center in the national network.	1968: RP-Japan Pilot Project 1976: RP Regional Demonstration Training Center 1978: Training was separated and merged to FTC under RP 1145. While, the old facilities were renamed again as RP-Japan Demonstration Farm BAEX, and activities were enlarged to cover a wider area.
Character and objective	Objective of the Project at the time of extension lied in demonstration. Then the objective was changed to cover extension activities in the Center. Finally, its training section was separated to form a regional center under a national training network.	
Staff	Preceding project: RP-DTC Technical 5 General affairs 3 Management 1 Others 16 New project: RP-FTC Technical 4 Management 1 Home economics 1 Youth movement 1 Information 1	Preceding project: RP-JDF Senior 4 Junior 23 labor 27 New project: RP-FTC 7 6 5
Buildings	Same as before Enlarged	Same as before Enlarged

	Leyte	Mindoro
Activities		
Field trial	Varietal comparison, rice blast resistance attest, recommended variesties IR-42 and 36 introduction. Cropping patterns shall be modified in future to raise 5 crops in 2 years. Demonstration continued on post-harvest techniques, i.e. harvesting, threshing, storing and processing.	Varietal trial: 10 varieties(early-, medium and late-maturing varieties), fertilizer application (oppotune time and amount identified, but farmers got 200 peso equivalent amount which accounted for 1/3 of opportune amount of N). Crop protection: measures for 2-brooded rice-borer and leaf-hopper were almost finalized in terms of method and time. Water management: IRRI system was practised.
Education and training	Scale enlarged after the termination to include district officers, school teachers and coop officers(details of FTC training shown above).	Up to 1979, trainings on rice cultivation and processing techniques were given to farmers and 4H Club members. Machine maintenance and repair techniques were taught to farmers and operators.
Extension service	Extension Delivery System launched in 1979, which was based upon T&V. One worker would cover 150 farms(paddy field 150-200ha) by motor-bicycle	Know-hows on rational utilization of irrigation water, crop planning, combination of variety, fertilizer application and crop protection were extended to Pilot area farmers
Questions/ problems	1.Nearly all machines were out-of-order and could not be used. Not only practice but demonstration were disturbed by lack of spare-parts. 2.Pumps were flushed away or damaged by a typhoon, and water-use was seriously disturbed. 3.Increased costs for fuel limited use of machines. Manoeuvability was also affected by	1.Irrigation ditch was too narrow, its gradient inclined counter-wise and water did not reach to the terminal fiels. Amelioration of works was necessary. Shortage of water in the dry season amounted to 18ha. 2.More pumps were required. For D area, people wished to pump up water from the east-side river(8-10 inch pump, pipe 100m). 100m).

	damp soil condition. 4.Staff's knowledge on machines was inferior.	3.Nearly all machines were out-of-order. With supplying spare-parts repair was possible.

2. Results of activities at the Pilot Farm Demonstration Training Center, Mindoro, as an example

(1) On the spot application test (by BPI report)

1) Variety test

Following 10 varieties were tested by their applicabilities. 4 varieties were approved as superior and handed over to extension service.

Tested varieties:

IRRI line;	IR-26, 36, 42, 46
UP 213-C line;	No. 4-137, 22, 168, 463-5
BPI-76 line;	Ri-1, 4

Superior varieties:

IR-36:	growing period	110 days, early-maturing
BPI-76-Ri-4;		"
BPI-76-Ri-1;		125 days, medium-maturing(glutenous)
IR-42;		140 days, late-maturing

2) Fertilizer test

Standard of fertilizer application was finalized as follows.

Basic application: NPK 30-30-30 kg/ha, chemical fertilizer (14-14-14) before transplanting.

Top dressing : 1st. Urea 25 kg, 30 days before transplanting.

2nd. Urea 25 kg, at the young panicle formation period.

