

PD-ARR-025

**Agency for Agricultural Research and Development  
and  
U. S. Agency for International Development**

**APPLIED AGRICULTURAL RESEARCH PROJECT  
MID - TERM EVALUATION REPORT**

**497 - 0302**

**December 5 - 23, 1983**

PD-17110-225

Agency for Agricultural Research and Development  
and  
U.S. Agency for International Development

Applied Agricultural Research Project  
Mid-Term Evaluation Report  
497-0302

December 5-23, 1983

Applied Agricultural Research

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## Table of Contents

	<u>Page</u>
<u>Executive Summary</u>	1
<u>Chapter I - The Research Setting</u>	
A. Country Setting	6
B. Agricultural Development Program	7
C. Organizational Structure of AARD	9
<u>Chapter II - Project Description</u>	
A. Goal, Purpose and Objectives	22
B. Planned Outputs and Inputs	23
C. Major Assumptions	24
D. Financial Plan	24
E. Planned Implementation Schedule	24
F. Roles and Responsibilities	25
G. Factors Affecting the Project Plan	26
<u>Chapter III - Project Progress to Date</u>	
A. Introduction	28
B. Organization and Planning	28
C. The Technical Assistance Component	30
D. The Construction Component	35
E. The Procurement Component	42
F. The Short-Term Training Component	46

## Chapter IV - Project Management

A. Project Management as Originally Stated	
in the Loan and Grant Agreements	51
1. The Role of AARD	51
2. The Role of Technical Assistance	51
B. Current Staffing and Support	
Arrangements for AARP	52
1. Major Components	52
2. The PIU	52
3. Technical Assistance	53
4. USAID Monitoring	53
C. Role of the Technical Assistance	
Contract Team	53
D. USAID Monitoring and Support	54
E. Observations and Recommendations	
to Improve Management	54
1. General Observations and	
Recommendations	54
a. Observations	54
b. Observations directly related to AARP	58
c. Recommendations	60
2. Observations and Recommendations	
Related to AARP	61
a. Observations	61
b. Recommendations	61
3. Observations and Recommendations	
Specific to PIU	65
a. Observations	65
b. Recommendations	66

4. Observations and Recommendations	
Regarding RMI Management	67
a. Observations	67
b. Recommendations	69
5. Observations and Recommendations	
Specific to USAID	70
a. Observations	70
b. Recommendations	72
<u>Chapter V</u> - Action Plan Requirements	73
<u>Chapter VI</u> - Policy and Program Implications	78
<u>Appendixes I - IV</u> - Figures and Tables	
Appendix I, Table 1	81
Appendix I, Table 2	82
Appendix I, Table 3	83
Appendix I, Table 4	85
Appendix I, Table 5	86
Appendix I, Table 6	87
Appendix II, Figure 1	88
Appendix II, Figure 2	89
Appendix II, Table 1	90
Appendix II, Table 2	91
Appendix III, Table 1	92
Appendix III, Table 2	94
Appendix III, Table 3	96
Appendix III, Table 4	97
Appendix III, Table 5	98
Appendix III, Table 6	99
Appendix III, Table 7	100

Appendix IV, Figure 1	104
Appendix IV, Figure 2	105
Appendix IV, Table 1	106
Appendix IV, Table 2	120
Appendix IV, Table 3	125
Appendix IV, Table 4	127
<u>Appendix V</u> - Summary of AARP Evaluation Recommendations	128
<u>Appendix VI</u> - List of Persons Contacted during AARP Evaluation	142
<u>Appendix VII</u> - AARP Evaluation Scope of Work and Methodology Used	145

## EXECUTIVE SUMMARY

### A. Problem and Overview

The Applied Agricultural Research Project (AARP) is intended to assist Indonesia's Agency for Agricultural Research and Development (AARD) in expanding and improving agricultural research in Indonesia.

Indonesia is a land over thirteen thousand six hundred islands strung across three thousand five hundred miles of ocean. Rich in natural resources and enjoying a favorable climate, the country is nonetheless faced with socio-economic problems. Its population of 153 million people make it demographically the world's fifth largest nation. Eighty percent of the people live in rural areas. Agriculture is the nation's largest economic sector, contributing 66 percent of all non-petroleum exports and 35 percent of GDP.

Indonesia's third Repelita (five year plan) stresses agricultural development to increase production and work opportunities and distribute income more equitably, and the government is investing heavily in agricultural research as part of its development strategy. Nineteen donors are contributing to AARD, which is growing rapidly in size and capacity. The organization oversees research done by 27 institutions, and absorbs 12 percent of the Ministry of Agriculture's budget.

### B. U.S. Assistance

America assists Indonesian agricultural development through many agricultural, rural development and education projects. Its bilateral contributions to agricultural research flow through AARP, the Sumatra Agricultural Research Project and a number of Centrally-Funded CRSPs. AARP is focussed on the development of AARD research institutes, stations and experimental farms at up to nineteen locations on five islands in the eastern half of the country. These institutions are for research on Food Crops, Animal Husbandry, Forestry, Fisheries and Industrial Crops.

### C. Purpose of Evaluation

This is a mid-term evaluation to assess progress, analyse problems, suggest course corrections and identify policy and program issues for future consideration in project design. The Evaluation Team reviewed project and AARD documents, talked extensively with project administrators and scientists (including expatriate consultants), and visited field sites of on-going and planned research accompanied by AARD and USAID Officers. A draft of the report was reviewed with concerned AARD leaders and consultants as well as with USAID staff, to insure factual accuracy and perceptual honesty.

### D. Major Findings

The project, designed for seven plus years, was approved for five and appropriate reductions in scope were not made at the beginning because designers and implementers anticipated approval of an extension period. Wide in both geographic and substantive scope and with a new kind of cooperative GOI-USAID effort, it has been slow in organizing for the fast pace demanded by the shorter than planned authorization period. Consequently, the schedule for implementing the project is behind planned targets in all of its component parts - technical assistance, construction, equipment procurement and short-term training. Several important issues require priority attention and resolution if the project is to come close to meeting its purpose and planned objectives. Progress has also been affected by rising prices and somewhat austere economic conditions in Indonesia caused by depressed export markets and a thirty-two percent devaluation this year of the rupiah.

AARD is under stress because of its rapid growth and large number of commitments. AARP, though but a small part of the total AARD research program, also feels stress and needs to be adapted to better fit the requirements of the changing scene. Unless several changes are made -- in targets and in ways of operation -- the project will fall short of its goals and not be able to serve its intended purposes to the desired extent. Time is a factor -- the PACD is September 30, 1985 -- but this is not the primary problem. Management and coordination need

strengthening, and more people should be assigned to planning and implementation functions on a full-time basis. Monitoring of the technical assistance contract, through which a fine technical assistance team of experts has been fielded, should stress more effective, comprehensive annual work plans and better performance in a master plan formulation and follow through, especially on the resolution of policy issues that affect the intended scope and direction of project activities.

To this date, more than three years into the five year project life, only 10.72 percent of USAID loan funds, and 34.71 percent of USAID grant funds, have been expended. In addition to the procedural delays referred to above, ambiguities and gaps in the Project Paper and conflicting signals emanating from organizational and policy changes within the AARD system have contributed to problems the Evaluation Team has identified in the course of the review. Although some of these problems are major and require the resolution of difficult issues, the Evaluation Team feels confident that the project remains essentially useful and viable and should be continued. A six-month extension of the PACD would allow for the rationalization of certain issues affecting planned future USAID assistance to agricultural research in Indonesia, and permit correction of identified deficiencies which would enable a higher degree of success to be achieved than would be the case were an extension not granted.

#### E. Project Design and Policy Implications

The conclusions and recommendations in this evaluation report point to a number of factors which have had a significant impact on the project's course which should be taken into account in future policy formulation and project designs. Among the most important of these are the following:

1. Care should be taken to rationalize project designs and schedules with policy requirements at an early point in their formulation and to allow in them sufficient leeway to adjust to anomalies and changes as these develop over time.

2. Designs should devote at least as much attention to process as to function if projects are to remain viable and appropriate over changing time.
3. While design of project inputs should be specified to a degree that they are effectively measurable as indicators of progress toward objectives, they should not be equated with objectives or allowed to become rigid requirements.
4. Project policy makers and implementers should jointly review project progress and evolving problems at regularly scheduled points along the way.

The Evaluation Team has concluded that ample scope exists for highly productive collaboration between AARD and USAID in addressing future needs of Indonesia's agricultural research system, and is convinced that lessons learned from AARP and other current research-oriented cooperative endeavors will help in formulating an effective continuation program of support to this crucially important area.

#### F. Major Conclusions and Recommendations Needing Immediate Consideration

The Evaluation Team has made a total of forty nine (49) specific recommendations for consideration by AARP policy makers and implementers. These are found in Chapters III, IV and VI. In addition, general guidelines for consideration in developing an Action Plan to cover the final years of the project are presented in Chapter V. Many of these numerous recommendations are linked one with the other because they concern facets of the same general notion or are tied to a particular sequence of events. While the Evaluation Team believes all of the recommendations are substantive and worthy of serious consideration, the following items hold particular importance as elements in the proposed agenda for immediate action. Their presentation here does not necessarily rank them by priority or sequence.

1. Construction: Chances of successfully completing the planned construction program is remote, therefore, the project should scale-down this component. The Evaluation Team recommends a change in the cost sharing for construction from 58.58% GOI/43.42% USAID to 35% GOI/65% USAID.
  
2. Procurement: The GOI and USAID should resolve the procurement issue very quickly. If the impasse cannot be resolved and if no feasible alternative solutions to the procurement problem can be found, the GOI and USAID should reconsider the project's purposes and viability and reach a decision on whether to continue or terminate the project.
  
3. Annual Work Plan: AARD and the Technical Assistance Coordinator should sit down together and develop an Annual Work Plan for the remaining life of the project.
  
4. Workshops: The Evaluation Team recommends a series of workshops to better identify research activities and manpower requirements of rice crop based and/or industrial crop based farming systems for specific agro-climatic zones.
  
5. Strengthen the Data Base Unit: The Evaluation Team recommends strengthening the Data Base Unit within the AARD Secretariat. This will assist AARD in managing personnel, finance and programs as well as monitoring programs critical to the effective operation of AARD.

CHAPTER I

THE RESEARCH SETTING

A. Country Setting

Indonesians refer to their country as Tanah Air Kita, which means Our Land and Water. It consists of an archipelago of more than 13,600 islands in the Java, Molucca and Banda Seas, over 3000 miles in length, longer than the distance between Maine and California. The geographical distances and nature create great variations in the seasons, weather conditions, soil type and vegetation. The same physical separation creates differences in the people, their customs and cultures. While Indonesia enjoys wide variety and the diverse beauty of nature, the nation is faced with many socio-economic problems but is continuing to struggle and overcome them and improve the welfare of the Indonesian people.

The Government of Indonesia (GOI) is engaged in serious and long-term efforts to develop its economy. Efforts of the GOI, with continuing support from the United States Government and other donors in increasing the food supply, improving nutrition, family planning and creating employment opportunities are improving future prospects for Indonesia's poor.

With its substantial oil, mineral, forestry and fishery resources, Indonesia is developing. One of the major constraints to development is its large population, which is the fifth largest in the world, estimated at 153 million in 1982. Between 65-70 million Indonesians still live in poverty. Some 93.8 million or approximately 63% of the population live in Java and Bali which accounts for 7% of the total land area. This is equivalent to a population density of about 1,864 persons per-square mile or 723 persons per square kilometer for Java and Bali.

Approximately 75 million hectares of Indonesia's total land area of 191 million hectares have potential for agricultural development. Of this 75 million hectares, 16.4 million are cultivated for food crops, of which one fourth is irrigated. Forestry concessions account for 40 million hectares and the remaining 18.6 million hectares are devoted to fishery, rangeland and other agricultural enterprises.

Nearly 80 percent of the total population live in the rural areas. Two-thirds of this group are engaged in some form of agriculture. Agricultural products account for 66 percent of all non-oil exports and 35 percent of the GDP. Clearly, agriculture is Indonesia's major economic sector.

B. Agricultural Development Program

From 1945, when Indonesia gained independence, until 1966/1967, economic performance was poor. By the end of that period agriculture and industry were stagnating. It was at that point that the GOI recognized the need for a clear definition of its goals and for careful development planning.

The first five-year plan (Repelita I), initiated in 1969, emphasized political and economic stabilization, rehabilitation of deteriorated infrastructure and laying the groundwork for future development. Repelita II began in 1974 and placed emphasis on increasing income and employment opportunities, and for more equitable distribution of income and development benefits.

The development budgets for Repelita II demonstrated not only a strong emphasis on growth generally, but also an expanding emphasis on transmigration, agriculture and meeting the population's basic human needs. The economy grew at an average annual rate of 7% in real terms and per capita GNP grew at an average rate of 5% per year during Repelita II, 1974-1978.

The primary GOI agricultural development objectives in Repelita III are to: (1) increase agricultural production, (2) increase work opportunities, and (3) distribute income on a more equitable basis. GOI expenditures in the agricultural sector during this period are expected to total some Rp. 441,426 billion.

Seventy-eight percent (78%) of the total is expected to come from the State budget with the remaining twenty-two percent (22%) from foreign donors and international credit institutions. The total amount is allocated into fifteen sub-sectors and activities, as illustrated by Appendix I, Table 1.

The highest share is allocated to food crops production (28%), and plantation crops (15%). The remaining fifty-seven percent (57%) of the budget is allocated among the remaining thirteen agricultural sub-sectors and activities, e.g. animal and fisheries production, forestry and agro-economic development, agricultural extension, agriculture extensification, natural resources management, transmigration and manpower development. Agricultural Research accounts for nearly 16% of the total budget and almost 30% of that portion which is not directed towards food crops or plantation crops.

The GOI's programs and policies in Repelita III are to: 1) increase credit availabilities and provide price supports for primary/secondary food crops and small ruminant production; 2) expand extension services and upgrade the competence of its agricultural specialists; 3) improve tertiary and quaternary irrigation/drainage facilities in rice/non-rice areas, including development of appropriate farmer organizations to operate and maintain them; and 4) stress research efforts to assure the availability of appropriate inputs and technology adapted to Indonesia's unique agro-ecosystems. This five year plan is a balanced and valid approach for increasing the access of the rural poor to productive resources/inputs and for increasing the rate of growth of agricultural production/incomes. Although the

agricultural development objectives in Repelita IV have not yet been announced by the GOI, it is assumed that these will seek to:

1. Strengthen the effort to increase agricultural production in order to achieve self sufficiency in food, which can fulfill the nutritional needs of the population and broaden support for domestic industry.
2. Increase foreign exchange through export of agricultural products and import substitution.
3. Broaden job opportunities, increase income of farmers and fisherman and support rural development by maintaining natural resources and the environment properly.

C. ORGANIZATIONAL STRUCTURE OF AARD

Since its establishment in 1974 the AARD has maintained a fairly constant organizational structure. This has helped it maintain a viable and consistent research program and development effort within the organization.

Prior to the Presidential Decree of 1974 that set up the AARD, the Research Institutes were under the authority of five technical Directorates General in the Ministry of Agriculture (Food Crops, Estate Crops, Forestry, Fisheries, and Livestock). Also, the Center for Statistics and Data Collection and the Agricultural Library provided support services to the Directorates General.

These were all brought under the control of the AARD in a transfer that took place over a two year period. In 1976 the AARD began implementing its own organizational framework from which to operate.

The Director of each Research Center reported to the Director General of AARD and was responsible for coordinating research programs and preparing the budget for institutes related to his center. The

Director General was assisted by a Secretariat and Directors of the Research Centers in the role of planning research activities in the Research Institutes.

In 1979, in order to spread the responsibilities of handling the research programs, Presidential Decree No. 47 established five Central Research Institutes (Food Crops, Fisheries, Industrial Crops, Animal Husbandry, and Forestry) to assist the Director General in coordinating and carrying out the AARD research programs. Due to the unique historical development of the Research Institute for Estate Crops, they remained under a Board of Management, with the Director General of the AARD serving on that Board.

In May of 1983 another Presidential Decree was issued that changed some of the functions of the Central Research Institutes and consolidated some programs into new units. An organization for Horticultural Crops was established and the Center for Agricultural Research Programming was integrated in the Secretariat. Also, Agricultural Quarantine was removed from the AARD and Forestry shifted to the new Ministry of Forestry. The Central Research Institutes duties changed somewhat and they are now referred to as Research Coordinating Centers. They, along with the two Research Centers (Center for Soils Research and Center for Agro-Economic Research), the National Library for Agricultural Sciences and the Center for Statistics and Data Processing, will now serve as staff units of the Director General.

The individual Research Institutes, where the research programs are actually implemented, will now have more authority to establish their own programs and handle more of the budgeting and supervisory responsibilities in their day-to-day operations. Each of the Research Institutes have been given a mandate to become centers of excellence in particular commodity areas. They will also serve as national reference points for a particular commodity area. For instance, the Maros Research Institute for Food Crops will now become the national center for research on food crops in upland, dry climate areas. This does not mean that this will be the only site for research in this particular area; other institutes will aid in the research program and various experiment stations and laboratories will help support the total research program.

However, scientists stationed at Maros will take the lead in establishing research priorities on food crops research in upland, dry climate areas.

The Research Institutes are referred to as third echelon units. The Research Coordinating Centers, the two Research Centers, the Center of Statistics and Data processing and the National Library for Agricultural Sciences and the Secretariat make up the second echelon units. Their responsibilities under the reorganization will be as follows:

#### RESEARCH CENTERS

Soils Research - The mandate of the Center for Soils Research is to conduct research to support the characterization, utilization and conservation needs of land resources. It supports research done by all other AARD Research Institutes and provides support to other programs within the Ministry of Agriculture and other ministries as constraints allow.

The laboratories of this center are responsible for soil, water and plant analysis as requested by the various Research Institutes. It also assists the Director General of AARD in guiding and coordinating soil fertility and productivity research programs carried out by the individual research stations.

Research in support of the Transmigration program is supervised by the Center for Soils Research. The main research activities are locating suitable areas for transmigration and developing appropriate farming systems. This includes preparation of general and detailed resource inventories through aerial photography and sample ground surveys.

Field experiments to develop appropriate farming systems for upland and swamp areas are conducted on 10 sites in Sumatra, Kalimantan, and Sulawesi. In support of these experiments, the Soils Research Center conducts soil fertility trials on soils from potential transmigration areas.

The Soil Research Center has developed in cooperation with the FAO one of the first land evaluation computer systems. This computerized program allows the Center to develop computerized agro-ecological data bases; assess agro-ecological crop suitabilities in specific geographic regions; make economic comparisons of suitable crops for the specific soil type to determine the optimum resource use for maximum yield; assess the soil erosion hazards by location and crop; identify the most economical soil conservation options; and determine what levels of cash, labor and materials are needed to optimize production.

All of these activities are under the direct authority of the Director of the Center for Soils Research who reports directly to the Director General of the AARD.

Agro-Economics - The Center for Agro-Economic Research (CAER) provides timely information and research findings on the economic aspects of Indonesian agriculture. This information allows policymakers to make decisions based on up-to-date data. The CAER regularly carries out in-depth economic analyses and monitors the economic and socio-economic impact of agricultural development policies on production, employment, income and asset distribution. As part of its mandate, the CAER provides leadership in agro-economic research among the various Research Institutes within the AARD.

CAER, under the direction of the AARD, initiated a long term research effort called the National Panel of Farmers or PATANAS. Under PATANAS a wide cross-section of the farm population cooperates in providing CAER with reliable data for research purposes. These findings will assist the government in identifying ways to help alleviate rural poverty.

Included in the PATANAS research is a systematic monitoring of the impact of government policies on economic activity in rural Indonesia. PATANAS data are collected at quarterly intervals to make sure that government officials are alerted to any major shifts in agricultural activities.

Another CAER research project is the determination of the prospects of agricultural export commodities. This provides policymakers reliable information on (a) the prospect and position of Indonesian exports in the world market, (b) supply potential, and (c) the efficiency of the marketing system.

