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ESTABLISHMENT  
OF  
A PILOT CENTER  
FOR  
AGRICULTURAL DEVELOPMENT COOPERATION  
IN  
CAGAYAN

January 20, 1976

JAPAN INTERNATIONAL COOPERATION AGENCY

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## FOREWORD

This report has been prepared by a Feasibility Study Mission through consultations with Philippine Government officials and based on local surveys on the establishment of a pilot center for agricultural development cooperation in Cagayan.

The Feasibility Study Mission consisted of by Shigekatsu Watanabe (Chief, Agriculture Development Cooperation Division, Japan International Cooperation Agency) and three other members, and was commissioned by the Japan International Cooperation Agency.

The Mission consulted with Philippine Government officials and surveyed the planned pilot center site for 25 days from October 27 through November 20, 1975.

The report gives a concept as to what cooperation in agricultural techniques should be in the future, on the basis of the survey findings, and has an important meaning as a record of discussion (R/D).

This is an English translation intended for precluding misunderstandings between Philippine and Japanese officials and others concerned. We hope the book will be helpful as a reference.

We wish to express our profound gratitude to all the members of the Cabinet Coordinating Committee, and to the Central and Regional Government officials concerned for the full cooperation they extended to the Feasibility Study Mission.

SHIGEKATSU WATANABE  
Director, Department of Agricultural Development Cooperation  
Japan International Cooperation Agency

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## CHAPTER 1 BASIC CONCEPT OF COOPERATION

### 1-1 Purposes

CIADP is a project intended for overall agricultural development and includes this Agricultural Pilot Center Project as a part of it.

The CIADP programs (Fig. 1-1) include the following:

- 1) An Infrastructure Program for improving the agricultural infrastructure, mainly irrigation and drainage facilities.
- 2) A Social Development Program covering farm produce processing and distribution facilities and electric appliances for rural households.
- 3) An Agricultural Program for enhancing the effects of these social investments.

This project is included in the Agricultural Program mentioned in Item (3).

The Agricultural Program approaches the physical aspect of agriculture itself and a soft aspect which will make rural development more effective. Its purpose is to further develop the CIADP region by developing and improving agricultural techniques, particularly for rice growing which constitutes the mainstay of the region, and extending and establishing such techniques.

Although the Program is designed to fulfill this particular end in the first place, it is needless to say that the Program has the final purpose of enhancing the rural development of not only the Cagayan Valley Region but the Philippines as a whole.

### 1-2 Functions

The Agricultural Program's functions are diagrammatically illustrated in Fig. 1-1.

The Agricultural Program consists of:

- 1) An Agricultural Pilot Center Program, which will be carried out at the Agricultural Pilot Center (called A.P.C. for short);
- 2) A Leading Extension Program, which will cover the part of the farms of general farmers which have been improved under the Infrastructure Program as the Leading Extension Area (LEA);
- 3) An Extension Service Program for finally extending and establishing the agricultural

techniques which have been developed and improved at the Agricultural Pilot Center and corroborated by the Leading Extension Program.

#### 1-2-1 Agricultural Pilot Center Program

This program consists of the following three sub-programs:

##### 1) Trial Program

The Trial Program will be carried out at the trial farms of the Agricultural Pilot Center for the purposes of developing and improving agricultural techniques suitable to the natural, social and economic characteristics of the CIADP Region, and providing data for the extension of such techniques to be followed.

Applied trials may include a variety trial, a fertilizer trial, a water management trial, a farm mechanization trial, a pest control trial and a cropping system trial.

##### 2) Seed Distribution Program

This program is intended for introducing and establishing high-yielding varieties which will be an important factor for effective rice growing when rain-fed paddy fields have given place to irrigated paddy fields.

Specifically, the program will cover the following:

- a) Promising varieties offered by the IRRI, the University of the Philippines (UP) and the BPI will be put to an adaptability trial (a regional yield trial) and, if they are judged suitable to the region, they will be recommended to the Philippine Seed Board for recognition as Seed Board Varieties.
- b) Assistance will be extended to help organize private seed growers who will expand the Seed Board Varieties as certified seeds.

Work between the adaptability trial and seed production by seed growers, that is, the propagation of foundation seeds and registered seeds, will be undertaken by an existent Philippine organization. (See 1-3 Organization.)

These columns in the charts which extend to the right and left indicate mutually close relations.

##### 3) Extension Program

The Extension Program is closely related to the Leading Extension Program and the

Extension Service Program, which, all together, make up the overall CIADP extension system.

The Extension Program will cover:

- a) Inservice training of Farm Management Technicians (FMTs) who will directly approach and guide farmers -- including temporary or casual FMTs on a contract of one year or several months and those from outside the CIADP Region when necessary; training of leading farmers in the CIADP Region; and the training of seed growers;
- b) Providing information of developed and improved agricultural techniques to the farmers, and feeding back of information of the extent of establishment of these agricultural techniques among the farmers.

#### 1-2-2 Leading Extension Program

The Leading Extension Program has the following purposes:

- 1) Demonstration by farmers themselves of the agricultural techniques developed and improved at the Agricultural Pilot Center to other farmers in the region;
- 2) Fostering farmer organizations that are considered necessary as a step toward agricultural modernization in the Leading Extension Areas.
- 3) Guidance to the farmers necessary for Items (1) and (2).
- 4) Feedback of data on the above for study at the Agricultural Pilot Center.