In spite of this standard, only a 200 peso equivalent amount was supplied, in practice, to farmers. So that only

1/3 of standard amount of N was applied, with the result that lodging of crop and occurence of pests and diseases increased and that increase of yield failed.

3) Crop protection

Owing to the above-mentioned effects of controlled application of fertilizer and recommended varieties, damages by rice blight and bacterial leaf blight were almost negligible. Against damages caused by 2-brooded rice-borer and leaf-hopper, granule of malathion was applied. Some farmer applies it 6 times.

4) Water management

After transplanting, a shallow water was circulated 3 cm deep, later on 5 cm deep. Water was drained at the young panicle formation period, then filled again 10-15 cm deep and finally drained 10 days before harvesting.

(2) Training

Results of training in 1978-79 was as follow:

	No. of person	Round	
milling technique	45	1	farmers, millers
rice cultivation technique	250	6	farmers, 4H Clubs
operation and repair of machines	150	3	Farmers, technical workers

(3) Production effects and reasons for increased yield

1) Trend of yield in the Pilot area (RP-Japan Demonstration Farm, 1973-79)

Year/season	Yield, cavan/ha		
	Dry season	Wet season	Total
1973	31.28	26.13	57.41
74	47.38	32.91	80.29
75	41.26 [1)]	43.26	84.52
76	71.21	62.75	133.96
77	86.25	84.45	170.70
78	85.9	86.5	172.4
79	86.7	88.3	175.0

Note: 1) Reasons for decrease; shortage of water, ploughing delayed by disease of cattle.

Observations on the table:

i. Yield increased year after year and exceeded, from 1977 onward, 170 cavans with two crops in a year.

ii. In each of dry and wet season yield was sustained at more than 80 cavans respectively, thus, gaining a stability.

The reasons: Overall technical trainings for staff in RP-Japan Project attained success.
: Classes and seminars were consecutively practised.
: One-step-forward technique was introduced and executed.
: High-yielding varieties were employed.
: Water was used rationally.

2) Trend of yield in the surrounding villages of the Pilot area in these 10 years (based upon interview to 22 extension worker. approx area covered, 5-20 km in distance)

i. Past trend of yield (cavans/ha)

	Rainfed	Irrigated	Total
1969	20-40 (0.4-1.8t)	40-60 (1.8-2.8t)	(2.7-4.6t)
1976	20-50 (0.9-2.3t)	40-70 (1.8-3.2t)	(2.7-5.5t)
1979	30-50 (1.4-2.3t)	60-100 (2.8-4.6t)	(4.2-6.8t)

ii. Reasons for increase in 1976

: Masagana 99 program started.
: New techniques brought forth incentives
: Production inputs were supplied.

iii. Reasons for increase in 1979

: HYVs were employed.
: Training for farmers and technical worker proved results.
: Technical guidance and extension service were intensified.
: Use of machines advanced.
: Quality seed, fertilizers and chemicals were increasingly used.

iv. Farmers' income increased:

1969 800-3,000 peso per farm
1979 2,000-8,000 "

v. New techniques introduced in these 10 years

: Application of basic fertilizer on field before transplanting. Top dressing, 2 times, at an early stage and at panicle formation stage.
: Line transplanting.
: Opportune-time water feeding.
: Introduction of better HYVs and quality seeds
: Intensification of on-the-spot guidance by farm management officers of BAEX.

(4) Problems encountered in promoting rice production

: Weed control and preservation of soil fertility.

: Prevention of damage by insects and pests.
: Counter-measure for Zn-deficient soil.
: Inadequate marketing.
: Low price of rice.
: Availability of farm loan.
: High prices for farm supplies.
: Large-scale natural calamities on agriculture.
: Too expensive cost of irrigation water.

3. Problems for farmer group

Situation of farmers in the surrounding village and its recent change.