Still another effort is being made to establish a panel of fishermen that would provide much the same data as derived from the PATANAS program.

Continuing studies are conducted to monitor the adoption of new technology on the farm level; determine off-farm employment trends; follow the shifts in farm inputs such as fertilizers, herbicides and seed. Also, studies are run on farm incomes and wages, distribution of assets and credit availability.

## 2. CENTERS

Center for Statistics and Data Processing - This Center links data collectors and information users, and assists the Director General of AARD in research management through the processing, storage, and retrieval of information. The various Research Institutes serve as both data collectors and information users. The Center also provides for statistical coordination and support of data collection, processing and analysis systems for all of the research institutes. It also provides computer training for personnel within the AARD. It is responsible for the management of a comprehensive computer information system, designed to serve the entire Ministry of Agriculture. Efforts are now underway to expand its capacity and to develop new ways of receiving data from data collection located on the Outer Islands.

National Library for Agricultural Sciences - The National Library serves as a conduit for information coming from outside sources and for information generated within the AARD. In order to perform this function, the Library is divided into three main sections; library service, information service, and publications.

The library services section collects, analyzes, stores, and makes available to users information generated through agricultural research publications and general articles, papers and books relating to agricultural topics. This service is limited to specific locations. Each Research Institute has a library. The NLAS provides the opportunity for training in library service to persons managing the Research Institute libraries and acts as the central receiving location for national and international information exchange related to journals, bulletins, reports and other materials.

The information section of the NLAS tries to identify the information needs of the potential users and provide information relating to their specific needs. This section of the NLAS uses persons trained in specific subject matter areas to work with agricultural scientists and policymakers in those particular areas.

In the publications section, the NLAS tries to identify topics of broad interest for policymakers and the general public to keep them informed of the work of the AARD. Publications are also generated to satisfy internal needs of the scientists and administrators in keeping in touch with the current literature in their fields. Another function of the publications section is to publish journals and reports that highlight the overall research programs of the AARD and in coordinating the training activities of the libraries, research dissemination units, and equipment usage at the Research Institute level.

### 3. SECRETARIAT

The Secretariat of the AARD - The main responsibilities of the Secretariat are to provide technical and administrative services to all the organizational units in the AARD. Also, the Secretariat provides direct staff support to the Director General of the AARD.

More specifically, the Secretariat:

1. Coordinates the formulation of research and development programs for the AARD;
2. Administers the collaborative and cooperative agricultural research and development activities;

3. Coordinates the preparation of the budgets for all of the units of the AARD and carries out financial administration;
4. Manages personnel administration;
5. Conducts general administration;
6. Carries out the general administration of the AARD including the revision of the rules and regulations of the agency.

The Secretariat is made up to five sections: Program Formulation; Cooperative Research Administration; Financial Administration; Personnel Administration; and General Administration.

The Program Formulation section coordinates the formulation of research activities, conducts monitoring and evaluation of research programs, and prepares reports on program and project implementation. The Cooperative Research section administers the collaborative and cooperative research activities with foreign and national institutions concerned with agricultural research and development. This foreign cooperation includes multilateral and bilateral donor organizations, universities, and national and international research systems. The Financial Administration section manages the financial accounts, monitors the expenditures, and evaluates the financial reports of all the units of the AARD. The Personnel Administration section carries out manpower planning, handles promotions, transfers, and retirement of the AARD staff. The General Administration section examines, analyzes and evaluates the work rules and procedures of all the units, provides guidance for maintenance of facilities and manages official correspondence.

D. AARD Mandates and Specific Research Activities By Subsector

During Repelita I and II, agricultural research gave more attention to wet rice, rubber and oil palm. Under Repelita III, increasing attention has been given to secondary food crops, upland rice, mixed-cropping patterns, intercropping of coconuts and rubber, forestry, livestock, fisheries,

processing of agricultural products and agro-economics. In addition, priority has been given to location-specific problems of different soil and climatic conditions, especially for food crops, instead of trying to develop varieties and practices suitable for all Indonesia.

Tables 2-6 in Appendix I illustrate the specific research activities and mandates for each Central Coordinating Research Institute and their respective Research Institutes, Research Stations and Experimental Farms.

1. Food Crops The main center of food crops research has long been the Central Research Institute for Food Crops (CRIFC) at Bogor. A new CRIFC station at Sukamandi, West Java, was originally intended to become the national center for rice and palawija crop research. Now, however, it, along with other CRIFC facilities at Sukarami (West Sumatera), Banjarmasin (South Kalimantan), Malang (E. Java), Maros (South Sulawesi), and Bogor, (West Java) are separate Research Institutes serving the national needs for food crop research.

The main focus has been breeding of locally-adapted varieties of high yielding rice, using local genetic materials, materials supplied by the International Rice Research Institute (IRRI) in the Philippines and other International and National Research Centers, with attention to earlier maturity and pest and disease resistance. Distribution of varieties resistant to brown plant-hopper has sharply curtailed crop losses. Research on upland rice, which has hitherto been meager, has been expanded sharply using germplasm material from IRRI and other sources for varietal improvement. In addition to rice, research is ongoing for corn, soybean, groundnut, mungbean, sweet potato, cassava, sorghum, wheat and barley. Development of improved varieties of secondary food crops is essential to meet Indonesia's food deficit; germplasm collections of these crops are being

widened. The materials have been assessed for incorporation into the cropping systems program. Research on pest and disease control and fertilizer usage are also important for increasing yields.

2. Horticulture. Research on fruits, and vegetables and ornamentals has been carried out by the Central Research Institute for Horticulture, but with much of the field work done out of Malang, East Java. The Lembang Horticulture Research Institute near Lembang, West Java, has been developed as the main center for highland vegetable research. Integrated pest management is one of the priorities. Superior strains of vegetables with resistance to pests and diseases, as well as other desirable traits, are being introduced from the Asian Vegetable Research and Development Center (AVRDC) for testing. Identification of promising selections of local fruits, and development of improved fruit propagation techniques will continue. Citrus rootstock trials are presently being carried out to identify rootstocks tolerant to the major virus diseases. A new Research Institute is being developed in Solok, West Sumatra for fruit crops.
  
3. Industrial/Estate Crops. The Research Institutes for Industrial/ Estate Crops at Medan for (BPPM) and Bogor (BPPB) concentrates on improving productivity of rubber, oil palm, coffee and cocoa through varietal improvement and better fertilizer and crop production practices. Under the World Bank NAR I project, a new Rubber Research Institute was built at Sungai Putih, North Sumatera, to absorb the rubber section of both these institutes. In addition, a branch of BPPB at Sembawa, South Sumatera was developed as a separate Rubber Research Institute catering to the needs of smallholders. It has been carrying out trials on intercropping rubber and on suitable planting densities and improved processing techniques for small-holders. BPPM has also concentrated on increasing oil palm productivity, while BPPB has been working on rubber processing technology and some aspects of research on rubber cultivation.

A BPPB branch at Jember has concentrated mainly on cocoa and coffee. A program to upgrade current local selections with high yielding Forsteros, Upper Amazon and Trinitario cocoa have been undertaken to boost yield without sacrificing quality. Integrated control measures have also been developed for the cocoa pod moth which is causing serious losses in Maluku and West Java. Coffee research has focused on increasing Robusta yields through varietal improvement and better cultural practices, including shade management, fertilization and plant protection. Tea and cinchona research are being expanded by a small institute at Gambung, West Java.

Research on Industrial Crops (perennial crops not grown on estates in Indonesia - coconuts, spices, tobacco, fiber crops and essential oils and medicinal plants) is carried out at Bogor, West Java (coconuts, cloves and essential oils), Tanjungkarang, Lampung (pepper and cloves), Mapanget, North Sulawesi (coconuts and cloves), and Malang, East Java (tobacco and fiber crops). Comparative trials have been carried out between local (Nias crossed with local tall) and exotic (Malaysian dwarfs crossed with West African tall) hybrid coconuts as part of a major national coconut development program. Further research on these new hybrids (fertilizer usage, pest and disease control, planting technique, etc.) is critical to the success of that program. The germplasm collection is enlarged with the introduction of promising tall and dwarfs. A program of hybridization, including selected local tall with pollen of exotic tall, is presently being carried out. Intercropping trials are to be undertaken in young coconut replant as well as mature areas. Tobacco, spices and fiber crops research emphasize pest and disease management, varietal improvement, cultural practices and processing.

4. Livestock. The Central Research Institute for Animal Science (CRIAS) works primarily on improving livestock productivity. During Repelita III, more attention has been given to small ruminants, increasing fertility rates and reducing early mortality among existing cattle and buffalo breeds, to raising milk yields, and to improving the performance and breeds of cattle, pigs, and chickens, all of which have low growth rates. It has also concentrated on the introduction of livestock into tree crop-based agriculture, improving pastures and making better use of various local food by-products as feed. These two Livestock Research Institutes under AARD have lacked facilities and experienced researchers.

The Research Institute for Animal Disease, Bogor, has been directed at developing integrated control programs for improved local or introduced breeds in the crop-based production systems. It is responsible for developing vaccines for control of animal diseases and serves as a national reference center for all economically important animal diseases in Indonesia (presently there are over 140 diseases classified).

The Center for Animal Research and Development (P3T) at Ciawi, near Bogor, was under the Directorate General of Livestock (DGLS) up until 1981, but is now a part of the Research Institute for Animal Production under the direction of AARD. This institute carries out production research with poultry, ducks, cattle, buffalo, sheep and goats.

5. Fisheries. The Research Institute for Marine Fisheries studies marine resources, fishing methods (craft and gear use), mariculture and socioeconomics. It has two field stations: at Semarang (Central Java) for demersal fisheries resource survey, and at Serang (West Java) for mariculture, including a small laboratory for marine biological studies and marine culture at Ancol (Jakarta). The Institute also carries out small-scale studies at its sub-station in Ambon, and has no facilities outside Jakarta. Studies cover fish processing, preservation,

use of by-products, packaging, and feed for prawn and fish culture. The Inland Fisheries Research Institute, Bogor, experiments on fresh and brackish water fish culture, shell-fish farming and fry production. It has a small field laboratory at Jatiluhur for work on man-made reservoirs and a freshwater prawn hatchery at Pasar Minggu, Jakarta with two sub-stations located in Maros and Gondol.

A 1983 reorganization of Fisheries research has established three Research Institutes: (1) The Research Institute for Coastal Agriculture at Maros, South Sulawesi; (2) The Research Institute of Inland Fisheries at Bogor, West Java; and (3) The Research Institute of Marine Fisheries at Jakarta.

6. Forestry. The Forest Research Institute (FRI) at Bogor nominally has three research stations. In addition, there are 14 experimental areas composed largely of species/provenance trial plots. Emphasis is on problem-oriented research on the ecology, production and regeneration of the natural forest, and on afforestation/reforestation of critical lands. FRI's research program under Repelita III includes botanical exploration, silviculture and forest management, choice of species and tree improvement for plantations and agrisilviculture, studies of the effect of forest type and management on soil, water and other environmental factors, forest protection, wildlife management, sericulture and apiculture.

The Forest Products Research Institute (FPRI) has concentrated on the identification of woods, characterization of species with respect to end use, wood processing and preservation, extraction, and forest economics. Future research and development activities would emphasize support to transmigration areas in settlement preparation, construction and development. Research would also be carried out on logging systems, waste control and use, rural energy production, and wood-based homes.

In 1983, a new Ministry of Forestry was formed which integrated FRI and FPRI into one Forestry Institute which no longer was assigned to AARD. The reason behind this integration was a need to better coordinate research activities, particularly in botanical/anatomical studies, forest inventory, control and management of natural forest, and deforestation/reforestation in transmigration areas.

**E. Funding of Agriculture Research and Donor Assistance**

The GOI has provided AARD with significant yearly budget increases since 1974/75. In 1982/83 the allocation for research (excluding bilateral assistance) is approximately Rp.29.2 million (US \$30 million), about 12 % of the Ministry of Agriculture budget.

Twelve countries and seven agencies, e.g., Ford Foundation, UNDP, IBRD, etc., in addition to the United States Government are assisting in the development of Indonesia's agricultural sector. These groups are involved in most sub-sectors of the agricultural sector including agro-business, area development, planning, cooperatives, research, education/training, extension, farm credit, farm mechanization, irrigation, fisheries, forestry, livestock, poultry, land/soil, plant protection, seeds and secondary crops.

## CHAPTER II

### PROJECT DESCRIPTION

#### A. Goal, Purpose and Objectives

The broad sector goal addressed by this project is "increased agricultural production of five commodity groups through the development of area specific crops tailored to fit precise farming conditions and in this manner attain the increases in agricultural production called for in the National Development Plan".

The project purpose is "to expand and improve agricultural research to address agro-climatic factors peculiar to Kalimantan, Sulawesi, Maluku, Bali, West Timor and West Java."

(Project Paper, pg 15)

The objectives of the project involve reaching end-of-project status conditions in which: "a) research is being performed at the Research Institute, Research Station and Experimental Farm sites in the designated geographic areas; b) research findings being published and disseminated by the extension services to the farmers; c) the staff having linkages to Indonesia higher education institutions; d) AARD maintaining close communications with International Research Centers; e) research strategies and priorities being set through consultation and coordination with provincial planning boards, extension services, universities, concerned GOI offices and agro-economic surveys of the farmers and people living in the rural areas." (Project Paper, pg 15)

B. The Project Paper predicts that in six years, when end-of-project status is reached "there will be a definite linkage between the purpose and goal as future research findings are adopted by the farmers and their increased food production, income and employment contribute toward the project (and GOI) goal." (Project Paper, pg 15)

B. Planned Outputs and Inputs

1. Outputs. The Project Paper cites the following expected outputs:

- "a) All physical facilities, equipment, vehicles, etc., completed or delivered for one Central Research Institute site, two Research Institute sites, ten Research Sub-station sites and three Experimental Farm sites.
  
- b) Number of BS degree level graduates increased by about 50 percent; number of agricultural high school graduates increased by about 30 percent; on-the-job training and short-term training provided. (Advanced degree holders 25 PhD and 80 MSc) trained under the IBRD loan and posted to duty stations.
  
- c) General staff upgrading by short-term observation training trips to such places as the Philippines, Malaysia, Thailand and Taiwan to learn how research is conducted in other Asian countries; attendance at regional conferences, and short-term training at International Research Centers. Research continues at the existing stations (Bogor, Maros, Handil Manarap, Bontobili, Lanrang, and Mariri) and begins at new station sites as their construction is completed and nucleus staff becomes available."

2. Inputs. Inputs from USAID are described as including a "\$6.5 million grant to finance technical assistance and a \$18.9 million loan to finance the foreign exchange costs of short term training, vehicles, equipment and commodities, and some local currency costs of construction." The GOI inputs include "\$17.5 million to finance a portion of the costs of construction of the physical facilities, training, etc. In addition, AARD will be contributing leadership and nucleus staff for the project, hiring additional staff for the project and staff for training, hiring additional personnel, and conducting on-going research. The provinces will provide land for the station sites, and land will not be included in total project costs."

C. Major Assumptions

Major assumptions made for obtaining stated outputs and inputs are listed as follows:

1. Output Assumptions: " a) adequate budget, b) provincial public works willing and capable to assist in design/construction of physical facilities, c) IBRD loan will successfully provide long-term academic training, and required number of trained staff posted to stations; d) adequate number English-speaking qualified students for graduate training abroad, and e) BSc and high school graduates available and provided by AARD."
  
2. Input Assumptions: " a) USAID's loan and grant are authorized at the figures recommended, b) the GOI provides adequate funds for AARD, c) the provinces provide all needed land, d) AARD is authorized to hire additional staff, and e) the Indonesian universities are willing to work with AARD."

D. Financial Plan

A summary of the Project Paper projected GOI and USAID expenditures by U.S. fiscal year is presented in Appendix II, Table 1. Anticipated outlays by both parties for each category of project elements are indicated, as are the amounts to be allocated for contingency ten percent (10%) and inflation thirty percent (30%) over the life of the project.

E. Planned Implementation Schedule

The Project Paper implementation schedule is based on an anticipated project life of six years from the date of authorization, which at the time of preparation was expected to be signed in July, 1980. The authorization was actually signed in September, 1980, and it was for a period of not six but five years. This development led to the preparation by USAID of a revised schedule presented as part of a Detailed Implementation Plan published in December, 1980. A copy of the overall time-phased summary data chart from this document is found in Appendix II, Table 2. It shows the general scheduled time frames anticipated for each of the project's component parts at that time.

F. Roles and Responsibilities

It is clear from the Project Paper and from the subsequent Loan and Grant Agreements that from the outset the project was planned as an integral part of a much larger agricultural research development program being mounted by AARD. The project is intended to augment the capacity of that agency to conduct needed research and transfer technology to farmers by expanding and improving its facilities and staff in the eastern part of the country. (See Appendix II, Figure 1 for a map showing the location of project research sites.) AARD, assisted by funding support from USAID and at least nineteen other donors, plays a crucial role in Indonesia's agricultural development program. The scope of its responsibilities is illustrated in the organization chart of the agency (see Appendix II, Figure 2), which shows the large number of research institutions involved and the diversity of the priorities and activities addressed. The major programs of AARD at the time of project formulation were Food Crops, Estate and Industrial Crops, Livestock, Fisheries, and Forestry. In addition, support Centers for Soil Research, Agro-economic Research, Statistics and Data Processing, Agricultural Quarantine, Central Library Services, programming and monitoring were operating within the structure of the Agency. At that time, Horticulture, now a separate institute, was part of the Food Crops establishment.

The program is a large, complex and dynamic one. Its many parts are organized and governed under the provisions of a five year National Agricultural Research Program (NARP), a document which is reviewed and revised annually by a National Research Board chaired by the Minister for Agriculture and comprised of the Head of AARD and the Directors General of the Ministry's major research and extension organizations. The NARP is incorporated as an integral part of the Repelita, Indonesia's Five Year Economic Development Program.

G. Factors Affecting the Project Plan

The sections above are intended to illustrate, in broad terms, the general nature and scope of the AARD program and the place within it of the Applied Agricultural Research Project (AARP) as it was conceived at the time of the project's formulation. This section reports briefly on important changes which have occurred during the first three years of the project's life and which have had cogent affect upon its structure, organizational arrangements, scope and planning. Two general categories of change have been involved - those originating from external factors and those rising from the internal dynamism of the agricultural program itself.

1. External Factors. The continuing world economic recession has taken a heavy toll on the project and its ability to reach the full set of objectives planned for it. Prices for many of Indonesia's export commodities are depressed, and foreign exchange earnings are well below levels projected when the project plans were prepared. The effect on the country's economy is severe, and this has led to several steps taken by the GOI to adjust to the changed circumstances. Government budgets have generally been held static or even curtailed substantially, both through austerity programming and downward budgetary revisions, and because of an April, 1983, devaluation of the Rupiah of thirty-two percent (32%) measured against the U.S. dollar. As a result of these developments, GOI budgetary resources flowing into AARP have been seriously affected and as of this date account for only 79 percent of the commitments made for this period in the Loan and Grant Agreements. To ameliorate one of the effects of GOI budgetary restrictions, USAID added \$500,000 to the Project Grant in 1983 to allow for the funding of international conference attendance by Indonesian scientists for purposes of collaborative research.

Another external factor is the recent decision of the GOI creating a new Ministry of Forestry, an action which was formally accomplished in June 1983. Forestry has been a major element in the AARD program and its excision from the Ministry

of Agriculture and insertion into a separate, new governmental structure have major implications for AARP. AARD is currently considering how to adjust to this important structural change and struggling with the policy and program implications which rise from it.