Although the overall Agricultural Program may be carried out by degrees, it will be necessary for an early realization and establishment of modernized agriculture to provide at least the necessary materials and machinery to the farmers at reasonable prices in order to produce the minimum required impact in the process of execution of the Leading Extension Program.

The existent facilities in the Philippines will be utilized in carrying out this program. Considering the geographical location of the CIADP Region, its area and the progress of the Infrastructure Program, it will be reasonable to establish Leading Extension Area I (LEA-I), which will be under the guidance of the Agricultural Pilot Center, and Leading Extension Area II (LEA-II), under the guidance of existent facilities in the Philippines (Sub-Agricultural Pilot Centers may be organized if necessary).

#### 1-2-3 Extension Service Program

This program is designed to put the developed and improved agricultural techniques



in the hands of the end farmers and establish these techniques among them. This is the ultimate purpose of the Agricultural Program and therefore holds a very important position in this respect.

The Extension Service Program is based on the assumption that the existent facilities in the Philippines will be used as they are, or with some supplementation or reinforcement, for the execution of this program. Specifically, the municipal offices of BAE (DA) and DLGCD may be used as Extension Service Stations.

### 1-3 Organization

In principle, the existent facilities in the Philippines will be used as they are. This idea is exactly the same as presented in the report on the May-June 1975 survey.

Here, the overall organization of CIADP will not be touched upon (it being a subject to be discussed between the Philippine Government and the next feasibility study mission). Only the organization of the Agricultural Pilot Center which will be in charge of the Agricultural Program will be explained.

#### 1-3-1 Agricultural Pilot Center

As shown in Fig. 1-3, the Agricultural Pilot Center will comprise an Administration Division, a Trial & Seed Expansion Division and an Extension Division, and will have Leading Extension Area - I under the control of the Director of the Agricultural Pilot Center to make guidance effective and thoroughgoing.

It is expected that a Sub-Agricultural Pilot Center will be established within the present organization in the Philippines.

It is expected that the work to be undertaken by the Sub-Agricultural Pilot Center will be compatible with the policy of the Agricultural Pilot Center and that the materials and machinery required for Leading Extension Area - II will be supplied through the Agricultural Pilot Center as indicated by the heavy dotted line in the chart.

The same is true of the Extension Service Stations except that the materials and machinery will not be supplied through the Agricultural Pilot Center. Thus the relationship between the Extension Service Stations and the Agricultural Pilot Center is indicated by the light dotted line.

The organizations for the Seed Distribution Program and Extension Related Program under the Agricultural Program are explained below.

#### 1-3-2 Seed Distribution Program

The organization for the Seed Distribution Program has been partially described in 1-2-1 (2). It is as shown in Fig. 1-4.

The existent organizations in the Philippines in the chart are as follows:

- 1) Department of Agriculture (DA): The Department of Agriculture of the Central Government, the BPI being the bureau which handles matters concerning seed.
- 2) Philippine Seed Board: This Board has the right to issue permits for seeds under the supervision of the Department of Agriculture.
- 3) Regional Director of BPI: He is directly connected to the Central Government and has an Experiment Station and Seed Farms under his control.
- 4) Provincial Supervisor: He belongs to the Provincial Government, is responsible to the Provincial BPI, and has a Seed Inspector under his control.

Their relations to the Agricultural Pilot Center are indicated by light solid lines in the chart, and the coordination necessary for maintaining these relations is indicated by dotted lines in the chart.

Important factors regarding this organization chart are as follows:

- 1) It is desirable that the Agricultural Pilot Center will have the right to recommend high-yielding varieties to the Philippine Seed Board.
- 2) In the event the recommended varieties are approved as Seed Board varieties (quick approval is desirable in view of the relatively limited period of the present project), they must be expanded at the existent Experiment Stations and Seed Farms in the Philippines, and sufficient quantities required for the CIADP Region must be provided by seed growers.
- 3) Since the ultimate purpose of this program is to provide these varieties to general farmers to grow them, steps must be taken to make such varieties readily available to them more easily and at reasonable prices.

The success of these points is dependent on the existent facilities in the Philippines. It may be no exaggeration to say, therefore, that the Agricultural Pilot Center will be only complementary to these activities.

The chart shows information channels to the farmers. This perhaps should fall under the category of Extension.

### 1-3-3 Extension Related Program

As shown in Fig. 1-5, this organization incorporates an overall extension concept, to which time factors must of course be added. See 4. Schedule for a further description.

The existent organizations in the Philippines are outlined below.

- 1) Department of Agriculture (DA): The Department of Agriculture of the Central Government, the BAEx being the bureau responsible for matters concerning extension.
- 2) Regional Director of BAEx: He is directly under the Central Government.
- 3) Provincial Agriculturist: He belongs to the Provincial Government and supervises Farm Management Technicians. His Relationship with the Agricultural Pilot Center will be as follows:
  - a) Training
    - i) Farm Management Technicians will be trained at the Agricultural Pilot Center. FMTs from outside the CIADP Region may be accepted.
    - ii) As a rule, Leading Farmers in the CIADP Region will be trained. It would be effective to train, in addition, the chiefs of Barangai and Sitio.
  - b) Farmer Training will be as follows:
    - i) In Leading Extension Area - I, the technicians of the Agricultural Pilot Center and Farm Management Technicians of the existent Philippine organizations supervising the region which covers Leading Extension Area - I may jointly train the farmers. This would not apply if the Philippine Government decides to let the Agricultural Pilot Center alone take care of the region.
    - ii) As indicated in 2-2 Leading Extension Program, Leading Extension Area - II will be under the control of the Sub-Agricultural Pilot Center as shown in the chart.