(1) Method of survey

Three villages were drawn within 20 km distance from Pilot Farm(present Demonstration Farm). Then 9 farmers were selected by size of holding, large, middle and small, 3 farmers being alloted to respective size of holding. The survey was made by using, concurrently, 3 methods(it seemed to be a new trial), i.e. interview, anquete and group discussion. Items of questions and collection and compilation of informations were so deviced as to point out results for a impromptu use.

(2) Situation of farmer

	Large 1) farmer(L)			Middle farmer(M)			Small farmer(S)		
Serial no.	1	2	3	4	5	6	7	8	9
Distance from the Pilot Farm	12	10	4	3	5	10	0	0	5
Age	34	38	58	29	54	46	36	52	49
Education	Univ.	Univ.	High sch.	High s.	High s.	High s.	Prim s.	Prim s.	None
No. of family member	5	8	8	8	6	7	6	5	6
Family labor	1	1	1	1	1	2	2	2	2
Employed labor	4	6	4	1	1	-	-	-	-
Machine and facilities	Tractor 42Hp 1	Power tiller 6	Power tiller 1	-	-	Artesian well 2	-	-	-
Land holding (ha)									
Irrigated	18	16	6	-	1	2.5	3	1	-
Rain-fed	5	3	6	8	3	-	-	2	1.5
Total	23	19	12	8	4	2.5	3	3	1.5

Note: 1) Large, more than 10ha; middle, more than 5ha; small, less than 5ha.

(3) Trend of yield of paddy in recent 5 years (cavan/ha)

Serial no.	1	2	3	4	5	6	7	8	9
73/74									
Dry season	70	75	40	50	55	50	65	65	-
Wet "	80	80	47	45	50	50	60	50	-
78/79									
Dry season	105	110	50	75	80	150	70	80	45
Wet "	100	120	45	65	70	100	70	65	60

(4) Factors contributed to high yield, by order of magnitude

Serial no.	1	2	3	4	5	6	7	8	9	Aggregation
Variety	1	1	1	1	1	2	1	1	1	I
Insects prevention	2	3	4	3	4	3	3	3	3	III
Fertilizer application	3	2	2	2	2	4	2	2	2	II
Water management	4	4	3	4	3	1	4	4	4	IV
Machine utilization	5	5	5	5	5	-	5	5	-	V

(5) Factors contributed to decreasing yield, by order of Magnitude [1)]

Serial no.	1	2	3	4	5	6	7	8	9	Aggregation
Shortage of irrigation water, drought damage	1	1	1	1	1	1	1	1	1	I
Typhoon and flood	2	3	4	3	4	5	2	3	4	III
Insects infestation	3	3	2	2	3	2	3	2	3	II
Unavailability of fertilizers	4	4	3	4	2	3	4	4	2	III
Zn deficiency of soil	5	2	-	-	-	4	-	-	-	

Note: 1) The order of magnitude by factor was slightly different by farm and by area.

(6) Sources of technical informations by order of priority

ial no.	1	2	3	4	5	6	7	8	9	Aggre-gation
tension rkers	1	1	1	1	1	1	1	1	1	I
oject staff	2	2	2	2	2	2	4	4	2	II
dio	4	4	5	3	4	4	5	2	4	IV
iends, latives	3	3	3	4	3	3	2	3	3	III
hers	5	5	4	5	5	5	3	5	5	V
lation with oject										
articipants n training	1	1	1	1	1	1	1	1	1	
isits to roject	1	2	-	2	-	1	al-ways	al-ways	-	

(7) Problem in farming and technical questions

i. Problems in farming	ii. Technical questions
: Higher fertilizer price and lower rice price	: Counter-measures for short supply of irrigation water
: Extreme high price of machines, especially power tiller	: Unavailability of quality seeds at the opportune time
: Unavailability of spare-parts	: Rational application of fertilizers
: Unavailability of loans	: Ascertain opportune time of preventive practices
: Marketing	: Preservation of soil fertility
	: Soft and damp paddy field
	: Counter-measure for Zn scarecity