2. Internal Factors. Many changes have occurred during the past three years within the organizational and policy framework of AARD. Some of these changes have direct bearing on the purposes and functions of AARP within the overall research program. Most salient among them are newly emerging program mandates and the new organizational relationships being established for AARD's several institutional units. Among other things, the new mandates assign national program responsibilities to Research Centers which have until now functioned primarily as Regional Centers with specific responsibility for regional problems and programs as described in the Project Paper. In some cases these new mandates have caused substantive modifications to be made not only in the geographic program focus and priorities of Research Institutes, research stations and experimental farms, but also in the commodities with which they are in future to be associated and on which their programs are to concentrate. Structural linkages have also been affected, programmatic planning and oversight responsibility for some existing and planned sub-stations and Experimental Farms being shifted from one institute to another.

### CHAPTER III

#### PROJECT PROGRESS TO DATE

##### A. Introduction

Chapters one and two have presented a brief summary overview of the project and the larger country and program context in which it operates. Chapter two also described certain internal and external developments which are having significant effects on the project's goal and objectives, organizational arrangements and procedures, and on what it can accomplish. This chapter looks at how the project has evolved over its first three years and what it has accomplished. It reviews the several main stages of project planning and implementation and describes briefly what has happened in each of the four primary organizational components and what in each component is the current status. These largely descriptive analyses lead to statements of key problems faced by each of the project's main elements and then goes on to the conclusions and recommendations of the Evaluation Team. Later chapters will tie these conclusions and recommendations into a broader framework of issues and problems impinging on the project as a whole, and through that process, attempt to put together a rationale and program for the resolution of identified issues and the correction or amelioration of deficiencies encountered in this review.

At the outset a general, indicative point should be noted. As of September 30, 1983, only 10.72 percent of USAID loan funds and 34.71 percent of USAID grant funds had been expended.

##### B. Organization and Planning

After a fast start, the progression of processes and events leading to the activation of the project moved at an excessively slow pace. The Loan and Grant Agreements were signed in September and December, 1980, respectively, and the Detailed Implementation Plan was published in December of the same year. The first GOI budgetary

allocations for the project however did not occur until April, 1981, and the technical assistance contract was not signed until almost a year later, in March, 1982. Getting a new project organized and moving is usually a slow process in developing countries, for there are many things to be done, people to be found and put into place, budgets to be finalized and requested, etc. The normal complications of gearing up were exacerbated in this case, however, by deficiencies in the base from which operational decisions flowed - i.e. the Project Paper. In the Evaluation Team's judgement, the AARP Project Paper is a loosely put together document incorporating an incomplete design based on somewhat weak and impressionistic analyses. It does not provide a complete and sufficient conceptual framework for project implementers to use in accurately detailing out and following through in the step-by-step building of a sound Action Plan.

Another contributing factor to the long delay in moving the project forward is the fact that AARD was then, and still is, a young, complex, multi-faceted organization working under severe resource constraints to put together and effectively operate a large research system capable of responding positively to the expectations placed upon it. While in and of itself, AARP appears to be a large and complicated endeavor, when compared in scope and size with the much larger program of which it is part, a truer perspective emerges, and one can see why the project took a long time to organize and plan for action. There were a great many bases to be touched along the way and a heavy agenda of preparatory work to be accomplished. In addition, other projects were competing for the limited number of experienced personnel and increasingly scarce rupiah resources available.

The above discussion is intended neither to assign blame nor to justify the initial delays experienced. Rather, the intention is to offer some historical perspective which will help to explain the exposition of the following sections of this chapter, which deal with the progress of the project's major operational components and outline the key problems perceived by the Evaluation Team. Such a perspective is necessary to understand the conclusions reached by the

Evaluation Team and the recommendations it makes with respect to possible mid-course modifications. A major theme running throughout the ensuing sections is the shortage of time left to get the project's job done before the PACD.

C. The Technical Assistance Component

1. Nature and Scope of Planned Technical Assistance. The Project Paper calls for some fifty-two person years of long-term specialist services and twenty-four person months of supplemental short-term consultancy services. (See Appendix III, Table 1 for information on the specific areas of expertise projected.) In all, twenty-three long-term expert positions were planned. Twenty of these experts were to be assigned to five Research Institutes and were to be charged with a variety of research, training and project support functions as they worked with Indonesian counterparts in carrying forward the programs of these institutes. The other three experts - a Team Leader, an Administrative Specialist and an Experiment Station Development Specialist - were to be based at headquarters (Bogor) and service project needs across a wider spectrum of activity. It was expected that the technical assistance team would serve as a major resource for the support and guidance of the leadership and staff of AARD in matters of concern to project purposes and functions.

2. Technical Assistance Contract. A host country contract for the provision of technical assistance services was signed by the GOI and Resource Management International (RMI) in March, 1982. RMI is a privately owned consulting firm based in Jakarta and engaged in a large volume of business with the GOI, various donor organizations and a number of private sector ventures, most of which are associated with the oil industry. In addition to the provision of long-term and short-term technical assistance specialists, the contract requires RMI to administer the overseas training component and perform a series of detailed functions in regard to construction, equipment procurement and other aspects of the project. The contract carries both a fixed fee and a negotiated overhead rate of 89.2 percent of specified costs. These two items total \$2,254,695 in amount. Other

provisions of the document detail requirements for RMI's role in the preparation of a Project Masterplan, Annual Work Plans, and the submission of progress reports.

3. Technical Assistance Experts. To date, the Contractor has supplied fourteen long-term experts, five of them starting work during 1982 and nine in 1983. One expert resigned after two months, so there are currently thirteen in place. A replacement for the resignee is scheduled to begin work on January 1, 1984. Three more experts have been identified and are scheduled to arrive in April 1984, but for reasons which are explained in a later chapter of this report, these slots may not be filled. On the short-term consultancy side, four of the planned twenty-four person months have been expended. (See Appendix III, Table 2 for details.)

The Evaluation Team met most of the long-term experts in the course of its travels and found them, individually and as group, to be knowledgeable and apparently effective in their work. This impression was backed up by responses to questions posed to counterpart project staff at several levels. Many of the experts have prior Indonesian work experience, and all we talked to seemed well-adjusted and happy in their challenging work. The scope of their ability to communicate in Bahasa Indonesia was generally impressive. Some technical assistance team members expressed concern about the level of support they receive from RMI.

4. Summary of Current Status. Although the technical assistance team appears to be performing effectively in many functional areas of its responsibility and is doing a creditable job of reporting on its activities, the Evaluation Team has found that certain contract functions are not being carried out, while still other responsibilities have been inadequately or incompletely met. These and other areas of concern are discussed in Section 5 below.

Delays in the construction and equipment procurement programs caused by factors discussed in later parts of this chapter, and uncertainties caused by the AARP policy and organizational changes that have occurred or are in process, have curtailed the contractor's ability to move forward on long-term personnel assignments. This circumstance applies also to the assignment of short-term consultants, though perhaps with lesser inhibiting force. These reasons notwithstanding, the technical assistance component is currently far behind in its planned schedule of personnel assignments as set out in the initial Detailed Plan and, consequently, somewhat off the pace in accomplishing many of the important roles expected of it in the pursuit of project objectives.

5. Key Problems

- a. With less than two years remaining before the scheduled PACD, the question of placing additional long-term experts raises issues of feasibility and effectiveness.
- b. Given its large overhead and fixed fee charges, RMI is providing inadequate support of its technical assistance team members in some respects.
- c. RMI is not living up to its contractual obligations for assisting AARD in the development of a Project Master Plan; nor has it prepared required Annual Work Plans covering the full range of its activity within the project.
- d. RMI has not been as vigorous as would be desirable in respect to following through on some of the manifold tasks associated with the broad intents and purposes of the contract, although the technical assistance team assembled by its Chief of Party has done a fine job.
- e. USAID has been less active than it should be in working with AARD and RMI to help insure that the broad purposes of the contract are served effectively. Monitoring of contract requirements and fuller follow up of problems should be pursued vigorously by USAID.

6. Conclusions and Recommendations.

The Evaluation Team is concerned that the project is currently operating with little more than half of the technical assistance expertise thought necessary by the Project Paper for its successful accomplishment. The Evaluation Team has studied the circumstances whereby this situation has come about, and appreciates the limits placed on what can be done by the uncertainties caused by shifting mandates of AARD research units, changing organizational linkages and other factors affecting the system and its several institutional parts. Also recognised by the Evaluation Team is the importance of this project review to the decisions which must be made very soon about the scope and organization of the project, the direction it is taking and the role in all of this that is played by each component.

With respect to the assignment of additional long-term and short-term consultants, it is clear that forward movement must await decisions made on the recommendations of this review. These decisions should be made and implemented at an early date if they are to be effective or even workable in the short time remaining.

Recommendation # III.1: Plans to bring in technical assistance experts for Forestry should be dropped and plans for Animal Husbandry should be reconsidered, as these two areas still lack the physical and organizational ability to absorb and utilize these services without major adjustment to project plans.

Recommendation # III.2: The project's plans for use of the remaining experts should be carefully reviewed and decisions made very soon as to which areas should be retained, which dropped and which modified. In this process, consideration should be given to AARD needs not explicitly dealt with in the Project Paper.

Among the needs identified in the course of this review are: (1) expertise to help expand the scope and improve the process and content of the in-country training component; (2) expertise to help improve the quality of construction and speed up the processes of planning and administration which add so heavily, and uselessly, to

the project's burden; (3) expertise to help AARD in the difficult tasks of translating its new mandates into action plans which clarify ambiguities, assign roles and define relationships with necessary degrees of specificity and tie each of its component programs into the broad conceptual framework; (4) expertise to help improve the functional capacity of the AARP Project Implementation Unit (PIU) to plan and follow through on the manifold tasks associated with its roles and responsibilities. The Evaluation Team feels strongly that these kinds of expertise, which it believes can readily be applied through the technical assistance contract, would be important contributors to the revitalization of the project as an effective instrument in AARD's stewardship of the Indonesian agricultural research program. Both long-term and short-term technical assistance experts could effectively be used for these purposes.

Recommendation # III.3: AARD and USAID, with help from RMI, should place consideration of the above suggestions high on the agenda of matters to be resolved in the coming days. Once decisions are reached, they should be implemented quickly in view of the PACD time frame and the large volume of work to be done.

Recommendation # III.4: The terms of currently assigned technical assistance experts whose performance is acceptable to AARD should be extended until the PACD, and their contract Terms of Reference amended (if necessary) to permit some or all of them to spend more time on the training aspects of the program.

Recommendation # III.5: The AARD should set up a system to select long-term and short-term consultants, and evaluate their performance in accordance with the needs of AARD.

Recommendation # III.6: In its grantor capacity, USAID should monitor RMI's performance of contractual obligations more closely and, with AARD's agreement, recommend steps through which work planning and documentation can be improved.

Recommendation # III.7: AARD and USAID should review the systems through which they monitor project progress and take whatever steps may be necessary to improve these processes. One recommended step is the providing of additional personnel support by the USAID Mission to help the Project Officer fulfill his very comprehensive and heavy load of responsibility, which currently includes the Sumatra Agricultural Research Project and a Centrally-Funded CRSP on Tropical Soils in addition to AARP.

The Evaluation Team notes that key people of the PIU and other staff attached to or associated with AARP meet weekly. It also notes that full review meetings have been held twice. The Evaluation Team emphasizes the importance of AARD establishing a specific schedule for various types of meetings. In addition to the regular weekly meetings, the Evaluation Team recommends monthly meetings to address any policy issues needing action. Also important are quarterly or semi-annual meetings to formally review the status of the project, provide the basis for correction and develop a plan for future work.

D. The Construction Component

1. Nature and Scope of Planned Construction. The Project Paper calls for the construction of approximately four hundred buildings and other structures of different kinds at research sites in nineteen locations (see Appendix III, Table 3). The items range from large laboratory and office buildings to simple storage sheds and screen houses. Costs of construction were estimated at \$13,434,000, and to this figure were added contingency and inflation allocations totaling forty percent (40%) of the estimate. The Project Loan Agreement stipulates that a cost sharing arrangement will apply, with the GOI to pay 56.58 percent and the USAID loan to pay 43.42 percent of actual construction costs, exclusive of costs associated with land acquisition and farm development, which are to be paid by the GOI. USAID's payments for construction are to be made by a Fixed Amount Reimbursement (FAR) system after construction of individual structures or structural complexes has been completed, inspected and approved by the GOI and USAID. A pre-financing arrangement with the Bank of Indonesia permits AARD to allocate and receive construction funds up to the amount approved for USAID reimbursement. The overall scope of the program has been somewhat

modified by various changes forced by decisions regarding site selection, alternative financing methods (for one station) and shifts in institutional mandates. The net results of decisions made to date are shown in Appendix III, Table 4. The following discussion of construction scheduling, the building program and other relevant factors, takes the current picture into account.

2. Construction Schedule. The construction program was designed to take place in several stages, with annual budgetary allocations keyed to a time-phased schedule. The components to be included in each phase were identified by the application of several criteria, including urgency of need and status of land ownership and certification. The definition of phasing was kept flexible enough to allow for changes, foreseen or unforeseen, in the size of budget allocations. The overall plan included time allocations to accommodate the several stages of land acquisition (where necessary), approvals, tendering and contracting A and E design work, tendering and contracting actual construction work, etc. Initial scheduling called for completion of all construction well in advance of the PACD.

3. Summary of Current Status. To date, fifteen structures (all at Bogor) have been constructed, and three more are under construction. The fifteen completed structures have been approved and turned over to AARD for use. Documentation is now being developed and processed by AARD to request FAR from USAID. Additional progress made is discussed as follows:

a) GOI budget status. In GOI budgets for fiscal years 1981/82, 1982/83, and 1983/84, the total allocation for construction was the Rupiah equivalent of \$2,759,305 (\$1 = Rp.970). In addition, \$1,839,714 of USAID loan funds were made available through Bank of Indonesia pre-financing. Thus, the grand total available for construction through March 31, 1984, is \$4,599,019. Of this amount, \$2,525,152 has been committed to date, leaving an uncommitted balance of \$2,073,867. Of the committed funds, only \$638,274, or 25 percent, have been expended. AARD has asked USAID to agree to a 35/65 GOI-USAID cost sharing split, either retroactively to the 1981/82

fiscal year onward, or for only the 1984/85 and 1985/86 fiscal years. What each of the five alternatives included in this request would mean is shown in Appendix III, Table 5. USAID is awaiting the recommendations of this evaluation before making a decision.

b) Status of land acquisition and certification. As of this month, land ownership certification has been obtained for seven building sites. Eleven sites are in the certification process, and in only two of these eleven sites are any problems anticipated. A number of the sites involved have been owned and operated by the government (or AARD) for a number of years and, in such cases, USAID has agreed to accept a letter from AARD certifying ownership and waive the official land certificate requirement. Although the process of obtaining land certificates has been slow, it is almost complete and expected to cause no further problems beyond those inherent in land acquisition.

c) Design status. A master contract for Architectural and Design work was signed in 1980. Contracts for each of the three regions were signed in September 1983. The A and E firms are at work, one per region. Designs have been completed and approved for nine structures in three locations, while design work is in process for an additional two structures. This aspect of the construction program has been frustrating to the designers, who have had to deal with many last-minute user-suggested modifications, to the project and to USAID personnel, who have had upon review to return for correction many designs due to weaknesses and mistakes rising from uncertainty and mis-communications, etc.

d) Tendering and contracting status. Tendering of actual construction contracts for this project tends to take a fairly long time, due to complexity of the construction and to a certain extent, lack of understanding of the proper procedures. The process is nevertheless well-advanced and anticipated to be no problem in Region I, where only Phases Two and Three of Bogor Institute construction and some work in W. Kalimantan is yet to be undertaken.

The situation in Regions II and III, however, is less reassuring, for in only two of the eighteen sites has the tender process even begun.

e) Construction status. As indicated in the introduction to this section, the only completed structures in the program are in Bogor, site of the Central Research Institute for Food Crops. These structures number fifteen, and consist of assorted medium-sized buildings, a drying floor and several green houses. The three Bogor buildings currently under construction include one large structure, an auditorium. The auditorium should have been completed earlier, but the correction of structural flaws in finished work has required additional time to complete.

f) Status of GOI and USAID Approvals. The GOI and USAID have approved the completed buildings in Bogor having a combined value of \$395,364. These units will be turned over to AARD very soon. There are no problems anticipated in securing approval for the three structures now nearing completion, valued at \$415,460.

g) USAID reimbursement status. As indicated above, USAID is using the FAR system for disbursement. All fifteen buildings now completed are being processed by the GOI for reimbursement by USAID.

h) Status of farm development. Farm development in the construction program consists of land development, roads, walkways, field sites, landscaping and other minor civil works. This is to be entirely funded by the GOI as part of its contribution to the project. To date, only a small portion of this work has been started. This includes fences for Bogor and Banjarbaru. A total of some \$2,000,000 is still to be expended on farm development, and plans call for the necessary funding to be incorporated in the FY 1984/85 and 1985/86 GOI budgets. The Evaluation Team noted that while the Project Paper implies that all land needed for the sites was already owned by the government, in actual fact AARD has had to spend considerable time and money to secure land.

4. Key Problems. The most significant of the numerous construction program problems identified by the Evaluation Team are:

a) Approval and clearance pre-requisites to beginning actual construction generally take an exceedingly long time to obtain, and unless skill, tact and persistence are used in moving items through the process, there is danger that the long process will take even longer.

b). The AARP has no full-time specialized trouble-shooting staff whose skills could be used to expedite the clearance/ approval process.

c) The AARP has no full-time architectural or engineering specialists whose skills could be used to facilitate communications between designers/planners and users and also serve to supervise or oversee the design and construction efforts.

d) Initially there had been insufficient contact and communication between USAID engineering staff and the project's contract designers at early stages of A and E work; and there has not been enough done to minimize errors or weaknesses in designs and reduce the possibility for misunderstandings to arise at the final point of USAID approval. However, since July 1983, all key parties involved in this activity have been meeting regularly and problems encountered earlier have been minimized.

e) Securing FY 1984/85 and FY 1985/86 budget allocations for construction is likely to be made difficult by the low rates of expenditure of funds already made available by the government through the FY 1981/82, FY 1982/83 and FY 1983/84 budgets. The very substantial amounts from those allocations which still lie unexpended or even uncommitted may cause future budget allocations to be reduced.

f) The September 30, 1985, PACD looms large on the horizon, and the likelihood of completing the full construction program becomes smaller with each passing day.

5. Conclusions and Recommendations.

a) Conclusions. The Evaluation Team has concluded that the chances of successfully completing the planned construction program are so remote that there is no alternative but to scale it down to more manageable proportions. Fortunately or unfortunately, depending on one's viewpoint, some reduction in the number of research sites and building structures is being recommended by the Evaluation Team for reasons that have nothing to do with the construction problem perse. The recommendation referred to is found in Chapter V. It urges the removal from AARP of all planned Forestry assistance. In addition to reducing the pressure on the construction program's physical aspects, if accepted, this recommendation would free up approximately \$1,917,373 in GOI and USAID loan construction funds for possible assignment to other construction sites.

In considering possible further reductions in the building plan to ease the stress of time, the Evaluation Team has tried hard to be both objective and sensitive to project purposes and the needs of the various Research Institutes. Its deliberations have been centered on the use of criteria involving not only the factors mentioned above but also the stage of readiness of the sites, their importance to the AARD research system, and the availability or potential availability of staff, including technical assistance contract specialists. The Evaluation Team has also looked at specially prepared revised construction schedules for sites in all Regions and, in general, has considered as many alternative options as possible in the limited time available to it. (See Appendix III, Table 6.)

Three kinds of cut-backs seem possible. On the one hand, whole sites could be eliminated, while on the other, selected less essential structures could be deleted. A third possibility, of course, would be a combination of both of these kinds of options.

b) Recomendations.

Recommendation # III.8: AARD and USAID should consider reducing the number of sites included in the construction plan. In any decisions reached, criteria of land status, personnel availability, availability of funds, estimated schedule and duration of construction phase, should be used to supplement decision criteria related to the importance of affected sites to the AARD system.