Should the Sub-Agricultural Pilot Center undertake the training of farmers under the Extension Program of the Agricultural Pilot Center Program as one of its activities, we assume that it will take care of only a part of the region on behalf of the Agricultural Pilot Center. Of course, the technical information necessary for the Sub-Agricultural Pilot Center will be made available by the Agricultural Pilot Center.

- iii) The training of farmers in the CIADP Region outside the Leading Extension Areas will be undertaken by use of the existent extension organizations.

For this purpose, it is advisable that Extension Service Stations will be established by the Philippine Government. At the same time, constant organizational coordination will be essential between Farm Management Technicians and the Agricultural Pilot Center to enable the FMTs to convey the agricultural techniques developed and improved at the Center to the farmers.

#### 1-3-4 Others

Now that a systematic description of the organizations has been given, we would like to list the organization of Philippine Government concerned with the Agricultural Program under the present Administration. Coordination with these organizations on the part of the Philippine Government is expected in the future.

- 1) Trial Program:  
NFAC (National Food and Agriculture Council), DA (BPI, BS, BAEx), NIA.
- 2) Extension Program:  
DA (BAEx), DLGCD, NIA.
- 3) Leading Extension Program:  
DA (BAEx), DLGCD, ACA, NIA.
- 4) Extension Service Program:  
DA (BAEx), DLGCD, NIA.

#### 1-4 Schedule

The Agricultural Program schedule is closely related to the Infrastructure Program and is also dependent on the contents of the Agricultural Program itself. However, an outline schedule is shown in Fig. 2-5, the major points of which are explained below.

Considering that the fiscal year of the Philippine Government begins in July, the schedule envisages the construction of the Agricultural Pilot Center (including the construction of Experimental Plots) in two years beginning in July of 1976. According to this schedule, it would be necessary to make arrangements to start the Trial Program around July of 1977. It would also be necessary to secure living quarters for the experts (both Japanese and Philippine), the most important factor for carrying out the program, as soon as possible.

The Japanese experts are to be sent around July of 1976, when the construction of the Agricultural Pilot Center is expected to start, to serve as consultants on the construction of

the Center and to prepare for subsequent activities. It would be appropriate to station one of them in Manila as coordinator. The materials and machinery are to be shipped around January of 1977, when the construction of the Agricultural Pilot Center should be fairly well under way and when temporary storage facilities for them can be secured.

The Trial and Seed Distribution Program will start around July of 1977, when the construction of the Agricultural Pilot Center is about half way to be completed.

The Extension Program will start around July of 1978, when the Trial Program will have produced some results and the facilities required for training have been completed. Information activities will start a little later.

The Leading Extension Program depends on the progress of the Infrastructure Program. If an early completion of the program is desired in Leading Extension Area - I, the program must be started around January of 1979. If a still earlier completion of the program is desired by the persons concerned, the program may be begun in the rainy season of 1978. In this case, however, the details of carrying out the program will have to be worked out because the program would be applied to rain-fed paddy fields and subsequent conditions will vary greatly. The Leading Extension Program for Leading Extension Area - II will start around 1980, when the Infrastructure Program has been fully completed, or when it has been mostly completed with a part of the irrigated paddy fields available for use.

The Extension Service Program will start about the same time that the above activities begin in Leading Extension Area - I.

If the programs are to be executed according to the above schedule, it would be desirable for the effective execution of the project that it be divided into the following three periods.

1) Preparatory Phase

The construction of the Agricultural Pilot Center and the subsequent Trial Program and Seed Distribution Program constitute one period for a part of the cooperation project, which signifies the first phase of accumulating the important development and improvement knowhow of agricultural techniques. The period extends from April of 1976 to about July of 1978, during which it would be appropriate to extend cooperation based on the R/D.

2) Phase - I

Phase - I covers the period from the time when it is possible to carry out activities in Leading Extension Area - I to the time when activities are ready to be started in Leading Extension Area - II. During this period, the Agricultural Pilot Center Program will be fully implemented, and its achievements will be conveyed to Leading Extension Area - I and the farmers around the area.

Full cooperation will start under the agreement beginning in this period.

3) Phase - II

The major reason that the project is divided into Phase - I and Phase - II is as follows:

Because of the size of the CIADP Region, the completion of the Infrastructure Program will inevitably vary from one project area to another. In the case of the Agricultural Program, it is considered difficult for the Agricultural Pilot Center alone to cover the entire region. Therefore, Leading Extension Area - II may be established and a center to take care of it, for example, Sub-Agricultural Pilot Centers, may be established by the Philippine Government to implement the Agricultural Program over the entire region. As stated above, Phase - II will start subsequent to the start of activities in Leading Extension Area - II.

Fig. 1-1 Function Chart of CIADP (Especially Related to A.P.C.)