(8) Changes in farm management and level of living in 10 years

Serial no.	1	2	3	4	5	6	7	8	9
Purchase of land		+			+		+		
Purchase of farm machineries	+	+	+						
Purchase of water buffaroes			+	+	+		+		
Purchase of jeep	+								
Moter-bike		+	+		+				
Stereo,radio	+	+	+	+	+	+	+		
House,new/reconstruction	+	+	+		+		+		
Clothings	+	+	+		+				
Food	+	+	+	+					
Furnitures	+	+	+						
Education for child	+	+	+	+		+			
Health-care						+			
Electricity	+	+	+	+	+	(+)	(+)		

Observations

: Gaps of level of living were apparent between L, M and S group.

: Agriculture mechanization advanced at large-scale farm, while animal draught was still used.

: Improvement of living condition was apparent at the upper part of farmers.

II-3 Evaluation at the Time of the Termination and at the Time of the Survey - their Comparison

	Leyte		Mindoro	
	At the Time of Termination of Cooperation	At the Present Survey	At the Time of Termination of Cooperation	At the Present Survey
Overall appraisal				
By Japan side	It was perceived that targets were attained in programs of field arrangement, rice cultivation technique improvement and technical worker training. In individual items, unexpected results were attained, which were taken up as guideline.	Same with Mindoro	The project was significant as an example to show future phases of waste land irrigation farming development, and also as a forum to try and display mechanization. In its large-scale plot of field, technical guidances were practised, with success, on farming system, water management and rice cultivation. They were, however, ongoing programs and the time was premature for evealuation.	By comparing, Government level appraisal at the time of termination in a criticism shown by Japanese Evaluation Team (left-hand column), and findings of the survey, rate of attainment of the objective was assessed as: 70% at the termination, and nearly 80% this time.
By the Philippine side	1.Government level(NFAC, BAE, NGA, BPI) 3 different appraisals; excellent, good and not specified. 2.Project level Beneficial as a scientific show-window. The outstanding effect was that rice yield increased much. Enlightening the use of machine was impressive(it opens the eyes of farmers) 3.Grass-root level Very much pleased by yield-increasing effect, especially by the use of tiller, fertilizer and chemicals. But propagation to farmers outside	1.Government level Higher points than those of the termination. Objectives were attained as a Pilot. Some part of the program was separated and expanded. 2.Project level Same with the left-hand column 3.Grass-root level Same with the left-hand column	1.Government level Same with Leyte 2.Project level Same with Leyte 3.Grass-root level Same with Leyte	1.Government level Objective questions were not tried, but the team had a impression that exertion were highly appreciated. 2.Project level Self-appraisal by the project staff, 80-90%. Farmer's estimate, 80%. 3.Grass-root level Appraisals: Within the Pilot area, 85%. Outside the Pilot area, nearly same. (those by large-scale