Recommendation # III.9: AARD and USAID representatives should meet as soon as possible, with assistance from the technical assistance personnel, to review the number and kinds of structures proposed for all of the research sites with a view to eliminating from the construction program a significant number of the structures deemed to be of least critical value to the achievement of project purposes.. Special consideration should be given to reducing the projected schedule load of Banjarbaru Phase II, Banjarbaru Phase III, Handil Manarap, and Banjarbaru IV (Animal Disease) in Region II, and Maros Phase II and Kupang-Oesao in Region III, where the revised scheduling estimates indicate the possibility of serious time constraints near the end of the project's life.

Recommendation # III. 10: AARD and USAID should consider possible alternative uses for any savings in construction money made possible through cut-back decisions. Consideration should be given to the possibility of utilizing funds to ease staff housing needs at research sites where lack of residential facilities is a serious constraint to research effectiveness.

Recommendation # III.11: Using grant funds available under its contract, AARP may wish to hire locally an expert engineering or architectural professional to assist in the oversight of design and construction contractors and to serve as a prime vehicle for expediting the administrative processes necessary to obtain construction approvals. This expert is in addition to the available AARD expert already experienced in construction (NAR II) who can assist the AARP.

Recommendation # III.12: AARD and USAID should make every possible effort to speed up the construction program without damaging either the integrity of the project's purposes or the quality of the construction involved. These efforts should include increased field visitation monitoring and reporting by USAID engineering and project staff members.

E. The Procurement Component.

1. Nature and Scope of Planned Procurement. The Project Paper calls for the procurement of approximately \$5.5 million worth of equipment and materials for use by AARD in the research programs of sites being developed or expanded under AARP support. The equipment to be supplied, indicative listings of which are included in project documentation, ranges in type across four broad categories:

(a) field and station support equipment for the research farms, (b) scientific equipment for the research laboratories, (c) miscellaneous equipment for data processing and information dissemination, including library equipment, and (d) vehicles. These equipment items range in complexity from highly sophisticated computers and photo-spectrometers to simple things like shovels and glass slides. The largest category in dollar value is field equipment, which includes a variety of machinery such as tractors, generators, mechanical threshers and seed cleaners.

2. Procurement Plan and Schedule. The procurement plan calls for an intensive process of identifying equipment needs in consultation with the scientists and other end-users for whom it is to be supplied. This process is to be carried out by expert staff provided through the RMI technical assistance contract, and is expected to be sufficiently rigorous to insure that all equipment is selected according to reasonable criteria of need, durability, functional and climatic appropriateness, and appropriateness to the organizational structures in which it is to be used. Procurement of vehicles, in the amount of 109 utility types (jeeps, trucks and buses), is separated from the general procurement plan and handled discretely through USAID.

The plan entails use of procurement procedures in form and substance satisfactory to USAID regulations. It includes a comprehensive, time-phased schedule tied to the needs of the project and prioritized in such a way as to generally fit the timing requirements and readiness of other phases of project activities, e.g. in terms of the building construction and training schedules. Several large, packaged orders are to be made, with the final order to be secured in time for delivery, installation, testing and utilization training to be accomplished in advance of the PACD.

3. Summary of Current Status. The plan calls for all international and in-country purchasing to be done through a Procurement Services Agent (PSA). AARP tendered widely for PSA proposals and has accomplished all necessary procedural steps up to and including the negotiation of a draft contract with the selected firm, Connell Brothers Company, a San Francisco based PSA registered with and approved by USAID. The contract was ready for signature in September 1983, but still has not been signed by the GOI.

Thus, the project faces a difficult dilemma. As of this date, no procurement under the plan has been made, and the placing of the first large orders, valued at over \$3 million, awaits the result of negotiations between the GOI and USAID to find a solution which will allow procurement to begin.

On a brighter note, the project has procured a total of 71 vehicles under the loan, and two more through GOI resources. The overall target of 109 vehicles may still not be achieved, however, due to recent austerity measures put in force by the GOI.

#### 4. Key Problems

a) Unless the GOI and USAID can resolve the procurement issue, and resolve it very quickly, the whole process will be delayed to an extent that will have serious implications for project viability. At issue will be questions not only of project feasibility, in its whole dimensions or in parts, but also of the continued appropriateness of the project to the growth and development of Indonesia's agricultural

research system. The assumptions underlying the project would be fundamentally altered, and this would raise basic issues of a scale forcing perhaps even a hard choice on whether or not to terminate the endeavor and cut losses.

b) AARP staffing available to expedite the several processes involved in procurement is on the thin side, and the technical assistance specialist assigned to work on this component is already heavily loaded with responsibilities in the construction component.

c) USAID approvals of equipment proposed for procurement tend to be processed at a late date and without sufficient prior communication with the project to minimize problems in understanding regulations and processing documentation correctly.

5. Conclusions and Recommendations. The Evaluation Team understands that USAID, working with the PSA concerned and in consultation with the GOI, is attempting to resolve the procurement issue.

Recommendation # III.13 : The USAID Mission Director and the Director General of AARD should take immediate steps to resolve the current procurement impasse through discussions with appropriate GOI officials. If the impasse cannot be resolved at an early date, and if no feasible alternative solutions to the procurement problem can be found, then the GOI and USAID should reconsider the project's purposes and viability and reach a decision on whether to continue or abrogate the Project Agreement. The Evaluation Team was questioned whether or not an arrangement could be made with the World Bank Nar-II project, by procuring equipment through its existing channels in exchange for a price equivalent service from AARP. The Evaluation Team recommends this be explored.

Recommendation # III.14: If a satisfactory solution to the current impasse is reached through USAID-GOI negotiation, then the project should commence procurement forthwith and at an accelerated pace in order to insure delivery of equipment in time to allow the completion of proper installation, testing and utilization training before the PACD.

The delays in beginning procurement, and the further delays caused by the current problem in securing GOI approval of the plan and PSA contract, have made for significant increases in the need for thoroughness and efficiency in the procurement operation during the final two years of the project. Even if the process is restarted soon and expedited with despatch, the delays which have already occurred have undoubtedly done some damage to the project plan for coordinating of component activities. This is particularly true for those research units already in operation and where the equipment could be put to immediate use. For new units, the damage is not as great as might be thought to be because of two factors: (a) the procurement schedule is really not too far behind its intended timing, and (b) the construction components of the project are also running behind schedule. With time availabilities dwindling, however, the need for close articulation between system elements is even greater than before, and making the various pieces fit together as intended will be a considerable challenge.

Recommendation # III.15: To the fullest extent possible, the schedule for procurement should be revised to insure the closest possible synchronization between equipment arrival at site and the readiness of facilities and personnel to accept and utilize equipment effectively. Lengthy periods of storage should be avoided, as should delays in delivery to sites which are ready at the time to receive and use the equipment.

Recommendation # III.16: The project should expedite all phases of the procedure, and should also assign specific responsibilities to designated officers and consultants for tasks needed to improve scheduling efficiency and follow through. At least one project staff

member should be assigned to these functions on a full-time basis. The project should give high priority to highlighting the procurement issues in the revised Implementation Plan. This should include all the key steps from identification of equipment to its delivery.

F. The Short-Term Training Component.

1. Nature and Scope of Planned Training. The Project Paper calls for an allocation of \$1.831 million for short-term training, and lays out a target of 559 person months of USAID-financed overseas training. Local currency costs of overseas training are to be borne by the GOI, which is also given responsibility for in-country short-term training to be conducted under the project. In organizing in-country training, AARD is expected to cooperate with the GOI Agency for Agricultural Education, Training and Extension (AAETE), through which all government in-service training in agriculture is normally funded and conducted. The project does not include any long term or academic training, as this important need is being met through the NAR-II Project. The kinds of overseas training contemplated in AARP range across a wide field of subject matters useful to the attainment of project objectives. Planned training vehicles include international conferences, observation tours, visits to neighboring countries, U.S. institutions and International Research Centers as well as more formal kinds of short-courses, workshops and seminars.

Responsibility for administering the overseas part of the training program on behalf of AARD is assigned to RMI under the technical assistance contract.

2. Summary of Current Status. To date, approximately one hundred seventeen person months of overseas training, involving some seventy participants, have been completed. Plans are in hand for an additional two hundred ninety-four person months. Perusal of summary reports on completed and planned training reveals that the training opportunities being provided are generally appropriate to project needs. (See Appendix III, Table 7). The pace of the overseas

program seems to be slowing down, however. The explanation given the Evaluation Team for this phenomenon has to do primarily with USAID English language proficiency requirements and the fact that the overseas training programs of USAID and other donor assisted projects are drawing down the number of available candidates who are qualified to pass pre-requisite language tests. In the AARP case alone, of the 123 training candidates who took the USAID required ALIGU test in 1982, 94 were disqualified for participation in overseas opportunities. The respective figures for 1983 are 142 and 92.

The progress of the planned in-country training program has not been as good. It was perceived by AARD personnel early in the implementation phase that the facilities and staff of AAETE are somewhat limited when it comes to the organization and conduct of the kinds of training needed by AARD scientists and technicians, and there developed in the project a disinterest in taking advantage of this training channel. Consequently, the project has used neither AARP facilities nor the budgetary resources that can accompany their use. It appears that only recently has there grown in the project, partly as the result of Evaluation Team discussions with concerned staff, a consciousness of the good potential for cooperative work with AAETE. That agency seems to be quite flexible and accommodating, and apparently can work within arrangements which allow its client agencies to stipulate both content and curriculum and even utilize their own or nominated training staff, provided its general training mandate's requirements are observed.

3. Key Problems. The Evaluation Team noted a number of problems in the training component, chief among them being the following:

- a. Many candidates identified for training abroad are disqualified from going by failure to pass the ALIGU test required by USAID.
- b. The training facilities and budgetary resources available from AAETE are being used by AARD for general training. These facilities are not appropriate for training in highly specialized research techniques.

- c. The project has not found adequate ways to fully address the in-service training needs of research site staff who are unable to qualify for overseas short-term opportunities.
- d. While AARD is doing its best to improve its manpower capability, through training, difficulties in passing the English language tests is becoming an increasing problem. As a result, AARP and NAR-II are drawing candidates from a progressively shrinking pool for their training efforts.

4. Conclusions and Recommendations. With regard to the English language qualification problem, the Evaluation Team perceives three general possibilities for its amelioration. First, USAID's rather stringent standards for pre-qualifications might be reduced or, alternatively, the test it uses to measure English competency be modified. Currently, that test is ALIGU, which some observers believe is not entirely reliable as a measure for ascertaining an individual's ability to handle English-based learning in his or her own technical field. It has been suggested that other tests might be better indicators of technical comprehension and communication skills, and that the factor employed in the ALIGU test are overly weighted in favor of language skills more suited to less relevant aspects of learning.

A second possible way to ease the problem would be by increasing the amount of resources applied by the project to pre-qualification English language preparation of selected candidates. Two kinds of costs would be involved in this alternative: the monetary costs of providing such additional training arrangements, and the costs associated with the drawing away of employees from their regular functions. The Evaluation Team noted AARD was coordinating English language training through NAR-II which was sponsoring formal courses. This may be an avenue for the AARP to explore as a possible solution to the current difficulty the project is facing to qualify participants for short-term training overseas.

A third possible easing of the problem might be achieved through modifying the overall short-term training program so that fewer than planned numbers of trainees are sent abroad and training accomplished in-country, where the language problem does not necessarily arise. Given the GOI regulations discussed above, there may be limits to what could be done under this alternative, but good prospects apparently do exist provided that arrangements can be made to fund such in-country training in a manner compatible with GOI expectations, perhaps through an expansion of the scope of the technical assistance contract. Loan funding of in-country training might also be possible.

The Evaluation Team feels that some combination of alternatives two and three above offers the best opportunity for solution to this general problem.

Recommendation # III.17: AARD and USAID should look into the operational problems associated with English language proficiency requirements, and actively seek ways to minimize obstacles confronting the training program and maximize the very substantial benefits which can accrue to the project and to the quality of agricultural research generally through effective training.

Because the project has not drawn on AAETE for in-country training, and because there has been some questions about the appropriateness of AARP arranging to conduct its own in-country training when budgetary resources for agricultural training tend under GOI policy stipulations to flow only to AAETE, some important in-service training needs of AARD have been neglected. Three general types of training are involved. First, is the need for what might be called "re-entry" training for personnel who have returned from long-term studies abroad. These people need help in adjusting themselves to an organization greatly changed since they left. Training assistance in helping them understand AARD's structure, functions, priorities and relationships, to say nothing of the new mandates of the several Research Institutes, would be useful both to the scholars and to the organization. Second, is the need for

returnees (both long and short termers) to "practice" their newly learned skills in research methodology, problem definition, scientific and laboratory equipment use, etc. A small investment here might pay good dividends, too. (See Chapter IV on AARD/AARP Linkage - Work Staff). Third, the counterparts of returnees, technicians and others with whom they are to work, will need assistance in learning how to operate new specialized machinery and equipment, and use new research methodologies, if the new relationships are to be fully effective. While returned participants should certainly be expected to share what they have learned with their co-workers, reliance on this cannot be total and efforts should be made to help technicians, statisticians, mechanics, laborers and other kinds of workers become more productive as they work in a changed environment.

Thoughtful attention to these kinds of training needs and the organization of arrangements to service them, could add considerably to the capability of the agricultural institutions supported by AARP.

Recommendation # III.18: AARP should request its technical assistant team to consider the topic of in-service training needs and draft a proposal for designing and implementing an effective program for meeting them. This task could draw on short-term expertise brought in for the purpose of assisting the technical assistant team in this endeavor. The proposal should be drawn up with due awareness of AAETE capabilities and, wherever possible, closely integrate that organizational channel into the training programs proposed.

Recommendation # III.19. AARD and USAID should determine the need and feasibility of any modifications needed in the Grant and Loan Agreements to assign additional funds to in-country training of the kinds discussed above.

Recommendation # III.20. AARD should determine the extent to which duplication and/or competition are real problems in its AARP and NAR-II projects, and take action to minimize any deleterious effects found to exist.

CHAPTER IV  
PROJECT MANAGEMENT

The intent of this chapter is to look at the management elements of the project as part of a broad strategy to develop a national research network, look at the individual components, identify possible constraints and offer suggestions for improvement. This chapter is divided into five sections: (a) original expectations as spelled out in the project agreements and technical assistance contract; (b) current staffing and support arrangements of AARP; (c) the role of the technical assistance contract team; (d) monitoring and support provided by USAID; and (e) suggestions for improvement in project management.

A Project Management as Originally Stated in the Loan and Grant Agreements

1. The Role of AARD The Loan and Grant Agreements state very clearly that management of the project is to be the responsibility of AARD. The documents further state that day to day implementation and supervision will be provided by a AARD designated Project Implementation Officer (PIO). It was anticipated that the Public Works Office in each province would aid in the contracting, supervision of the design and construction of the physical facilities, and be responsible for insuring that the buildings are designed and built according to project specifications.

2. The Role of Technical Assistance

The grant funded portion of the project was to be utilized for the procurement assignment and support of professional technical assistance from a highly qualified management consulting firm. The consulting firm was to: (a) assist project management in establishing one Central Research Institute, three Research Institutes, thirteen Research Stations, and three Experimental Farms; (b) provide advice on physical requirements and construction of facilities; (c) provide advice on needed

laboratory and field equipment and assistance in procurement, installation and utilization of said equipment; (d) provide on-the-job training and short term training for manpower specialization and upgrading; (e) participate in on-going research and provide research guidance to the research staff; and (g) assist the AARD in other areas of project implementation.

B. Current Staffing and Support Arrangements for AARP

1. Major Components The AARP receives inputs from three organizations: AARD, RMI and USAID. AARD provides policy direction and objectives to AARP. RMI assists AARD in providing the necessary support to help AARP reach the project's objectives. The role of USAID has been primarily in design and monitoring progress of the project with AARD.

AARP is housed in AARD Headquarters. The Director General, of AARD is the official head of AARP, and handles all policy matters related to the project. Day-to-day (operational) activities are handled by the Project Implementation Unit (PIU) headed by a Project Leader. The Project Leader, is responsible to the Director General of AARD but reports to him through the Secretariat of AARD.

2. The PIU is comprised of three support units (advisor, treasury and administration), and five operational units (manpower development, technical assistance, land preparation, construction and equipment procurement) to assist the Project Leader in managing the project.

The PIU links with the operational elements of AARD through Regional Coordinators. There are three coordinators. Region I covers AARP activities in West Java, Bali and West Kalimantan and is headed by the Director for the Research Center for Food Crops in Bogor. Region II covers AARP activities in South, Central and East Kalimantan. It is headed by the Director of the Banjarmasin Institute for Food Crops. Region III covers AARP activities in South and North Sulawesi, the Malukas and the NTT, and its

coordinator is the Director of the Maros Institute for Food Crops. An overall description of the PIU and its relationships with the headquarters and regional elements of AARD and a project staff organization list appears in Appendix IV, Figures 1 and 2.

3. Technical assistance supplied to the AARP is provided in the form of long term and short term consultants employed by Resource Management International, Inc. (RMI). These consultants are directed by a Chief of Party, and include an Administrative/Training Officer, an Experiment Station Development Specialist and various Scientists/Experts located in Bogor (West Java), Gondol (Bali) Banjarmasin, (South Kalimantan) and Maros (South Sulawesi). The Chief of Party is responsible to the Director General of AARD and serves as a counterpart to the AARP Project Leader. The consultants based in each of the Research Institutes are technically responsible to the directors of the institutes to which they are attached but are administratively responsible to their technical assistance teams' Chief of Party. A listing of the RMI consultant team is presented in Appendix III, Table 2.

4. USAID monitoring and support are provided by a Project Officer appointed by the Mission Director. Through the Project Officer and his superior, the Chief of the Agricultural Division, the project has access to additional monitoring and support services including engineering, program planning, and procurement.

C. Role of the Technical Assistance Contract Team

The primary role of the technical assistance contract team (RMI consultants to AARD) is to assist AARD in implementing AARP. The role of the consultants is primarily training in nature but requires team members to carry out a variety of functions including research as requested to do so by AARD. This applies to the Chief of Party, the Administrative Officer, the Experiment Station Specialist and to the various Scientists assigned to the Research Institutes.

The activities of the consultants vary and are determined to a very high degree by the needs and immediate problems of the various functions and institutes to which they are assigned. The nature of the technical assistance team's work is very diverse as is shown in Appendix IV, Table 1.

D. USAID Monitoring and Support

USAID monitoring is handled primarily by the Project Officer who participates in a wide variety of meetings with AARD staff and consultants and with other donor personnel, undertakes field trips to keep abreast of progress and problems, and serves as liaison to other USAID offices.

The Project Officer draws in the services of other USAID offices, particularly engineering, as the need arises.

E. Observations and Recommendations to Improve Management

The Evaluation Team has made a variety of observations and recommendations on ways to improve the management of AARP. These fall into five categories: (1) General, (2) AARD Specific; (3) PTU Specific; (4) RMI Specific; and (5) USAID Specific.

1. General Observations and Recommendations

- a) Observations. The current expansion of research facilities to the Outer Islands is AARD's response to the national goal of promoting growth throughout Indonesia, particularly the Outer Islands and providing a stable environment as well as an equitable life for the people of Indonesia. The AARD response to this national goal is to build a strong agricultural research system that will reach all the corners of the archipelago and provide the needed scientific information that will insure a better quality of life for the people of Indonesia. The AARD has taken aggressive and imaginative actions to establish this system. In broad terms, research problems have been identified, priorities established, and strategies developed to solve some of these problems.

As a result, AARD has attracted a substantial amount of donor support, particularly from the World Bank, USA, UNDP, FAO, Australia, Japan and the Netherlands. This aid has been put to use in a variety of ways including construction of new facilities, procurement of general as well as highly sophisticated equipment, supplying of foreign experts and provision of training (long term and short term) to Indonesian personnel so that they can effectively man the research system envisaged by the Director General of AARD.