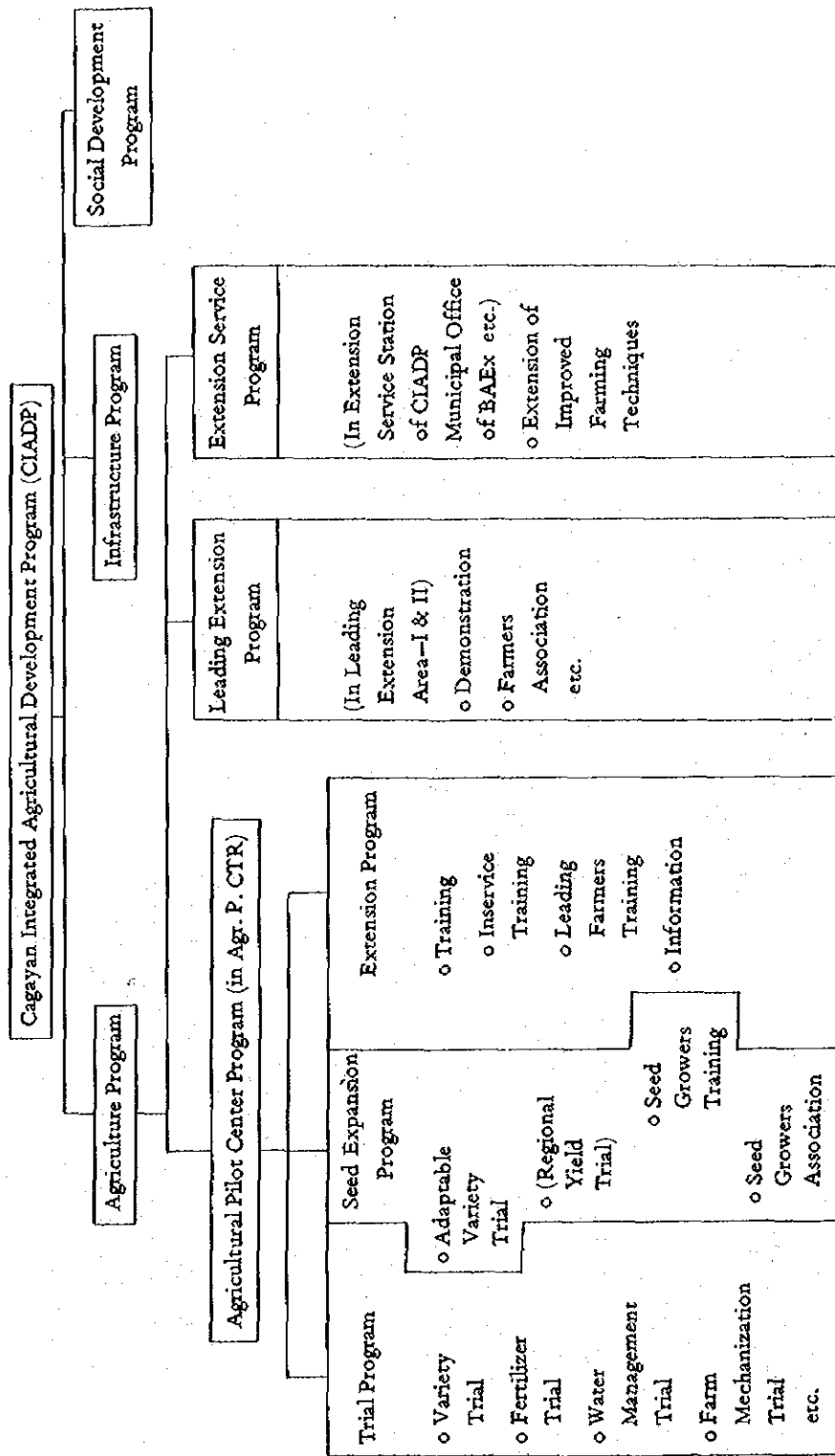
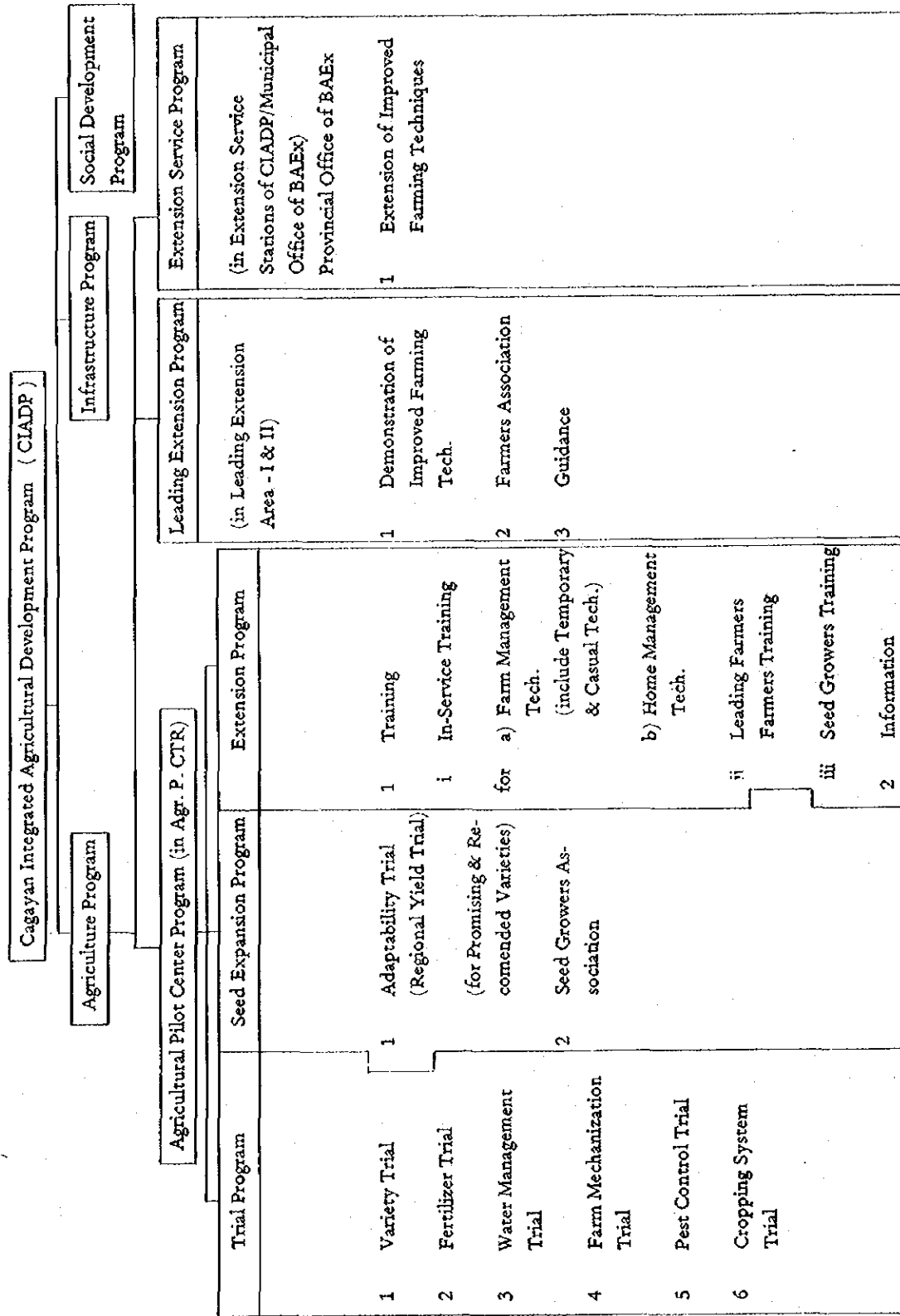