	Leyte		Mindoro	
	At the Time of Termination of Cooperation	At the Present Survey	At the Time of Termination of Cooperation	At the Present Survey
	lot area was inefficient.			farmers were high) By extension workers, less than that.
Ratio of Target attained				
Irrigation works	Completed.		Works completed. But 10% of plots were unirrigable.	The said failure was not ameliorated.
Yield of paddy	Targets: 4t/ha in dry season, 3.5t/ha in wet season were attained in 3 years with 3 crops in a year 12t/ha at demonstration plots in Pilot area.	Unspecified, but targets was likely attained 100% in 3-4 years, because Pilot area, rice deficient in the past, turned to exporting area in 3-4 years.	Targets: 4t/ha in dry season, 3.5t/ha in wet season were set 1 year later than Leyte. 4t/ha was reached at demonstration plots (2 crops). Farmers outside Pilot area harvested 5.5t/ha with 2 crops.	The said targets were attained 100% in 10 years. Yield increased since 1977. 7.7t/ha in Pilot area, in consecutive 3 years. Farmers outside Pilot area, 7t/ha.
Appraisal by phase				
Project level				
Field arrangement (Irrigation and drainage)	Irrigation and drainage works were carried on reclaimed fields. Works costed less labor and less money and met the requirements of the time and the place	No specific question was raised.	Works were carried on unrelaimed lands and costed much money. Applying to a wider area was limited. But displayed changes struck farmers, government and technicians much.	After the completion of works, defects were felt by narrow irrigation ditch and by unirribable terminal fields. Reputation for the display diclined. Amelioration of works was necessary.
Extension and demonstration of cultivation techniques	Models were displayed in: arrangement of irrigation facilities, two crops of rice in a year, introduction of HYVs, application of fertilizers and chemicals, and mechanization of works in ploughing and levelling of land, harvesting and processing.	Rice blight-resistant varieties attained success. Post harvest techniques were mainly demonstrated but mishaps of machines impeded these activities.	Owe to year-round irrigation, BPI-76-1 and other HYVs were introduced, fertilizers and chemicals became applied, and 2 crops in a year practised. A model of mechanization of practices was displayed.	New locally-adapted varieties were selected. Prevention measures were practically used. Opportune time and amount of fertilizer application were attested. Pilot Farm took on a character of experiment station.

	Leyte		Mindoro	
	At the Time of Termination of Cooperation	At the Present Survey	At the Time of Termination of Cooperation	At the Present Survey
Training	Successful results were attained in: short-course training for extension workers; and rice-mill operation training for traders and farmers.	Trainings were exercised even after the termination. Appreciation for these activities promoted a wider coverage of trainees and led to a separate training.	Trainings for extension workers and rice-mill operation trainings were extended to cover workers in milling plants.	Progress for the said training in 1978/1979: rice milling; for 45 trainees. rice cultivation; for 250 trainees.
Grass-root level				
Extension effects	For line-planting, ferlizers and chemicals application, 100%. For machine use, 70%.	Effects were recognize for extension activities on variety, fertilizer, crop protection, appropriate management and post-harvest technology.	data unavailable	Effects were recognized for extension activities on variety, fertilizer application, crop production and water management in the descending order.
Production effects	Described above	ditto	ditto	ditto
Income effects	For all farmers, more than 100% incase of income. (through hearing survey on 70 farmer, but details were unknown)	Rice scarecity in the area as of 1970 turned to surplus producing since 3-4 years back.	Out of 19 farmers surveyed; 13 replied increased. 6 don't know.	Advance in 10 years was prominent, esp. for large farmer.
Farmer's association	Water-use associations started self-sustaining activities.	The later development unspecified.	Water-use associations were not formed.	A water-use association was formed 2 years after the termination. Owe to unirrigable fields functioning was disturbed.

III FUTURE COURSE IN WHICH THE PROJECTS WOULD BE DEVELOPED

III Future Course in which the projects would be developed

After the termination of the cooperation, both Pilot Projects, Leyte and Mindoro, revised their names as Regional Demonstration Training Center, and assumed a character of regional training center. Futhermore, a Regional Education and Training Center for technical personnel and leader farmers was set up under a nation-wide network, by merging facilities in the old Pilot Farm to those in the adjacent area, in 1978 in Leyte and in 1980 in Mindoro, respectively. Thus, the following 2 courses of development were noticed:

1) The former Pilot Farm ——— Demonstration Farm

2) Expanded training ———Farmers' Training Center

The newly established Farmers' Training Center was provided with new buildings and facilities and with a new staff. While, for the Demonstration Farm was assigned demonstration and extension services and short-course training for farmers in an extended area with the same staff and facilities as those of the Pilot Project. Thus, it seemed that the former took a new course of development and that the latter, a same course, but with a different objective. The activities in this new course of development was quoted from the 1979 progress report of Leyte and 1980 execution program of Mindoro,

Intensive Training Program for Agricultural Technicians and Leader Farmers —— PTC-RD and FTC-RD

PTC-RD: Philippine Training Center for Rural Development

FTC-RD: Farmers' Training Center for Rural Development

Agricultural policy in the Philippines experienced sig-

nificant changes in these 10 years. In the field of agricultural extension, a strategic emphasis came to lay on recruiting agricultural technicians and also on fostering leader farmers as the core of self-reliant development by farmers.