The expansion program now underway in Indonesia is impressive. In construction, no less than 700 buildings are being built at 49 locations on 6 separate islands involving 5 centers for agricultural research. (Appendix IV Table 2). The support in technical assistance is equally impressive. Although the exact number of foreign experts (long term) assisting AARD at various centers and institutes is unknown to the Evaluation Team, an estimate of at least 150 seems reasonable but conservative. The Evaluation Team knows of at least 30 long term experts assigned to the Food Crops Research Institute alone (Appendix IV Table 3). At least that many experts are currently attached to the Animal Science Research Centers. Substantial but lesser numbers of foreign experts are also attached to the Research Centers of Fisheries, Industrial Crops, Estate Crops and the various other units of AARD. The AARD, with donor assistance, is making an equally impressive effort to develop the necessary scientific manpower needed to man the research network. A few figures on growth of scientific expertise in recent years and future plans will serve to illustrate the point. The numbers of senior staff (PhD, M.Sc. and Sarjana) which in 1975 totaled 220 for all of AARD, were reported to be over 1900 as of October, 1983 and is estimated to reach nearly 2,500 by 1992. While these figures to some may appear to be very optimistic, the Evaluation Team is convinced these targets are likely to be met. For example, the World Bank (NAR-II and NAR-III), USAID, ADAB, JICA and the Netherlands all are providing substantial funding to cover

academic training. Large numbers are now training (abroad and in Indonesia) for Ph.D. and M.Sc. degrees. The NAR-II program alone had more than 350 engaged in academic training abroad as of November 30, 1983 and was programming funds to send an additional 1,000 for advanced degree training under its program between 1983 and 1992. A listing of targets for senior staff development (AARD) is presented in appendix IV, Table 4.

Indication of Problems - While the Evaluation Team is very impressed with the overall expansion effort now underway in AARD, it is clear that the entire system is now under a great deal of stress. Four indicators are offered as evidence. First, the delays encountered in getting AARP underway and the fact that it is up to two years behind schedule is one indicator. A second example is the difficulty to locate and qualify participants for foreign training. For example, of the 119 candidates that took the ALIGU test at USAID in 1982 nearly 85% of them failed and therefore were not able to undertake training abroad at that time. A third example is the difficulty some centers are having to effectively utilize technical assistance. The Animal Science Center in Bogor has nearly 40 foreign experts. The AARP has been requested to supply three long term experts through grant funds available through the project. The request in 1980 was originally for three experts in animal disease (parasitology, bacteriology and virology) to work at the station to be built in Banjarbaru, S. Kalimantan. Later this was changed to three experts in animal production to be based in Bogor, but to work on research in Kupang, Timor. During the Evaluation Team's visit, the request for the three experts for animal disease was again surfaced. The fourth example deals with local rupiah financing. The recent world recession has resulted in a major shortfall in foreign exchange earnings to the government and has caused it to impose certain austerity measures to keep the economy from getting out of balance. For AARD, this has resulted in curtailment in procurement of

certain equipment by the government but more importantly a reduction in the rate of growth of budgets needed to support the construction programs now underway. The Evaluation Team noted funds were particularly short for researchers to travel to various stations and to fund the operations and maintenance portion of field research. In short, while funds are theoretically available to finance field and laboratory research, in reality, funds for this were very limited at the institutes and stations visited by the Evaluation Team.

While it may be argued that this is a temporary situation due to the combined effect of a downturn in the economy and an inordinately high requirement of rupiah for construction, the hope is over the next few years, there will be an upturn in the economy and a drop in the level of construction, and that rupiah will again be available in ample quantities to cover the operations and maintenance of the network. This may not necessarily happen. First, most experts now feel there has been a permanent shift in the demand for oil. Should demand for energy increase, the procurements are likely to be from a much wider choice of oil producing nations than was the case in the late 70's. Second, the supply of industrial crops is also likely to diversify thus reducing the level of exports from those traditionally supplying the export markets.

This suggests that growth in foreign exchange revenues generated by Indonesian exports are not likely to follow the pattern of the late 70's. This shift is likely to affect the growth of budgets within various ministries. Therefore, monies available to finance the research system may not grow at the rate presently expected. A contributing factor to scarcity of funds to finance actual research projects is likely to be the sharper than expected rise in maintenance of the facilities now under construction. When the research system now under construction is finally in place, the cost of day-to-day operation is likely to be higher than expected. These two factors, high cost of routine operations and lower

than expected growth in budgets could limit the amount of resources that can be put in the hands of scientists to do actual research.

It is within this broad context that the Evaluation Team has looked at AARP and how it is expected to fit into the overall AARD system. Based upon the above, the Evaluation Team concluded the AARD system is currently under stress and perhaps a pause at this time to analyze some of the problems facing the system and possible corrections may be in order. It is in this spirit that the Evaluation Team offers its observations and recommendations. At no time does the Evaluation Team wish to imply the strategy and program laid out by AARD is not correct. The strategy is correct and the action should be continued but in a manner that will sustain smooth and effective growth.

- b) Observations directly related to AARP - The AARP represents a significant departure from projects previously attempted by USAID/Jakarta and AARD. First, the AARP is funded and managed through a Host Country Contract. This means the implementation and management of the project is completely in the hands of the host country agency, which in this case is AARD. Any assistance provided AARD in implementing AARP is arranged by them through contracts between AARD and consulting firms, such as RMI.

The second major difference between this project and previous USAID/AARD projects is in its diversity in commodities and physical scope.

Previous USAID funded projects generally involved assistance for only one commodity and to one geographic area. This project involves assistance to six separate Commodity Research Centers (Food Crops, Horticulture, Animal Science, Fisheries, Industrial Crops and Forestry.) In addition, project activities are to take place on six separate islands

(West Java, Kalimantan, Sulawesi, Bali, Maluku and West Timor) stretching more than 2500 km to the east from Bogor into areas and locations not easily reached even by boat or jeep. Several of the locations are not served by either telephone or radio thus making communications difficult and expensive. Constructing more than 400 buildings and laboratories and providing the necessary machinery and equipment will in itself be a major task. Providing the technical assistance, finding and training the technical staff and making them an effective and integral part of the AARD research system is an even greater challenge.

A key problem facing the project is the lack of experienced personnel. The AARP lacks staff experienced in building research facilities of this magnitude. Faced with these constraints the Evaluation Team is not surprised to find the AARP seriously behind schedule, the basic cause of which is management related.

The Evaluation Team recognizes that management personnel assigned to implement AARP have already gained valuable experience in executing the project. In many cases they have already suggested or put into effect policy changes that will in themselves correct past mistakes. This in itself is likely to result in a vast improvement in implementing the various elements of AARP during the remaining two months of the project.

The Evaluation Team also recognizes the AARP as part of a broader and larger effort of AARD to support government policies. These policies are directed toward stimulating growth in all areas of Indonesia and particularly the Outer Islands. They are also designed to provide a stable and equitable way of life to the people of Indonesia wherever they may live. The comments and recommendations offered here by the Evaluation Team in no way are meant to be critical of this effort. On the contrary, they are aimed at improving AARP's

effectiveness in helping AARD achieve the governments goals in providing growth, stability and equity for the people of Indonesia.

c) Recommendations

Recommendation # IV-1

Projects involving the Outer Islands should be kept as simple as possible and given more time for adequate verification of data, planning and development of coordination before being formalized and implemented.

Recommendation # IV-2

Those projects that involve more than one island or Research Institute should be given to experienced personnel for development, design and implementation.

Recommendation # IV-3

Personnel assigned to projects for the Outer Islands should work on them full time and be given ample opportunity to understand the complexity of the region and the resources required to remove the constraints most likely to interfere with the execution of the project.

Recommendation # IV-4

The technical assistance experts assigned to support projects aimed primarily at developing the Outer Islands (for example RMI experts assigned to AARP) should make a special effort to provide the type of assistance that will assure the project's objectives and AARD's goals are realized. During the early stages of the project, the consultant should assist AARD in identifying the key elements needed to successfully implement the project including a rolling Five Year Plan, an Annual Work Plan and regular opportunities to review the project and make adjustments to the original design if needed.

2. Observations and Recommendations Related to AARP

- a) Observations The Evaluation Team has concluded that much has happened since the Project Paper was developed, the Loan and Grant Agreements negotiated and the technical assistance contract signed and the first consultants arrived to assist in the implementation of the AARP. Most important of these events has been the decision not to extend the PACD more than six months and the introduction by the Director General of AARD of the mandate concept for the Research Institutes.

The Evaluation Team was privileged to review a draft copy of the plans for Repelita IV for the Ministry of Agriculture. This document now on the desk of the Minister of Agriculture, is expected to be approved within the next few weeks. It outlines the responsibilities and objectives of the various Centers Agricultural Research, the mandates of each of the Research Institutes and the research activities expected at each to fulfill its mandate and improve the overall effectiveness of the AARD system. This document is critical to the effective implementation of the AARP for it affords for the first time an opportunity to see how the facilities, equipment, technical assistance and training supplied by the project can help AARD meet its the overall goals and objectives. It is important that the goals, objectives and present operation of AARP, as presently perceived and implemented, be reviewed and adjustments made so that the project becomes an integral part of the overall AARD research system. The following suggestions are offered with this overall goal in mind.

- b. Recommendations

Recommendation #1V - 5

The Evaluation Team recommends that AARD redefine the goals and objectives of AARP, requirements for facilities, equipment, technical assistance and training taking into account the new mandates recently established for the various

Research Institutes. This re-definition should take place within the next three months (before April 1984). This should occur as the result of a workshop, the output being a clarification of the items listed above plus a Two Year Master Plan of Work for the 1984/85 and 1985/86 fiscal years. Another specific element of this plan would be a clear identification of those items that can be done at the Research Stations prior to or during construction (such as leveling of field sites at Banjarbaru, establishment of fish ponds at Gondol, which would sufficiently allow current staff to begin using the facilities for research and training).

Recommendation #IV - 6

The Evaluation Team recommends AARD convene a series of workshops dealing with Rice based and/or Industrial Crop based farming systems. The purpose of the workshop(s) would be to further explain the new mandate system and show how to work on specific cropping systems mentioned above that can be done in a given agro-climatic zone and satisfy both the national mandate and best serve the farmers of a given area.

The Team Evaluation recognizes that AARD has already completed much of what is expected from this workshop(s). The element included in the proposed workshop(s) and which builds on what AARD has already done is two-fold: a) the output of the workshop will be an Action Plan to do research by an individual or group of scientists; and b) funds (rupiah) from AARP would be used to support projects judged by AARD as worthy of funding.

Recommendation # IV-7

The Team Evaluation recommends that AARP use grant or loan funds to: (1) secure a short-term consultant(s) to plan and help execute the workshops(s) and required follow up activities, (2) supplement local expenses associated with planning and execution of the workshop(s) and (3) provide initial funds necessary to cover costs related to workshop(s)

follow up, including planning and execution of training programs on research methodology and hands on experience for Indonesian scientists.

Recommendation #IV-8

The Evaluation Team recommends that AARD also convene a workshop on manpower requirements to do research on Rice based or Industrial Crop based farming systems in one or more of the agro-climatic zones where research needs have been clearly identified.

This workshop would complement the one referred to under recommendation #IV-7.

The specific objectives of the workshop would be: a) identify manpower needs by discipline and degree required to meet the research activities set for a given agro-climatic zone and cropping system, b) determine the manpower now available to AARD to serve the area described in (a), (c) determine the manpower gap by discipline (d) ascertain the number of those now in training that will fill this gap and (e) set up a training program designed to supply the manpower necessary to close this gap. The planning of this workshop should start soon after the one on research planning.

Recommendation # IV-9

The Evaluation Team recommends the use of short term consultants in the planning and execution of the workshop on manpower and that high priority be given to the use of loan/grant funds to: a) purchase equipment, including computers necessary to carry out the workshop, b) pay for short term consultancy, c) supplement local expenses associated with planning and execution of the workshop and

d) provide funds to cover training of young scientists recently returned to Indonesia in the methodology and implementation of research projects.

Recommendation #IV - 10

The Evaluation Team recommends that AARD consider strengthening the Data Base Unit presently in the Secretariat so that it can improve the effectiveness of the AARD in monitoring program activities, allocating budgets, assigning personnel and establishing future requirements for funds, manpower and equipment.

Specifically, the effort should be directed toward improving the effectiveness of the unit to keep track of AARD's a) manpower capabilities and future needs, b) equipment requirements by institute, station and major discipline, c) major research projects, primary activities and principal researchers and d) budgetary status and requirements of priority research. By strengthening such a unit within AARD and having it easily accessible to AARD management, more effective use could be made of foreign assistance as well as resources supplied through the regular DIP.

Recommendation # IV-11

The Evaluation Team recommends that grant funds available under AARP be used to provide a short term consultant to implement recommendation # IV-10 and based upon the recommendations of the consultant and concurrence of AARD and USAID, the necessary equipment (computer) be procured and manpower trained to increase the effectiveness of the present unit.

Recommendation # IV-12

The Evaluation Team recommends that AARD clearly define the role of AARP, and in particular, identify the lines of authority between the Director General of AARD and the Project Leader of the PIU and those between the Director General and the Regional Coordinators handling AARP related activities. Also, AARD should further define the relationship between the Project Leader of the PIU and the Regional Coordinators. This should be communicated in writing to the appropriate parties. By so doing it will be clear where the Director General of AARD has delegated authority with responsibility and where he has not done so. The Evaluation Team recommends that the Director General of AARD appoint all personnel assigned to the PIU full time employees of the unit.

3. Observations and Recommendations Specific to PIU.

a. Observations

The Evaluation Team has concluded the Project Leader has done a creditable job in managing the PIU of the AARP. He is to be complemented on exhibiting a great deal of patience in trying to carry out his duties under very complex circumstances. He is encouraged to continue his work and find ways to improve the effectiveness of the PIU within the guidelines set forth by the Director General of AARD. It is particularly important to understand the lines of communication related to the AARP that are to be handled through the Project Leader and those to be handled directly by the Director General of AARD or his designated representative. Recognizing the caveates described in the section on conclusions, the Evaluation Team offers three recommendations that can be implemented by the PIU.

b. Recommendations

Recommendation # IV-13

The Project Leader should make every effort to set the organizational structure of the PIU by: a) meeting the immediate needs of the project as outlined by the Director General of AARD and b) coordinate these activities so they fully complement other activities of AARD as these apply to the program areas of AARP. Specifically, the Project Leader should gear the activities of the PIU to insure a smooth transition of program and personnel once the AARP is terminated. To achieve this will require the Project Leader to be fully abreast of the activities proposed for AARD in the previous section and if approved and executed by AARD, gear the operation of the PIU to be fully supportive of the resultant activities and assist wherever possible in providing the needed data requirements.

Recommendation # IV-14

The Evaluation Team further recommends the PIU request RMI hire a full time Indonesian Civil Engineer experienced in construction of facilities. This engineer should be placed under the direction of the Project Leader and assigned to the P3 Advisory Group. (See Appendix IV Figure 1)

The Project Leader should take appropriate measures to insure the engineer communicates as needed with the design and construction organizations and the appropriate Regional Coordinators responsible for the construction of AARP facilities.

Recommendation # IV-15

The Project Leader of the PIU should hold regular group meetings with AARD, RMI, design and construction personnel as well as appropriate USAID staff to insure the design and construction portion of the AARP is well coordinated and completed as soon as possible.

These meetings, financed with project funds, should be held at least once a month and include the appropriate Regional Coordinator. The Regional Coordinator should be able to use the trip related meeting to also discuss with other AARD Officials items related to AARP.

Recommendations # IV-16

The Project Leader should work closely with the Chief of Party of RMI to insure reporting procedures called for in the contract are met and coordinate meetings between AARD and the technical assistance team of RMI.

4. Observations and Recommendations Regarding RMI Management

The Evaluation Team has held extensive discussions with the Chief of Party and all but one of the resident consultants supplied to AARP by RMI. These discussions took place primarily in Bogor, Banjarmasin and Maros and included trips to research fields, laboratories, and offices utilized by the consultants. The Evaluation Team also met and talked with a number of the consultant's Indonesian counterparts.

In addition, the Evaluation Team had an opportunity to review a number of activity reports prepared by individual consultants as well as quarterly reports prepared by the Chief of Party and his Administrative Officer.

- a) Observations - The Chief of Party in consultation with assistance from other members of AARD is to be complemented for selecting a competent, energetic group of consultants obviously dedicated to their job and in most cases more than willing to assist their Indonesian counterparts in planning and conducting research and other endeavors not always directly related to the job. Additionally, many of the consultants conduct numerous seminars on their various specialties of research. Several assist their counterparts in learning English through one on one teaching efforts as well as in group classes.

The detail and scope of the activities is indeed impressive. Greater detail of the consultants efforts are summarized in Appendix IV, Table 1. In general, the Evaluation Team concludes the Chief of Party has done a commendable job in assembling the technical assistance team and getting them actively working on the problems they were hired to do. Having given due credit to the Chief of Party and his team of consultants, the Evaluation Team did identify a number of situations where RMI was deficient relative to the contract with AARD in providing services normally expected from an internationally respected consulting firm.

Articles III and IV of the contract between the Ministry of Agriculture and RMI clearly identify the services to be provided and the responsibility and obligations of the consulting firm. Article III paragraph 3.02 states that long-term planning of the project shall be conducted during the first six (6) months after arrival of the first resident staff. He shall be assigned to develop a Five-Year Master Plan of Action and Annual Work Plans. Further to this, Appendix B of said contract states. "The Chief of Party and other contract specialists will be expected to assist with the preparation of a plan for the training of Indonesian staff."

Article IV Paragraph 4.08 states "The consultant shall promptly report to the Ministry the occurrence of any event or conditions which might delay or prevent the completion of the Project in accordance with the provision of this Contract and shall indicate what steps are being taken or suggested by the consultant to overcome problems causing delays." Paragraph 4.09 of the same article outlines the consultant's Home Office responsibilities as to make periodic visits to the project area. Appendix B Paragraph 6 Reports and Evaluation states: "an annual review of the progress achieved in the first, second and fourth year . . . on the basis of this review, the next year's Work Plan will be updated and appropriate program changes introduced if necessary." The Evaluation Team found no

evidence that any of the above contract provisions were met. What is of greatest concern is that delays if expected were not reported in writing. Additionally, the Evaluation Team reviewed the terms of the contract regarding housing allowances for consultants and found this stated as a fixed amount item in rupiah and no provision was made to adjust for inflation. Travel funds for some consultants seemed unusually low. Also, the health insurance provided to the consultants by RMI has certain limitations regarding maternity and other medical benefits. While these items may seem minor to some they can lead to major difficulties in retaining top notch consultants. In view of the large overhead and fixed fee charged by RMI, it seems reasonable to assign to it at least a share of the responsibility for some of the problems now facing this project.

b. Recommendations

The Evaluation Team offers only four recommendations regarding the management capabilities of the consulting firm.

Recommendation # IV-17

The AARD should immediately request RMI to assist in complying with the Terms of the Contract and particularly those in Articles III and IV cited by the Evaluation Team as being deficient. In the event RMI does not respond to this request, this failure could serve as a basis for a complete review of the RMI/AARD Contract and may serve as a basis for considering action that may lead to termination of services.

Recommendations # IV-18

Assuming RMI responds positively to recommendation # IV-17, it is recommended that the Chief of Party and his staff devote their resources to help implement as many of the recommendations made by the Evaluation Team as deemed feasible and appropriate by AARD. This should be put into a Detailed Two Year Work Plan for 1984/85.

Recommendation # IV-19

The Chief of Party should continue to focus as much of his time on AARP related activities as possible and avoid completely those activities that are not related to AARD.

The Evaluation Team noted the extensive use of services of the Chief of Party by AARD for a wide range of purposes. While the Evaluation Team recognizes the need will arise and at times the importance of complying with these requests, care should be taken to ensure this is not at the expense of technical or administrative needs of the technical assistance.