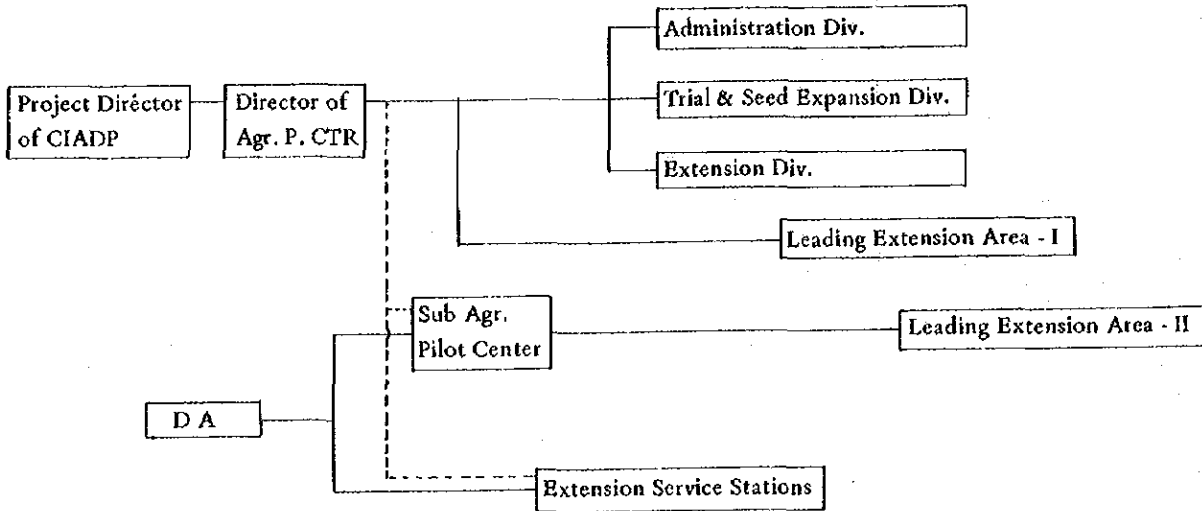
Fig. 1-2 Function Chart of CIADP (Especially Related to A.P.C.)