PTC-RD was put in force in 1977, by the President Order NO. 1145, as a strategic measure to perform "Masagana 99" program. While, FTC-RD was established as an organ oriented to regional development, with the facilities aid of IBRD. FTC-RD in Leyte was the firstcomer which started in business in 1979, and that in Mindoro started in 1980.

The importance of training given to technician and leader farmers should have been noticed at the earlier date. But at the same time, progress attained in the 2 Pilot projects, started 10 years ago as a test, might have deserved estimation.

FTC-RD aimed at training for farmers, but its substantial part of activities was seemed to be directed rather to middle-and low-class technicians than farmers, as shown in the table.

Progress of Training in 1979, Region VIII Leyte

Activities	Total
1. Course Offered	
(a) Rice production/Vagetable production and social technology (First level)	
— No. of farmer-leader/demonstrators	635
(b) Rice production and social technology (Second level)	
— No. of farmer-leader/extensionists	105
(c) Attitudinal/Behavioral training	
— No. of BAEX supervisors	71
(d) Multi-level training	
— No. of DPOs	26
— No. of DPEs	33
— No. of DPMs	6

2. No. of Training Batches 20

3. No. of Isolate Area Served 17

4. Supervisory Training 2

Note: Farmer-leader includes those in farmers organizations and clubs.

Source: Summary Report of Training Activities

Training Program in FTC, Region VII Mindoro, in 1980

District	Period	Place	No. of trainee DPM	DPE	DPO	Total
Or.Mindoro	2/19-29	FTC-RD Naujan	15	30	30	75
Occ.Mindoro	3/9-22	FTC-RD Naujan	15	30	30	75
Catanduanes	4/13-26	Virac,Catanduanes	15	30	30	75
do	3/9-15	do	-	-	50	50
do	3/17-23	do	-	-	50	50
Bundok Peninsula	4/27-5/10	UPLB	15	30	30	75
do	3/24-30	FTC-RD Naujan	-	-	50	50
do	4/10-16	do	-	-	50	50
Masbate	5/11-24	UPLB	15	30	30	75
do	4/17-23	Masbate	-	-	50	50
do	5/19-25	do	-	-	50	50
S.Palawan	6/15-28	Palawan	15	30	30	75
do	5/11-17	do	-	-	50	50
do	5/19-25	do	-	-	50	50
N.Or.Mindoro	7/10-23	FTC-RD Naujan	15	30	30	75
Camarines Sur	9/14-27	UPLB	15	30	30	75
do	8/10-16	Camarines	-	-	50	50
do	8/18-24	do	-	-	50	50

Camarines Sur	10/12-25	UPLB	15	30	30	75
do	9/8-14	Camarines	-	-	50	50
do	9/16-22	do	-	-	50	50
Louisiana, etc	11/16-29	UPLB	15	30	30	75
do	10/12-18	Louisiana	-	-	50	50
do	10/20-26	do	-	-	50	50

Note: 1) UPLB; University, Philippines, Losbanos.
2) DPM; Development Service Specialist(B.S.), with carrier of 5 years.
3) DPE; Development Programme Extensionist, with carrier of 1-3 years.
4) DPO; Development Programme Operators.

Suggestions and criticism given to this program by the grass-roots(extension workers and farmers) were:

1) More emphasis should be laid on a trainig for the purpose of fostering leader farmers.
2) Curriculum and teaching materials should be replenished.
3) Move attension should be paid for recruiting younger generation successors.
4) In paticular, more efficient use of and linkage between Demonstration Farms should be kept in mind.