Recommendation # IV-20

In the event the needs by AARD for the Chief of Party's services are such that they indeed do limit his effectiveness in serving the immediate requirements of the project, he should consider hiring an Administrative Assistant.

5. Observations and Recommendations Specific to USAID

- a) Observation - The USAID Project Officer was involved at the very early stages of drafting the Loan and Grant Agreements. It is evident that a great amount of effort was exerted in the early stages of project implementation, even though the USAID Project Officer inherited a Project Paper that has several deficiencies as well as overly optimistic assumptions. A Detailed Project Implementation Plan was designed by the USAID Project Officer and the former AARD Project Leader with the assumption that the technical assistance contractor would then define in greater detail the Implementation Plan year by year. However, to date this still has not been done by the technical assistance contractor. It remains to be seen whether aggressive action by the Project Officer would have corrected this problem.

Formally scheduled project meetings with AARP project officials are being held on a semi-regular basis. Formal Project Management Status Reports are scheduled and prepared and Memorandums of Conversation between USAID, AARD and RMI are followed up for the project file.

The Evaluation Team recognizes the USAID Project Officer is the official responsible for monitoring the performance of the project and the technical assistance contractor in order to facilitate the attainment of project objectives. The Project Officer has enlisted the assistance of the other mission offices such as Engineering, Program, Legal Advisor, Contract Management, Training and Finance to take action on matters within their functional areas of responsibility. However, the USAID documentation and clearing process is slow and some of the technical backstop offices are already overburdened with heavy work loads from other mission projects they also backstop. At the early stages of project implementation there was no continuity or "team effort" between the different mission offices. Today, that continuity is still missing, however the USAID Mission Director is aware of this problem and is addressing it accordingly.

Discussions with the USAID Project Officer reveals a vast amount of project documentation has been generated. The Evaluation Team noted the USAID Project Officer also manages other projects. The Evaluation Team commends mission management in their decision to place the USAID Project Officer in Bogor. This action has resulted into a smooth, working relationship with project personnel living in Bogor. It should be noted the USAID Project Officer does not feel overly constrained by the present workload.

b) Recommendations

The Evaluation Team understands that USAID management and supporting technical offices are making a concentrated effort to resolve some of the key issues facing project implementation. The USAID Project Officer assigned to the project has done an excellent job in project duties and is totally familiar with project activities.

Recommendation # IV-21: The Mission backstop offices (i.e. Engineering, Program, Training and Finance) should spend time in the field and become familiar with the project's activities. The Evaluation Team understands there is limited amount of mission manpower available for these trips.

Recommendation # IV-22: After all key project implementation issues have been resolved, the USAID Project Officer should request from RMI, a detailed Implementation Action Plan and a Two Year Plan of Work. This should include a project schedule or project activity chart/calendar indicating the critical milestone dates, project study/reports/papers due dates or scheduled completion dates, etc., for the remaining duration of the project.

Recommendation # IV-23: The technical advisory/steering committee for the AARP already existing in AARD should be structured to include appropriate people from the AARD Secretariat, AARD/PIU, RMI Chief of Party and others as deemed by the AARD Secretariat as necessary to ensure the smooth operation of AARP. The USAID/Indonesia Project Officer should be the principal representative from USAID.

CHAPTER V  
ACTION PLAN REQUIREMENTS

Chapters III and IV have reported on progress, issues and problems as these relate to the several major functional implementation and management facets of the project, and have presented the specific conclusions and recommendations of the Evaluation Team with respect to those facets. This chapter will deal with a more general, overarching set of conclusions and recommendations concerning the project as a whole, and will present general guidelines for the development of an Action Plan for the remainder of the project's term. The Evaluation Team feels that because of the basic nature of some of the issues it has identified and raised, and because of the limited time it has at its disposal, it cannot deal effectively with a fuller treatment of the subject or the actual development and articulation here of an Action Plan proposal.

Before proceeding, however, it is necessary to address certain basic issues and questions that have an impact on project aspects more general in scope than those addressed in the preceding chapters.

The first of these has to do with the proposal that the GOI and USAID agree to amend the Project Agreements or take such other actions as may be necessary to alter certain basic understandings which undergird and define the scope of project activity. At issue here are the following questions:

- 1) Whether it would be possible to change the proportions of GOI and USAID funding for the construction program, from the current 57%/43% ratio to one of 35%/65%?
- 2) Whether it would be possible to alter the currently sanctioned uses of GOI resources and USAID loan and grant funds to accommodate the requirements of certain proposals made in Chapters III and IV with respect to training, staff, etc.?

- (3) Whether the resources which might be saved by proposed cut-backs in construction, procurement and numbers of technical assistance experts, would be sufficient for covering the alternative uses suggested?
- (4) Whether it would be possible to extend the PACD to allow more time to accomplish project objectives?

The Evaluation Team is not in a position to answer these basic questions, nor would it be appropriate for such an attempt to be made. Nevertheless, recognizing that the feasibility of some of the recommendations made is entirely or partly contingent upon the answers, the Evaluation Team must ask the questions.

In the case of question one, the Evaluation Team has used a 35%/65% split as its example, although other splits have also been suggested. This is because such a ratio, when applied in conjunction with a cut-back in construction along the line(s) proposed in Chapter III, could result in substantial savings (see Appendix III, Table 5) for possible application to other critical needs such as additional staff housing at selected research sites. Another and more basic reason for the choice of the 35%/65% ratio is, of course, found in the current austerity of GOI's budgets. The Evaluation Team understands that the Project Agreements do allow for changes of up to forty percent (40%) in allocations to budgeted items, but notes that there are limitations placed by the Project Agreements on the conditions under which such shifts can be made.

The second question asked above differs in content from the one preceding it, but the same or similar factors apply, and therefore it is not dwelt upon here.

The third question is different, although the answer to it will obviously affect the choice of alternatives in an equally powerful way. The Evaluation Team has not been able to cost out the proposals it has made, but recognizes that such an exercise is a necessary pre-requisite to planning an action program. This should be done before any decisions are made with respect to options.

The final question raises issues which the Evaluation Team cannot effectively address. It should be stressed here, however, that if a way can be found to solve the procurement impasse, and if AARD and USAID can soon reach agreement on how best to proceed in solving other problems discussed in this report, then, other things being equal, the Evaluation Team feels an extension is both appropriate and desirable. The Evaluation Team feels strongly that a mistake was made at the time this project was approved because a project of this one's scope, complexity and size, designed for a longer period, should not have been limited to five years of life. Conversely, if five years were to be the maximum, then the project should have been scaled down in size. As it is, the five year limit imposed by the Project Authorization has combined with the normal delays associated with starting up such endeavors to force the kinds of difficult choices now faced. Under these circumstances, the Evaluation Team supports a PACD extension of at least six months. Such an extension would allow a closer approach to project objectives and provide opportunity for the GOI and USAID to examine more completely the lessons of this project to the definition of possible future USAID assistance to agricultural research in Indonesia.

The main points for consideration in the preparation of an Action Plan for the final two years (+) of the project, in our judgement, are procedural and substantive. At a minimum, the procedure should include the following steps:

- (1) In-depth evaluation of the current situation. (The Evaluation Team believes it has provided most salient elements of this.)
- (2) In-depth evaluation of the alternatives proposed and a study of the implications of each one. (Alternatives should not necessarily be viewed as discrete and unmixable; rather, they should be seen as options situated along continua or axes which may or may not cross each other's lines.)
- (3) Consideration of the situational context or environment, and identification of the parameters of and limitations on choices which might be made. (This would involve consideration of such factors as project purposes, time and funding constraints, etc.)

- (4) Making choices from among the desirable alternatives available, and making the collateral decisions.
- (5) Laying out a realistic conceptual framework for planning and organizing to do the detailed work involved.
- (6) Preparing the Action Plan itself.
- (7) Getting the Action Plan approved by the parties whose sanctions are important to successful implementation.
- (8) Documenting both the Action Plan itself and the process used in its development.

The substantive points involved are defined fairly well by the findings and recommendations of this evaluation. The Evaluation Team believes there is no need to discuss them further here. One final point should perhaps be made. The Action Plan should be constructed by all parties involved in the project and it would be appropriate to recruit and employ a short term expert to assist in this task.

Were the Evaluation Team able to prepare an Action Plan, it would start by looking back at the Project Paper, especially at its output and input assumptions, and try to relate these statements to the actual experience of the project to date. Such a procedure would point the way to a re-definition of the general patterns in which project activities should be focused, and would also point to possible stress areas in need of special attention in the Action Plan.

The Action Plan, when it is developed, should be framed with the scope and magnitude of the present AARD program clearly in mind. The directions to be taken in the Action Plan should be determined not from the perspective only of palliative or corrective measures to permit AARP to do what its original objectives called for, but from the perspective also of what the present plans, priorities and stresses of AARD require. The Evaluation Team suggests that this might be done most effectively were the Action Plan to include, at an early date during its

implementation, arrangements for the two workshops suggested in Chapter IV. These workshops would, with careful planning, provide at least two kinds of available outputs: a clearer understanding on the part of professional staff, both Indonesian and Expatriate, of the purposes and functions of AARD, and within that framework, clarify and strengthen the roles, relationships and responsibilities of the Research Institutes, Research Stations and Experimental Farms which are parts of the system. They would also facilitate the identification and prioritization of research problems and help in planning the program to make the most effective use of available resources. Development of the Action Plan should not await the convening of the workshops. Rather, the developed Action Plan should provide for them.

CHAPTER VI  
POLICY AND PROGRAM IMPLICATIONS

The Evaluation Team realizes many of the recommendations made in the previous chapters, if accepted and implemented, will require modifications in present policy(s) of A.I.D. and AARD as well as the programs of each. In this Chapter, the Evaluation Team addresses these recommendations that are likely to have a major impact in either of these areas. No doubt more issues could be identified by the Evaluation Team with additional time. Also, recognize that other issues are likely to surface with time. These, however, appear to be especially crucial at this time.

Recommendation # VI-1:

The cancellation of the Forestry component from the AARP.

This request was made by the Director General of AARD during the Evaluation Team's first meeting with him. The Evaluation Team makes the recommendation to cancel at least the construction and equipment portions of the Forestry component of AARP. This recommendation is made for two reasons. First and foremost, deals with delays in obtaining a secured site. The Ministry of Forestry has been unable to identify land near Samarinda suitable for construction. Inability to obtain the proper land certificates for the site is the problem at Sudiang Mandai. The difficulty experienced in securing proper land certificates in itself will result in significant delays in getting construction started and completed by the PACD. The second reason for making this recommendation is procedural. As of June, 1983, the Forestry Institute was taken out of AARD and included in the newly created Ministry of Forestry. It is not clear to the Evaluation Team whether cancellation of the Forestry component will free up rupiahs originally budgeted for construction for use elsewhere in the project or whether these funds are lost to the project altogether as a result of cancellation. AARD needs to receive a ruling on this since most of the alternatives proposed in Chapter V carry the assumption that rupiah funds can be used elsewhere.

Recommendation # VI-2:

Increase from 43.42% to 65% AID's share of construction costs.

This request was proposed by AARD in its July, 1983 letter to USAID. While the Evaluation Team has supported this request in the form of a recommendation, there remains a need for clarification from both USAID and AARD on the policy and program issues involved. First, the Loan Agreement states that line items described in its financial plan can be inter-changed in amounts up to 40% provided the USAID contribution does not exceed the amount of the loan and the total contribution made by the GOI does not decrease. AARD needs to provide clarification in two areas. First, can rupiah described for use in the construction component be re-programed to finance other line items of the project? And second, is AARD willing to maintain its original rupiah commitment? A USAID policy matter related to this is whether it will accept payment "in kind" as part of the GOI contribution; for example is GOI provision of training facilities an appropriate "in kind" contribution?

Recommendation # VI-3:

Extend the PACD of the project by six months.

Every indication was given to the Evaluation Team by both USAID and AARD that an extension of the project by six months is both acceptable and desirable. If for any reason this should not be the case, a major amount of the loan and some of the grant monies will probably go unused.

Recommendation VI-4:

Consider use of grant and loan funds to finance in-country training.

This recommendation has been made by the Evaluation Team in an earlier chapter. The Evaluation Team is aware that current GOI policy discourages use of loan funds in this way.

Additionally it was not clear to the Evaluation Team whether grant or loan funds can be used for this purpose without amending the present Project Agreements. Both AARD and USAID should provide clarification on this matter since the Evaluation Team has recommended that a substantial amount of in-country training be used with funds originally destined for financing construction.

Recommendation # VI-5:

Consider cancellation of the project or drastically modify it if the proposed solution for using the present PSA proves unacceptable to either the GOI, AID or the PSA in question.

Failure to find a way acceptable to all parties to use the present PSA will result in at least a fourteen month delay in the procurement and installation of equipment. This in turn would make highly doubtful the project's ability to obtain anything but a fraction of the equipment needed for the facilities likely to be built. In the Evaluation Team's judgement, the issue here is one which, if unresolved, is threatening the viability of the entire project.

Recommendation # VI-6:

Convene workshops for the Outer Islands on research planning and manpower assessment.

Convening workshops in these areas has strong program implications. Their early convening and successful completion are likely to go a long way toward providing a badly needed basis for successfully completing the AARP. Additionally, completion of these workshops will, we feel, almost immediately increase the capabilities and effectiveness of the research system now in place for the Outer Islands and likely accelerate the time when these AARD facilities become operational.

APPENDIX I

Table 1. Budget for Agriculture in Repelita III in Million(s) Rupiah

Program	Main Budget	Foreign Aid Component	Sub Total	Percent of Total
1. Food Crops	114,861	10,139	125,000	28.3
2. Animal Production	21,200	3,800	25,000	5.7
3. Fisheries	19,000	16,000	35,000	7.9
4. Plantation Crops	26,728	38,272	65,000	14.7
5. Forestry	6,111	1,389	7,500	1.7
6. Agro-Economic Development	7,557	1,918	9,475	2.1
7. Agricultural Extension	6,396	800	7,196	1.6
8. Agriculture Extensification	9,000	-	9,000	2.0
9. Management of Natural Resources	22,566	3,434	26,000	5.9
10. Agricultural Research	54,589	14,911	69,500	15.7
11. Transmigration	7,730	-	7,730	1.8
12. Statistics	1,700	-	1,700	.4
13. Agriculture	11,813	6,187	18,000	4.2
14. Government Apparatus	325	-	325	.1
15. Government Facilities	35,000	-	35,000	7.9
Total	344,576	96,850	441,426	
Percent	79.1	21.9		100

Source: Translated from draft of Agricultural Sector, Repelita III

Research Activities and Mandate for the Center for Food Crop Research  
and Associated Institutes' Stations and Farms

Research Institute for Food Crops

	Bogor	Sukamandi	Malang	Banjarbaru	Maros	Sukarami
<b>1. RESEARCH ACTIVITIES:</b>						
1. Research on the technology development of food crops.		Specific crops: rice, corn, wheat, sorghum, soybean, peanut, mungbean, cassava, sweet potato, and introductory plants.				
2. Research on the genetic characterization, evaluation, utilization and conservation.	do					
3. Research on commodity analysis and farming for food crop development.	do					
4. Research and development on production technology, post harvest technology, farming and mechanization of food crops.		-Specific crops: rice, corn wheat, sorghum soybean, peanut mungbean, cassava and sweet potato. -Specific land: irrigated land -Specific discipline: rice pests.		-Specific crops: similar to Sukamandi. -Specific land: swamp and tidal swamp.	-Specific crops: similar to Sukamandi. -Specific land: dry-land in dry climate. -Note: Include mechanization.	-Specific crops: similar to Sukamandi. -Specific land: dry-land in the wet climate and high elevation areas.
5. Research and development on production technology, post-harvest technology, and farming, particularly, of palawija crops.				-Specific pala- wija crops: corn, wheat, sorghum, soy- bean, peanut.		

(continued)

	Bogor	Sukamandi	Malang	Banjarbaru	Maros	Sukarami
<b>II. RESEARCH STATION OF THE RES.INST.</b>	Lanrang Res. Sta with specific mandate on rice disease research.	Pasar Miring Research Sta. with specific mandate on rice pest research.	1. Maneng Res. Station with specific mandate on legume and tuber crops research.  2. Mojosari Res. Sta. with specific mandate on research in corn.	1. Handil Manarap Res. Sta with specific mandate on research for the indirect tidal swamp area.  2. Barabai Res. Sta. with specific mandate on food crop research for deep swamp area.	1. Sibowi Res. Sta. with specific mandate on cropping system research.  2. Wawobobi Res. Sta. with specific mandate on research to obtain optimal production of food crops in dry land with dry climate area.  3. Makariki Res. Sta. with specific mandate on food crop research for island region with 4-6 months rain per year.	1. Sitiung Res. Sta. with specific mandate on food crop research in podsollic soil type land area.  Sumani Res. Sta. with specific mandate on upland rice pest control research.
<b>III. EXPERIMENTAL FARMS</b>	1. Citayam 2. Muara 3. Pacet 4. Singamerta 5. Cikeumeuh	1. Sukamandi Barat 2. Sukamandi 3. Kuningan 4. Mertoyudan 5. Jakenan 6. Pasar Miring (under the Pasar Miring Res. Sta).	1. Kendalpayak 2. Jombogede 3. Ngale 4. Genteng 5. Muneng 6. Mojosari	1. Banjarmasin 2. Banjarbaru 3. Pleihari 4. Binuang 5. Lempake 6. Kayu Agung 7. Balandean 8. Unit Tatas 9. Tanggul 10. Handil Manarap 11. Barabai	1. Maros 2. Bontobili 3. Parigi 4. Mariri 5. Kalasey 6. Kupang 7. Sibowi 8. Wawobobi 9. Makariki	1. Sukarami 2. Bandarbuat 3. Rambatan 4. Lampineung 5. Sitiung 6. Taman Bogo 7. Sumani

RESEARCH INSTITUTE FOR HORTICULTURE

Lembang Res. Inst.

Solok

I. Research Activities of the  
Res. Institute.

1. Research and development on production technology, pests, diseases, nematology, post-harvest technology and farming of vegetables.
2. Research on ornamental plants.
3. Research on genetic characterization, evaluation, utilization and conservation of vegetables and ornamental plants

1. Research and Development on production technology, post-harvest technology and farming of fruits.
2. Research on genetic characterization, evaluation, utilization and conservation of fruits.

II. Research Activities  
of the Research  
Stations.

1. Segunung Res. Sta.  
Research on pest, disease and namatology of the vegetables and ornamental plants.
2. Cipanas Res. Sta.  
Research on ornamental plants.
3. Berastagi Res. Insti.  
Research on vegetables for export.

1. Malang Res- Sta.  
Fruit research of the high elevation area with dry climate
2. Jeneponto R. S.  
Research on citrus.
3. Pasar Minggu  
Research on post-harvest technology of fruit.