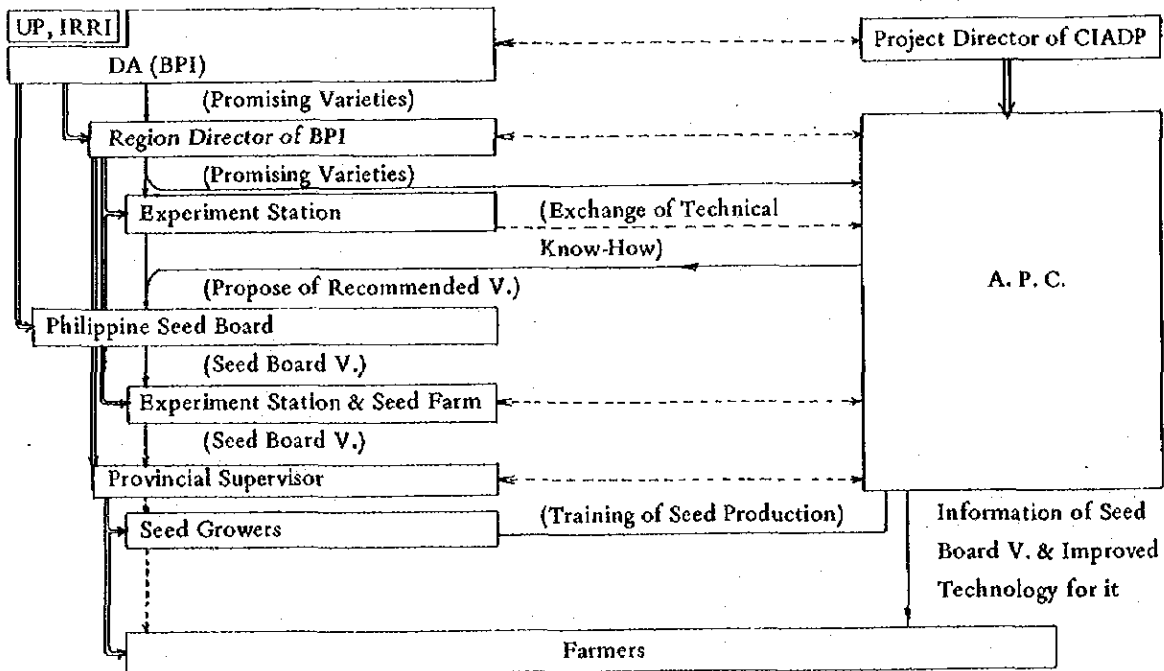
ANNEX-2-1

Fig.1-3 Organization Chart of The Agricultural Pilot Center



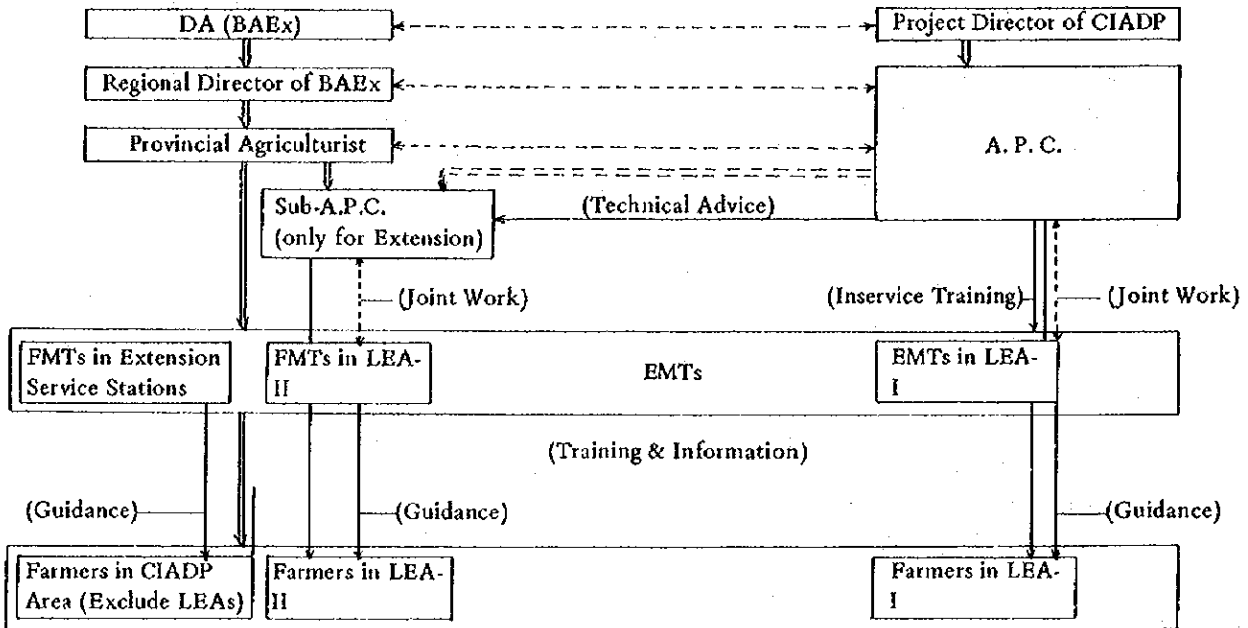
ANNEX-2-2

Fig. 1-4 Organization Chart of Seed Expansion Program



ANNEX-2-3

Fig. 1-5 Organization Chart of Extension, Leading Extension & Extension Service Programs



ANNEX-3

Fig. 1-6 Tentative Schedule of Agriculture Program in CIADP

	1976	1977	1978	1979	1980	1981	1982
	4 7 10						
1. Construction of							
1 Office, Laboratories etc.	-----	-----					
2 Workshop, Dormitory etc.		-----	-----				
3 Experimental Plot	-----	-----	-----				
4 Residential Houses	-----	-----					
2. Services of Japanese Experts	-----						
3. Provide Material, Machinery etc.							
4. Agriculture Program							
(1) Agr. P. C. Pro.							
1 Trial Pro.		-----					
2 Seed Expansion Pro.		-----					
3 Extension Pro.			-----				
(2) Leading Extension Pro.							
1 LEA - I			-----				
2 LEA - II			-----				
(3) Extension Service Program							
(Reference) Infrastructure Program							
1 Pumping Station		Factory	Transport	Installation			
2 Canalization							

## CHAPTER 2 DETAILS OF COOPERATION

### 2-1 Trial Program

This project is intended for regional rural development mainly through the improvement of rice productivity and the resultant increase in the agricultural income of the farmers in the region. The improvement of rice productivity implies the prerequisite of a shift from rain-fed paddy fields to irrigated paddy fields. The conventional, haphazard method of rice growing in rain-fed paddy fields using conventional seeds, no fertilizers and no pest control must be replaced by an intensive method involving improved varieties, fertilizers, pest control, water management and machinery, with the aim of producing 3.5 tons of rice per hectare by double cropping.

To establish this technique, it is necessary to conduct a series of applied research on a few crops so that the modern improved technique for irrigated rice growing that has been experimented in the tropical part of Asia may be adapted to the climate of the region and easily accepted by the farmers. The research results will subsequently be corroborated in farmers' paddy fields in the Leading Extension Area, and this will be touched upon later on. After trials on a few crops, the technique will be recommended for extension in the CIADP Region. The following are considered as applied trials.

- 1) Variety trial
- 2) Fertilizer trial
- 3) Water management trial
- 4) Farm mechanization trial
- 5) Pest control trial
- 6) Cropping system trial

These trials may be broken down into smaller categories as follows:

- 1) Variety trial
  - a) Adaptability yield trial

To study the characteristics of the recommended varieties in the Philippines, an adaptability yield trial will be conducted under varying conditions of planting density, planting patterns, fertilizer quantities, disease and pest control and water management so that the adaptability of each of the recommended varieties

to the CIADP Region may be clarified.

b) Varietal trial for cropping seasons

Varieties suitable for rainy-season cropping and dry-season cropping will be selected from among the recommended varieties.

2) Fertilizer trial

a) Three-element requirement trial

A trial will be continued for each cropping season under the same growing conditions to evaluate the effects of the three elements of nitrogen, phosphoric acid and potassium that are required for growing paddy rice, in the CIADP Region.

b) Suitable fertilizer application trial

Using typical varieties, the suitable application of fertilizers, mainly nitrogen, will be studied to determine a recommended standard for the CIADP Region, taking the economic aspects also into account.

c) Fertilizer application trial

Using typical varieties, suitable times and amounts of additional fertilizer which would be effective for increased yields will be studied.

3) Water management trial

a) Drought trial

The entire growth period will be divided into blocks of 10 to 15 days, during each of which irrigation will be stopped to determine when irrigation will be required for the growth of rice and how it will affect its growth and yield.

b) Water saving trial

Paddy fields will not be kept at full capacity of water, but will be irrigated every 7 to 10 days unless the growth of the rice plants slows down extremely, thus evaluating the effect of saving water on the yield and clarifying a water planning method for the CIADP Region.

4) Mechanization trial

a) Ploughing trial

Ploughing depth and time by tiller and tractor and expenditure of human labor and animal power will be studied relative to rice growth and yield.

b) Paddy drying trial

A variety of paddy drying methods will be compared as to their processing quantity, time and expense as a way of developing a paddy drying method suitable to the CIADP Region.

5) Pest control trial

a) Pest control trial

Various kinds of insecticides will be compared as to their effects in connection with the number of times they are sprayed.

b) Disease control trial

6) Cropping system trial

Various cropping systems, such as rice-rice, rice-fallow, rice-maize, rice-maize-mongo beans, rice-soybeans, and rice-soybeans-mongo beans, will be tried continuously for a few crops to compare their productivity, the change in soil fertility, economy, etc. and thus determine their comparative merits.

These trials will require 3 hectares of water paddy fields, which should be divided into plots of 0.05 hectares each that can be individually irrigated and drained.

The Trial Program is an important one essential to the development of an improved technique for double rice cropping which must be extended in the CIADP Region. Therefore, the program will have to be carried out with the cooperation of the agricultural organizations concerned in the Philippines. The organizations which will be directly concerned with the program include the National Food and Agriculture Council, the Bureau of Plant Industry, the National Irrigation Administration, and the Bureau of Agricultural Extension. Those which will be indirectly connected with the program include the College of Agriculture, University of the Philippines, and the International Rice Research Institute whose cooperation is also indispensable to the program.

It is hoped that Philippine counterparts of Japanese experts will be selected from among those employees who are closely associated with these organizations. The experts required for the Trial Program must be agricultural technologists specializing in agronomy, irriga-

tion engineering, farm machinery, soil and fertilization and pest control. In addition, extension specialists and experts in rice extension, seed growing, farmer's organization and machinery will have to be sent from Japan to carry out the work for the Agricultural Pilot Center. Each of these branches may need more than one expert, and some of these branches may require only short-term (one year or less) experts for carrying out the assignments.

## 2-2 Seed Expansion Program

The efforts on the development and extension of an improved double cropping technique will be centered around the extension and establishment of improved varieties which will be non-photosensitive and nearly constant in growing period in whichever season they might be grown. This requires selection of high-yielding varieties and their expansion. Seed expansion work is already being improved and expanded as one of the important activities of BPI with Japanese cooperation. Avoiding duplication with BPI, the Agricultural Pilot Center will undertake the following trials, as well as seed conservation and the training of seed growers.

### 1) Regional yield trial

Promising varieties offered by IRRI, BPI and UPCA will be compared with existent Seed Board varieties as regards productivity and disease resistance; and high-yielding varieties will be recommended to the Seed Board as suitable to the CIADP Region, requesting the Seed Board to register them as Seed Board Varieties.

The recommended varieties will be expanded to eliminate a time lag accompanying seed expansion when new varieties are selected as recommended varieties. Only the foundation seeds and registered seeds will be made available from the Agricultural Pilot Center. These seeds will be supplied via BPI to seed growers in the Province of Cagayan for expansion purposes at reasonable prices.

### 2) Variety conservation

The recommended varieties and major native varieties will be conserved to compare them and supply seeds for trials. Also, varieties resistant to salinity injuries anticipated in the CIADP Region will be conserved.