Table 4

## RESEARCH INSTITUTE FOR INDUSTRIAL/ESTATE CROPS

<u>Bogor</u>	<u>Tea and Cinchona</u>	<u>Malang</u>	<u>Jember</u>	<u>Sugarcane</u>	<u>Manado</u>	<u>Sungai Putih</u>	<u>Medan</u>
A. Research Activities	A. Research Activities	A. Research Activities	A. Research Activities	A. Research Activities	A. Research Activities	A. Research Activities	A. Research Activities
1. Research on the technology development of industrial, estate and medicinal crops	1. Research on production technology and post-harvest technology of tea and cinchona	1. Research and development on production technology, post-harvest and farming of tobacco and fiber	1. Research and development on production technology, post-harvest and farming of coffee and cocoa	1. Research and development on production technology post-harvest and farming sugarcane	1. Research and development on production technology post-harvest and farming coconut	1. Research and development on production technology post-harvest and farming of rubber plant	1. Research on production technology post-harvest technology and farming of oil palm
2. Research on rubber technology	2. Research on genetic characterization, evaluation, utilization and conservation of tea and cinchona.	2. Research on genetic characterization, evaluation, utilization and conservation of tobacco and fiber crops.	2. Research on genetic characterization, evaluation, utilization and conservation of coffee and cacao.	2. Research on genetic characterization, evaluation, utilization and conservation of sugarcane.	2. Research on genetic characterization, evaluation, utilization and conservation of coconut.	2. Research on genetic characterization, evaluation, utilization and conservation of rubber plants.	2. Research on genetic characterization, evaluation, utilization and conservation of oil palm.
3. Research on genetic characterization, evaluation, utilization and conservation of industrial, estate and medicinal crops.	B. Research Stations: 1. Simalungun	B. Research Stations: 1. Ungu Pandang Research on fiber crops in dry climate area.	B. Research Station: -	B. Research Station: -	B. Research Station: Pakuwon, Bogor.	B. Research Station: Sembawa	B. Research Station: -
E. Research Stations	C. Experimental Farms: 1. Gambung 2. Pasir Sarongge 3. Cibumreum 4. Kebun Jagung 5. Laut Tawar	C. Experimental Farms: 1. Ngemplak 2. Muktihardjo 3. Sukapura 4. Asembagus 5. Sumberrejo 6. Kalipare 7. Bojeng	C. Experimental Farms: 1. Kaliwening 2. Sumberasin 3. Jember	C. Experimental Farms: 1. Pasuruan	C. Experimental Farms: 1. Pandu 2. Kemaatas 3. Paniki 4. Kayuwatu 5. Mapanget 6. Bone-Bone 7. Simpang Mortratol Selakan 8. Makariki 9. Payagajah 10. Selakan 11. Pakuwon	C. Experimental Farms: 1. Sungei Putih 2. Sembawa	C. Experimental Farms: 1. Aek Pancur. 2. Sungai Pancur 3. Pagar Merbau 4. Teluk dalam 5. Pangarutan 6. Padang Bulan 7. Semirik Pandang Nandarsyah 8. Sijambu-Jambu 9. Pulau Maria 10. Bukit Sendang
1. Nata: Research on clove and pepper							
2. Solok Research on clove disease							
C. Experimental Farms: 1. Cimanggu, Bogor 2. Cibinong 3. Citayam 4. Ciomas 5. Cibodas 6. Nagasari 7. Cikarpek 8. Manako 9. Sukamulya 10. Bukit Kemuning 11. Teginemeng 12. Petaling 13. Natar 14. Lain							

RESEARCH INSTITUTE FOR FISHERIES

Jakarta Research Institute for Fisheries

Bogor Research Institute for Fisheries

Maros Research Institute for Fisheries

A. Research Activities:

1. Research and development on fish biology, ecology and socio-economic of the pelagic fishes, crustacea, molusca, sea-weed and fisheries technology.
2. Research on genetic characterization, evaluation, utilization and conservation of the pelagic fish, crustacea and molusca.

B. Research Stations:

1. Ancol
2. Slipi
3. Semarang

A. Research Activities:

1. Research and development on the production, post harvest technology, cultivation, socio-economic and farming of inland fishes.
2. Research on characterization, evaluation, utilization, and conservation of inland fishes.

B. Research Stations:

1. Depok
2. Jatiluhur
3. Palembang

A. Research Activities:

1. Research and development on marine culture, biology, nutrition, natural feeding, reproduction technology of seashore fishes.
2. Research on the characterization, evaluation, utilization and conservation of seashore fishes.

B. Research Stations:

1. Gondol
2. Serang
3. Tangung Pinang

RESEARCH INSTITUTE FOR ANIMAL HUSBANDRY

Research Institute for Veterinary  
Science/Animal Disease

A. Research Activities:

1. Research on virology, bacteriology, toxicology, pathology, parasitology and microbiology of livestock.
2. Research on genetic characterization, evaluation, utilization and conservation of the livestock diseases.

B. Research Station:

Banjarbaru Research station with specific mandat:  
on ruminant parasitological research.

Research Institute for Animal Production

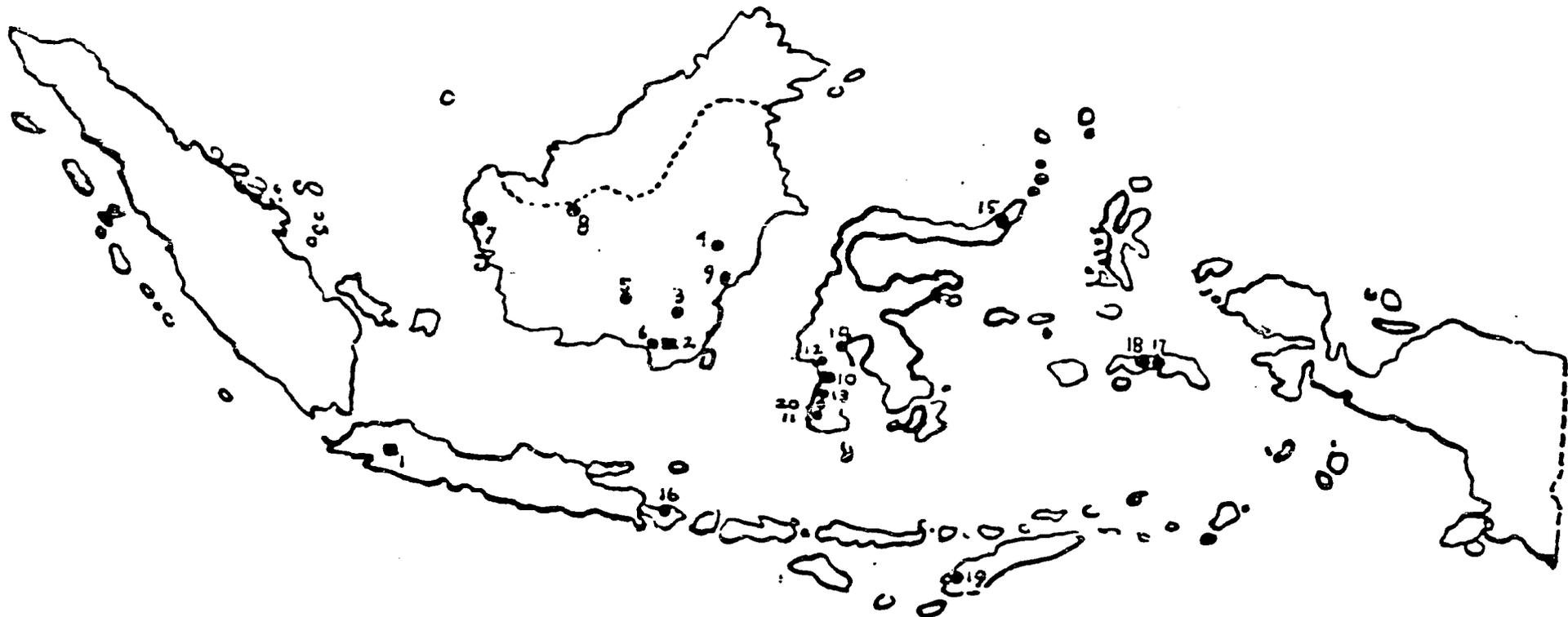
A. Research Activities:

1. Research on the production of livestock, pasture crops, feed and waste product of livestock.
2. Research on genetic characterization, evaluation, utilization and conservation of livestock and pasture crops.

B. Research Station:

1. Kelapa Research Station
2. Grati Research Station
3. Sungei Putih Research Station
4. Gowa Research Station
5. Kupang Research Station.

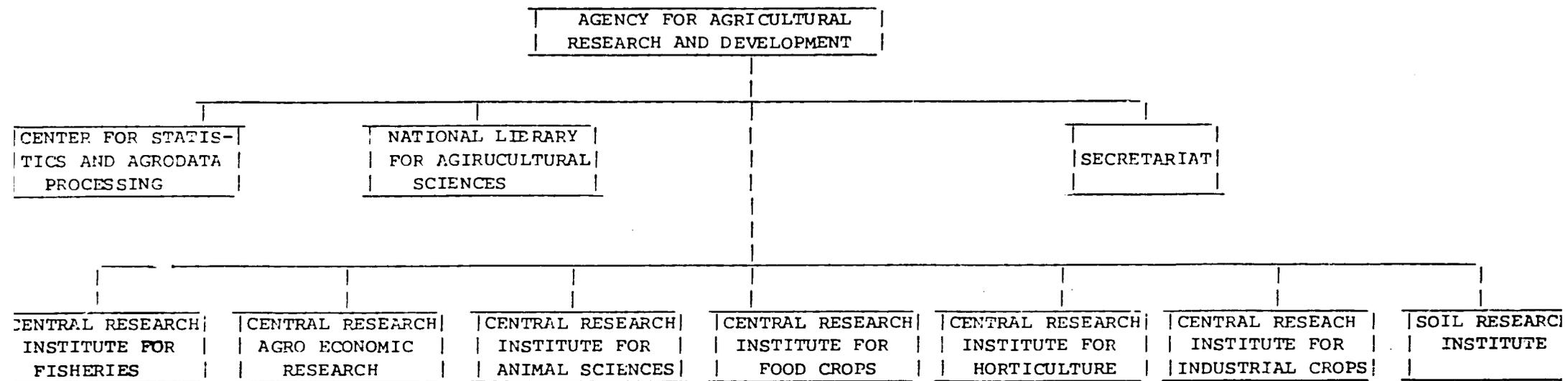
Location of AARD Research Institutes, Stations and Experimental Farms Construction through AARP.



- |    |   |    |  |
|----|---|----|--|
| 1  | DUGOR (JABAR) : CENTR. RES. INST. FOR FOOD CROPS          | 11 | JENEPONTO (SUL SEL) FOOD CROPS RES. SUB STATION            |
| 2  | BANJARBARU (KALSEL) : CENTR. INST. FOR FOOD CROPS         | 12 | LANRANG (SUL SEL) FOOD CROPS RES. SUB STATION              |
| 3  | HANDILMAHARAP (KALSEL) : FOOD CROPS RES. SUB STATION      | 13 | BONTOBILI (SUL SEL) FOOD CROPS RES. SUB STATION            |
| 4  | LEMPAKE (KALTIM) : FOOD CROPS EXPER. FARM.                | 14 | MARIRI (SUL SEL) FOOD CROPS RES. SUB STATION               |
| 5  | UNITATAS (KALTENG) FOOD CROPS EXPER. FARM                 | 15 | KALASEY (SUL UT) FOOD CROPS RES. SUB STATION               |
| 6  | BANJARBARU (KALSEL) : ANIMAL DIS. RES. SUB STATION        | 16 | GONDOL (BALI) INLAND FISHERIES RES. SUB ST.                |
| 7  | JP. MONTRORO (KALBAR) : INDY. CROPS RES SUB STATION       | 17 | MAKARIKI (MALUKU) : INDY. CROPS RES SUB STATION            |
| 8  | SELAKAU (KALBAR) : INDY. CROPS RES SUB STATION            | 18 | MAKARIKI (MALUKU) : FOOD CROPS RES. SUB STATION            |
| 9  | BALIKPAPAN (KALTIM) : FOREST AND FOREST PROD. RES SUB ST. | 19 | LILI (KUPANG) : FOOD CROPS RES. SUB STATION                |
| 10 | MAROS (SUL SEL) : FOOD CROPS RES. SUB STATION             | 20 | MAROS (SUL SEL) : FOREST AND FOREST PROD. RES SUB STATION. |

Appendix II  
Figure 2

Organizational Frame Work of AARD



AID & GOI FINANCED  
PROJECTION OF EXPENDITURES  
BY U.S. FISCAL YEARS  
(US \$ 000)

LOAN	FY1980		FY1981		FY1982		FY1983		FY1984		FY1985		FY1986		TOTALS
	AID	GOI	AID	GOI											
<u>USE</u>															
Construction	-	1030	970	2135	1370	1310	1280	1260	950	875	690	840	440	284	13434
Farm Development	-	268	-	915	-	640	-	560	-	480	-	200	-	103	3166
Lab Equipt	-	-	490	166	260	19	185	16	210	23	231	-	-	-	1600
Field Equipt	-	-	780	-	712	-	660	-	508	-	290	-	110	-	3060
Misc. Info Equipt.	-	-	185	157	255	86	210	90	120	40	150	-	37	-	1330
Vehicles	-	-	240	-	570	-	190	-	85	-	-	-	-	-	1085
Training	-	-	185	147	200	98	310	86	420	70	124	57	100	34	1831
Sub Total:		1298	2850	3520	3367	2153	2835	2012	2293	1488	1485	1097	687	421	25506
<u>GRANT</u>															
<u>USE</u>															
Tech. Asst.			870	150	870	110	790	100	700	70	700	50	677	20	5127
Sub Total		1298	3720	3670	4237	2263	3625	2112	3013	1558	2185	1147	1364	441	30633
Contingency @ 10%		130	370	365	423	225	362	210	301	155	218	111	136	40	3046
Inflation @ 30%		389	1116	1101	1271	679	1087	633	903	467	655	344	409	132	9186
Grand Total:		1817	5206	5136	5931	3167	5074	2955	4217	2180	3058	1602	1909	613	42865



Appendix III  
Table 1

Technical Assistance - Applied Agricultural Research  
Project No. 497-0302

<u>Institute</u>	<u>No.</u>	<u>Discipline</u>	<u>P.Y.</u>	<u>Cost</u>
<u>Bogor</u>				
(Research Inst.)	1	Admin. Assistant	3	255,000
	1	Team Leader	3	255,000
	1	Physiologist	2	170,000
	1	Social Economist	1	85,000
	1	Legume Breeder	2	170,000
	1	Tuber Breeder	2	170,000
	1	Food Prod. Specialist	2	170,000
	1	Economist	2	170,000
			<u>17</u>	<u>1,445,000</u>
<u>B'Baru</u>				
(Research Inst.)	1	Agronomist	2	170,000
	1	Soil Scientist	2	170,000
	1	Social Economist	1	85,000
			<u>5</u>	<u>425,000</u>
<u>Maros</u>				
(Research Inst.)	1	Soil Scientist	2	170,000
	1	Rice Breeder	2	170,000
	1	Agronomist	2	170,000
	1	Social Economist	1	85,000
(Forestry SS)	1	Silviculturist	2	170,000
	1	Wildlife Mgr. Spec.	1	85,000
			<u>10</u>	<u>850,000</u>
<u>Balikpapan</u>				
(Forestry Substa.)	1	Silviculturist	2	170,000
	1	Soil Scientist	2	170,000
	1	Engineer	1	85,000
	1	Research Plan. Spec	1	85,000
			<u>6</u>	<u>510,000</u>
<u>T. Bang Ulang</u>				
(Animal Husb. SS)	1	Pasture Agronomist	2	170,000
	1	Reprod/Physiologist	2	170,000
	1	Breeder	1	85,000
	1	Nutritionist	1	85,000
			<u>6</u>	<u>510,000</u>

<u>Institute</u>	<u>No.</u>	<u>Discipline</u>	<u>P.Y.</u>	<u>Cost</u>
<u>B' Baru</u>				
(Animal Disease SS)	1	Microbiologist	2	170,000
	1	Parasitologist	2	170,000
	1	Pathologist	2	170,000
			6	510,000
<u>Gondol, Bali</u>				
(Inland Fish SS)	1	Fisheries	2	170,000
		Total Long-Term	52	4,420,000
<u>S.T. Consultants:</u>	24 PM @ 8,600			206,000
				4,626,400

RMI Consultant Team

Position	Name of Expert	Length of time (months)	Starting Date	Planned end of assignment
1. Chief-of-Party	William L. Collier	42	March 28, 1982	Sept. 30, 1985
2. Administrative Specialist	Carl R. Fritz	24	April 1, 1982	March 30, 1984
3. Farming Systems Specialist	Jerry L. McIntosh	24	July 1, 1982	June 30, 1984
4. Postharvest Processing Specialist	Diane M. Barrett	24	April 7, 1983	March 31, 1985
5. Research Station Development Specialist	Roland E. Harwood	24	Aug. 28, 1982	Aug. 27, 1984
6. Soil Scientist MORIF	Igmidio T. Corpuz	36	July 1, 1982	June 30, 1985
7. Plant Pathologist MORIF	Anwar Rizvi	24	Jan 1, 1983	Dec. 31, 1984
8. Agricultural Economist MORIF	Fritz v. Fleckenstein	32	Jan. 24, 1983	Sept. 30, 1985
9. Rice Breeder BARID	Kevitt Brown	24	Jan. 23, 1983	Jan. 22, 1985
10. Pest Management Specialist BARIF	Bernardo Gabriel	24	July 1, 1983	June 30, 1985
11. Soil Scientist	John Bolton	2	March 10, 1983	May 12, 1983
12. Social Scientist BARIF	Greta Watson	24	March 1, 1983	April 30, 1985
13. Fish Nutritionist RIIF	Chorn Lim	24	May 1, 1983	April 30, 1985
14. Fish breeding Specialist	William Vanstone	24	Sept. 1, 1983	Aug. 31, 1985

Short-Term Specialists

Person Days

1. Roger Pullin	3.10.82	19
2. Ching-ming Kuo	3.10.82	9
3. M.F. Purnell	7.11.82	25
4. Roger V. Cuyno	12.3.82	8
5. H.M. Beachell	1.28.83	39
6. H.HJ. Nakasone	5.25.83	4
7. Arthur Mosher	9.19.83	<u>12</u>

Total Short-Term Person Days 116

Appendix III  
Table 3

Planned Construction in the AARP Based on the Project Paper

Site	Planned Construction (US \$)	Sources of Funds Construction 2/	
		GOI (US \$)	USAID (US \$)
<u>Region I</u>			
1. Bogor (Food)	3,727,740	2,109,155	1,618,585
2. Simpang Montrado/ Puace )			
3. Selakau (Industrial) )	460,400	206,494	199,905
<u>Region II</u>			
4. Banjarbaru (Food)	1,857,525	1,050,988	806,537
5. Banjarbaru (Animal Disease)	617,690	349,489	268,201
6. Handil Manarap (Food)	483,150	273,366	209,783
7. Lempake (Food)	197,450	111,717	85,732
8. Unit Tatas (Food)	176,650	99,948	76,701
9. Samarinda (Forestry)	665,850	376,737	289,112
<u>Region II</u>			
10. Maros (Food)	973,000	550,523	422,477
11. Sudiang Mandai (Forestry)	224,560	127,056	97,504
12. Kalase (Food)	263,950	149,342	114,607
13. Makariki (Food)	266,500	150,785	115,714
14. Makariki (Industrial)	485,750	274,837	210,912
15. Lanrang (Food)	162,600	91,999	70,601
16. Janeponto (Food)	236,850	134,009	102,840
17. Mariri (Food)	255,150	144,363	110,766
18. Bontobili (Food)	48,000	27,158	20,841
19. Lili/Kupang (Animal Product)	1,714,072	969,821	744,250
<b>T o t a l</b>	<b>12,816,887<sup>1/</sup></b>	<b>7,251,794 (56.58%)</b>	<b>5,565,093 (43.42%)</b>

<sup>1/</sup> Source : Project Paper  
 Total : US \$ 12,816,887  
 Gondol : US \$ 617,000 (in NAR II)  
 Total : US \$ 13,433,887

<sup>2/</sup> Construction: Percentage  
 GOI : 56.58  
 USAID: 43.42

Proposed Modification of GOI and USAID sharing for Cost of Construction

Alternatives	Sharing cost(s)		Total
	GOI	USAID	
1. Project Paper	7,251,794	5,565,093	12,816,887
2. Sharing 35/65 retro active to 1981/1982	4,485,910	8,330,977	12,816,887
3. Sharing 35/65 only for 1984/85 and 1985/86	5,635,559	7,181,328	12,816,887

\$1 = Rp. 970

Funding shortage (-) or savings (+) from the Project Paper  
in different construction alternatives

Project Paper/Alternatives	Contribution (\$)		Total Construction Cost **)	Saving (\$)		Total
	GOI	USAID		GOI	USAID	
Project Paper	7,251,794	5,565,093	12,816,887	-	-	-
Alternative I: All sites to be constructed						
1. GOI: USAID = 35 : 65 *)	5,986,967	7,833,936	13,820,899	+ 1,264,831	- 2,268,843	- 1,004,012
2. GOI: USAID = 57 : 43	8,015,777	5,805,122	13,820,899	- 763,983	- 240,029	- 1,004,012
Alternative II: Drop Forestry						
1. GOI: USAID = 35 : 65 *)	5,6765,320	7,255,169	12,930,489	+ 1,576,474	- 1,690,076	- 113,602
2. GOI: USAID = 57 : 43	7,509,242	5,422,247	12,930,489	- 256,448	+ 142,846	- 113,602
Alternative III: Drop Forestry, Kalasey and Oeaso						
1. GOI: USAID = 35 : 65 *)	5,409,255	6,761,049	12,170,304	+ 1,842,539	- 1,195,956	+ 646,583
2. GOI: USAID = 57 : 43	7,074,937	5,095,367	12,170,304	+ 176,857	+ 469,726	+ 646,583
Alternative VI: Drop Forestry, Kalasey, Oeaso Lili and Mariri						
1. GOI: USAID = 35 : 65 *)	4,964,478	5,935,036	10,899,514	+ 2,287,316	- 369,943	+ 1,917,373
2. GOI: USAID = 57 : 43	6,350,588	4,548,926	10,899,514	+ 901,206	+ 1,016,167	+ 1,917,373
Alternative V: Drop Forestry, Mariri, Makariki (FC) and Lili (AP)						
1. GOI: USAID = 35 : 65 *)	5,108,501	6,202,507	11,311,009	+ 2,143,292	- 637,414	+ 1,505,878
2. GOI: USAID = 57 : 43	6,585,139	4,725,820	11,311,009	+ 666,655	+ 839,273	+ 1,505,878

\*) Only for 1984/85 and 1985/86.