### 3) Seed grower training

Expansion of high-yielding varieties is essential to the extension of the improved techniques and new varieties. Seed expansion will be undertaken by seed growers in the Province of Cagayan under the supervision of BPI. The Agricultural Pilot Center will conduct inservice training of the BPI employees concerned with seed growing and the training of seed growers in the Province of Cagayan in an effort to improve seed growing techniques.

A total of about 5 hectares of paddy fields will be readied as trial fields for the Seed Distribution Program, including about 1 hectare each for the regional yield trial and the seed conservation, about 2 hectares for foundation seed and registered seed expansion, and about 1 hectare for training purposes (including mechanized training to be discussed later).

### 2-3 Extension Program

The Extension Program to be executed at the Agricultural Pilot Center will cover 1) the inservice training of Farm Management Technicians (FMTs) and the training of leading farmers and seed growers, and 2) the extension of the agricultural techniques developed and improved at the Agricultural Pilot Center to the farmers, as well as various kinds of information activities to evaluate the degree of penetration and establishment of such techniques among the farmers.

#### a) Training

The Training Program will cover, in the first place, the inservice training of Farm Management Technicians, who will directly guide the farmers, and the training of the leading farmers and seed growers in the Leading Extension Area at the Agricultural Pilot Center (including training at training farms) regarding the new rice growing techniques developed and improved at the Agricultural Pilot Center, particularly mechanized rice growing techniques and rice growing management techniques, so that these techniques will become widespread and established among the farmers as early as possible for the promotion of agriculture in the CIADP Region. In the next stage, when the Leading Extension Program for teaching and demonstrating the rice growing techniques is under way, all the Farm Management Technicians in the Cagayan Region will be educated and trained at the Agricultural Pilot Center regarding the new rice growing techniques, mechanized techniques and rice growing management techniques.

After the Farm Management Technicians complete education and training by Japanese experts, they will train general farmers in the Leading Extension Areas, and the Barrio Captain, leader farmers, other farmers and seed growers in the CIADP Region.

In this case, the Japanese experts will provide appropriate guidance and advice to the Farm Management Technicians, who will undertake such training, whenever necessary.

It might be effective to include guidance for mayors and councillors, as necessary, in the training program undertaken by the Farm Management Technicians. This is intended to acquaint them with and get their understanding of the new rice growing techniques, mechanized techniques and agricultural management techniques developed and improved at the Agricultural Pilot Center to arouse their interest in them and thus induce them to adopt the new techniques for dispersal among other farmers in their communities.

b) Information activities

To achieve an early propagation of the agricultural techniques developed and improved at the Agricultural Pilot Center among the farmers in the CIADP Region, it is important not only to teach and demonstrate the new techniques to the farmers but also to convey additional information on them to the farmers, evaluate the degree of their penetration and establishment among the farmers, and learn the farmers' evaluation and opinion of the new techniques.

Specifically, a wide range of information activities will be undertaken, including conveying of information to general farmers and key farmers as a way of propagating the new techniques and collection of information necessary for feedback. The materials and machinery necessary for such extension training and information activities will be maintained, and manuals, pamphlets and audiovisual aids on agricultural techniques suitable to the intellectual level of the farmers of the region will be developed and prepared at the Agricultural Pilot Center.

2-4 Leading Extension Program

The Leading Extension Program is intended for establishing the progressive agricultural techniques developed and improved at the Agricultural Pilot Center among increasing numbers of general farmers and demonstrating them to the farmers in the neighboring areas. In the Leading Extension Areas, therefore, the same production conditions as prevailing on the farms of the CIADP Region will be used. (For example, the existent farms of general farmers with irrigation canals and roads for mechanized farming may be used for this purpose.) In Leading Extension Area-I, concentrated training in the rice growing techniques developed and improved at the Agricultural Pilot Center will be given by the Center; and in Leading Extension Area-II, the new techniques will be demonstrated in farmers' paddy fields under the guidance of existent organizations in the Philippines with the aid of guidance from the Agricultural Pilot Center.

Since the farmers in the CIADP Region lag behind their counterparts in the other regions as regards their knowledge and techniques of rice growing, it would seem difficult for them, who must be conservative, to immediately accept an advanced system of mechanized rice growing techniques. Therefore, the extension of the new agricultural techniques will be undertaken gradually step by step. And by providing concentrated training on rice growing techniques, etc. to the farmers in the Leading Extension Areas, and by carrying out extension activities for other farmers in the CIADP Region, they will be encouraged to take a step forward in the advancement of their agricultural techniques.

Through the acceptance of the new rice growing techniques, the farmers may grow aware of the need for an irrigation association and group work. By inducing them to organize modern farmer organizations, the new techniques can be propagated to all the farmers in the region.



## 2-5 Extension Service Program

This program is intended for propagating the agricultural techniques developed and improved at the Agricultural Pilot Center among the end farmers in the CIADP Region and in the whole Province of Cagayan. It is to play a very important role as the final stage of the Agricultural Program.

The penetration and establishment of the new techniques among the end farmers depends on the smooth execution of the leading extension activities in organic coordination with the Agricultural Pilot Center.

Therefore, it would be best for existent Philippine organizations, mainly BAE, which are providing guidance in direct contact with the local farmers, or a reinforced organization based on such an existent organization, to undertake the extension of the new techniques to the end farmers.

The Agricultural Pilot Center will maintain contact with the provincial extension organizations in the CIADP Region to achieve an early propagation of the new techniques, and provide advice and guidance by touring the Region as occasion demands to help the Farm Management Technicians in their activities.