\*\*) Excluding Contingency and Inflation.



LIST OF AAPP/IMI PARTICIPANTS UP TO SEPTEMBER 30, 1983

No.	NAME	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTIONS/COUNTRY	DURATION
1	2	3	4	5	6
<u>DEPARTURES</u>					
1.	Djayeng Sumangat	POPPI/Bogor	Determination and Prevention Post Harvest Food Losses	Idaho Univ. USA	Sept. 4 - Oct. 15, 1983
2.	Dudung Muhidin	BOPIF/Bogor	do	do	do
3.	Mahrta Miliis	BAPIF/Banjarmasin	Integrated Pest	IFRI, Philippines	Aug. 15 - Nov. 25, 1983
<u>RETURNERS</u>					
4.	Nadjib Eber	MORIF/Maros	Micro Computer	FAPMAP, Bangkok	Augt. 8 - Augt 26, 1983
5.	Nadidjah Amin Dahlan	MORIF/Maros	do	do	do
6.	Lis Swansyah	SUPIF/Sukamandi	Water Management	IFRI, Philippines	Augt. 8 - Sept. 26, 1983
7.	Sri Sumatri	PIIF/Bogor	Prackish Water Aquaculture Institutes, Keelung, Taiwan	Taiwan Fisheries Research	July 9 - Sept. 9, 1983
8.	Asmin Ismail	PIIF/Jakart	do	do	do
9.	Agus Priyono	PIIF/Bali	do	do	do
10.	Surpiyono Eko Wardoyo	PIIF/Maros	do	do	do
11.	Tadjudin Daulay	PIIF/Bogor	do	do	do
12.	Tridjoko	PIIF/Bali	do	do	do
13.	Waluyo Subani	PIME/Jakarta	Library Training	International Center for Living Aquatic Res. Mgt. in Manila	June 6 - July 6, 1983
14.	Endang Pratiwi	CPIF/Jakarta	do	do	do
15.	Packmat	MAIS/Bogor	do	do	do
16.	Tuti Sulasmi	MAIS/Bogor	do	do	do
17.	Novenny A. Bahyudi	PIIF/Bogor	Aquaculture Tech. Prog.	Auburn Univ. Alabama, USA	March 18 - July 15, 1983

1	2	3	4	5	6
18.	Purwito Martosubroto	PRIF/Jakarta	R & D Mgt. Consultancy Trg.	Denver Res. Inst. Denver Colorado, USA	March 23 - July 1, 1983
19.	Ati Sri Harfat	LEPIH/Lembang	Elisa technique	American Type Culture Center in Pockville Maryland, USA	Feb. 20 - June 9, 1983
20.	Nani Suparni	LERIH/Lembang	Interdisciplinary research	Asian Vegetable Research and Dev. Center, Taiwan	Nov. 7 - May 7, 1983
21.	Etti Purwati	do	do	do	do
22.	Yoyo Sulyo	do	do	do	do
23.	R.E. Suriaatmadja	do	do	do	do
24.	Kosasih Kadir	FPRI/Bogor	Woodworking & Drying & Research Proj. Planning & Evaluation	Forest Products P & D Inst. Los Panos, Philippines	March 7 - April 7, 1983
25.	Mas Ismunadji	PORIF/Bogor	Spec. Trg. in Upland Crops' Physiology	Asian Vegetable Res. & Dev. Center, Taiwan	Nov. 11 - December 1, 1982
26.	Mochamad Sirdan	CAPP/Jakarta	Project Preparation & Evaluation in Ag. and Rural Development	Statistical, Economic & Social Research & Trg. Center for Islamic Countries, Turkey	Oct. 18 - Nov. 12, 1982
27.	Syafril Lamsayun	CAPP/Jakarta	Procurement Training	Trans Centry Corp., USA	Oct. 15 - Nov. 14, 1982
28.	Abdussamad Syahrani	BAFIF/Banjarmasin	do	do	do
29.	A.M. Lanonangi	MOPIF/Mares	do	do	do
30.	Marsito Butomo	CAO/Jakarta	Aeric. Proj. Planning & Analysis, Section II	USDA, Washington, DC	Sept. 7 - Nov. 11, 1982
31.	Mohamad Mansur	CPIIC/Bogor	do	do	do
32.	Rafni Zahara Syurki	CAPP/Jakarta	do	do	do
33.	Wahyadi Sosrowardoyo	CRIFI/Jakarta	Applic. and Diffusion of Agri. Research Result to the Community Level	Iowa State Univ. USA	Aug. 25 - Oct. 1, 1982
34.	Sofyan Ilyas	RIFT/Jakarta	Determination & Prevention of Post Harvest Food Losses	Cornell Univ. USA	Sept. 6 - Oct. 13, 1983
35.	Achmad Widayat	CAO/Jakarta	Plant Quarantine	USDA, Washington, DC	July 19 - Sept. 17, 1982

1	2	3	4	5	6
36.	Dewa M. Tantera	BORIF/Bogor	Integrated Pest. Mgt.	Purdue Univ. USA	June 9 - July 23, 1982
37.	Sudjarto	CRIC/Bogor	Agric. Research Method	Kansas State Univ. USA	May 31 - July 23, 1982
38.	Lalu Suharno	BOPIF/Bogor	do	do	do
39.	Siti Suffiani	MORIF/Maros	do	do	do
40.	N. Saleh Pandang	MORIF/Maros	do	do	do
41.	Wafiah Akib	MORIF/Maros	do	do	do
42.	Tambak Manurung	CIRJAS/Bogor	do	do	do
43.	Didi Suardi	CRIFC/Bogor	do	do	do
44.	Yono C. Rahardjo	CRIAS/Bogor	do	do	do
45.	Budhoyo Sukotjo	Prof. and Proj. From Unit Jakarta	Agric. Research Mgt.	Washington, DC and Hawaii, USA	June 18 - 21, 1982
46.	Tambunan SM Manungkol	BOPIF/Bogor	Estab. Data Bases & Analy. Syst. for Econ. Decision Making in Agric.	Mexico	
47.	Bachmat Kartapradja	LERIF/Lembang	Veg. Crop. Prod. and Market	Rutgers Univ. USA	July 12 - Aug. 20, 1982
48.	Artaty Wijono	CRIFI/Jakarta	Ag. Comm. & Med. Strategy	Iowa State Univ. USA	July 12 - Aug. 20, 1982
49.	Abisano	TAFJI/Tg. Karang	do	do	do
50.	Adi Widjono	CRIFC/Bogor	do	do	do
51.	T.H. Mangunsong	Reg. Ag. Quarant/ Jakarta	do	do	do
52.	Fathan Muhadjir	BORIF/Bogor	Wheat & Maize Phys.	CIMMYT, Mexico City	July 20 - Aug. 25, 1982
53.	Nurlaila Hasbullah	BARIF/Banjarmasin	Rice Production	IRRI, Philippines	July 1 - Aug. 27, 1982
54.	Nurul Aida	BARIF/Banjarmasin	do	do	do
55.	Achmad Dimiyati	BOPIF/Bogor	Tech. & Econ. Aspects of Soybean Production	Univ. Illinois, USA	May 10 - Aug. 6, 1982
<u>TRAINING OUTSIDE RMI CONTRACT:</u>					
56.	Achmed Sarnita	RIIF/Bogor	Study Milkfish Cultiv.	SEAFDEC/Philippines Inst. of Marine Biology and Gulf Coastal Fisheries Center/USA	July 5 - Aug. 15, 1981

1	2	3	4	5	6
57.	Haniah	do	do	do	do
58.	Suningrat	NLAS/Bogor	Regional Micrographic T. Course	SEARCA/Philippines	Jan. 10 - 23, 1982
59.	Sumardi Dahlan	do	do	do	do
60.	Azis Arifin	LERIF/Lembang	The Decimal Long of Cip. Comparative Study for Tuber Crops Research Comparative for Wheat Res.	Peru CIAT/Columbia CIMMYT/Mexico	Fe. 22 - March, 1982 Feb. 29 - March 1, 1982 March 3-4, 1982
61.	Surrahmat Kusumo	CRIFC/Bogor	do	do	do
62.	Sundaru	BORIF/Bogor	Management Agric. Organ	USDA/USA	May 17 - July 9, 1982

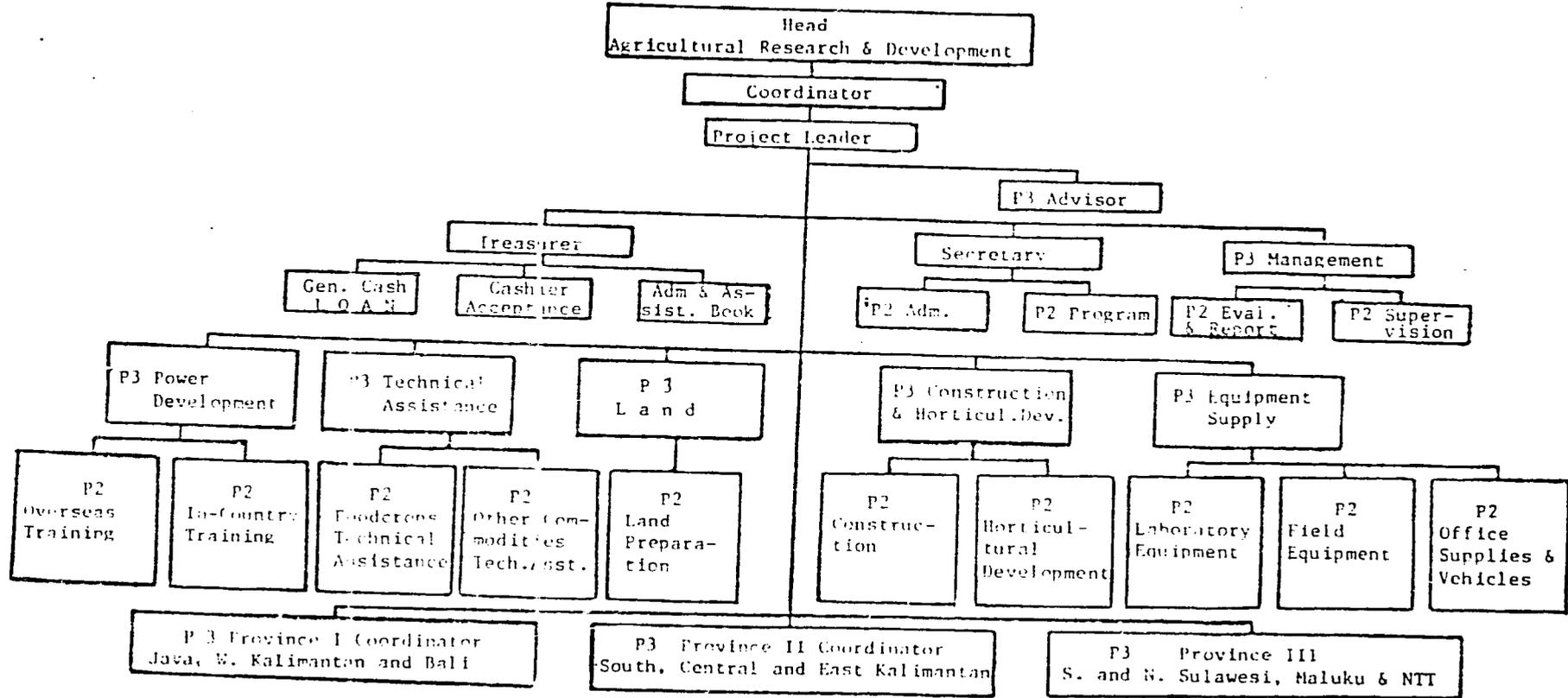
ORGANIZATION CHART

AGRICULTURAL RESEARCH & DEVELOPMENT PROJECT, RI-USAID

1983/1984

Appendix IV

Figure 1



Appendix IV  
Figure 2

PROJECT STAFF ORGANIZATION FY 1983/1984

- |   |                                |
|---|--------------------------------|
| 1. Coordinator/Advisor                    | : Dr. Ibrahim Manwan           |
| 2. Project Leader                         | : Mr. H. Achmad Abdullah B.Sc. |
|   | : Prof. Dr. DA. Lubis          |
|   | : Prof. Dr. Tanjung A.         |
|   | : Dr. Joko Budianto            |
|   | : Ir. Sayoso M.Sc.             |
|   | : Ir. Paransih Isbagio         |
|   | : Ir. Angkapradipta            |
| 3. Project Secretary                      | : Drs. Widadi                  |
| 4. Project Treasurer                      | : Mr. Achmad Hanafiah          |
| 5. P3 Monitoring & Evaluation             | : Ir. Hafni Zahara             |
| 6. P3 Power Development                   | : (still open)                 |
| 7. P3 Technical Assistance                | : Mr. Baga Kalie, B.Sc.        |
| 8. P3 Land Acquisition &<br>Certification | : Mr. Soegiono, Sm.Hk.         |
| 9. P3 Construction and<br>Farm Dev.       | : Achmad Soebardjo S.H.        |
| 10. P3 Equipment                          | : Ir. Syafril Lamsayun         |
| 11. Province I Coordinator                | : Dr. B.H. Siwi                |
| 12. Province II Coordinator               | : Dr. H. Anwarhan              |

Activities of the AARD/AARP Specialists in  
Seminars, Workshops and other Activities

No. (1)	Name of Experts (2)	Specialty (3)	Seminar/Workshop (4)	Paper Presented (5)
1.	William L. Collier	Chief-of-Party	<p data-bbox="950 472 1310 524">AARD Research Consultation Meeting, Ambon, May 1983</p> <p data-bbox="950 870 1310 922">Fisheries Research Meeting, Bogor, August 2, 1982</p> <p data-bbox="950 948 1310 1019">International Conference of Agricultural Economists, 8-1982.</p> <p data-bbox="950 1052 1310 1104">Seminar on Pembangunan Manusia di Pedesaan 8-1982.</p> <p data-bbox="950 1130 1310 1235">Conference on Selected Issues in Agricultural Research, (INSAR and IFARD) Jakarta, 10-1982.</p>	<p data-bbox="1380 529 1915 600">RMI Administration of AARP Participant Training Function (With Carl R. Fritz). printed in May 1982 RMI monthly report.</p> <p data-bbox="1380 634 1873 706">Progress Report on Filling Long Term Experts Positions, memo to Achmad Abdullah of July 16, 1982.</p> <p data-bbox="1380 740 1873 841">Research proposals on Rainfed Agriculture on On-Farm Water Management (together with Jerry McIntosh and Pusgram staff).</p>

(1)	(2)	(3)	(4)	(5)
			Made presentation at Workshop on Social and Economic Aspects of Fisheries, 11-1982.	
			Made presentation at AARP Annual Review Meeting, USSU, 12-1982.	
			AARD Workshop on Research Management, Bali, 1 - 1982.	The Applied Agricultural Research Project from the View Point of the Technical Experts Chief-of-Party, 1-1982.
			AARD and Ford Foundation Workshop on Intensive Agriculture and Sustainability, Malang, 1 - 1983.	
				Assisted in proposal for establishing a center of excellence for marine fisheries, 3 - 1983.
				Assisted in project proposals for Rainfed Agriculture in NTT and NTB, and Opening of Tidal Swamps for Transmigration, 5 - 1983.
			International Workshop on Promoting Research on Tropical Fruit Crops, Jakarta, 6 - 1983.	

(1)	(2)	(3)	(4)	(5)
2	Carl R. Fritz	Administrative Specialist	<p>D.G. Review of AARP, 6-1983.</p> <p>AARP Negotiations with Connel Brothers Company for procurement Services Agent (PSA) contract, Bogor, 7 - 1983.</p> <p>Ford Foundation sponsored Workshop on the Sustainable Intensification of Agriculture in Tidal Swamps-lands, Banjarmasin, 7-1983.</p> <p>AARP review by Project Leader, Cipanas, 7-1983.</p> <p>Conference on Management of Agricultural Research, Malino, 9 - 1983.</p>	<p>Assisted Dr. Manwan in developing project proposal for Sustained Intensification of Agriculture, 6 - 1983.</p> <p>Procedures Guidance for AARP/RMI Experts.</p> <p>Summary of Short Term Training Program Available for AARP Participants in 1983-1984, as of August 1982.</p> <p>Terms of Reference for Comparative Study of Agricultural Research Management Systems, 11 - 1982.</p>

(1)	(2)	(3)	(4)	(5)
			<p>Made presentation at AARP Annual Review Meeting, USSU, 12 - 1982.</p> <p>DG Review of AARP, Bogor, 6 - 1983.</p> <p>AARP negotiations with Connel Brothers Company for PSA contract, 7 - 1983.</p> <p>AARP review by Project Leader Cipanas 7 - 1983.</p>	<p>Wrote report on sessions</p>
3	Ching-min; Kuo and Roger S.V. Pullin	Short Term Fisheries Consultant		Future Development of Aquaculture and Inland Fisheries in Indonesia, May 1982.
4	Igmidio T. Corpuz	Soil Scientist, MORIF	<p>MORIF Seminar, 8 - 1982</p> <p>MOPIF Seminar, 10 - 1982</p>	<p>Farming System Research in Support of the Transmigration Program at Kendari, Southeast Sulawesi.</p> <p>Correcting yields of Experiments Partially Damaged by Animals and with Uneven Population.</p> <p>Efficiency of Nitrogen Application in Rainfed Wetland Rice at Bonton, Maros, South Sulawesi.</p> <p>Evaluation of the Fertility Status of Wetland Soil in Southeast Sulawesi under Actual Field Conditions.</p> <p>Yield Response of IR36 and IR 42 to Nitrogen Application under Upland Condition.</p>

(1)	(2)	(3)	(4)	(5)
			Weekly MORIF Seminar	Yield Response of Corn to Methods of Fertilizer Application.
			Meeting of Local Agricultural Extension Workers, Members of BINAS Technical Committee, South Sulawesi and Local Farmers, Jeneponto, 11-1982	Pice Fertilization and Long Term Fertilizer Experiments in Sulawesi (with C. Momuat).
			INSFFER Site Visit Tour, Maros, 1-1983. Six background papers distributed.	Lime, Nitrogen Application and Inoculation Study on Soybean, Maros 19 (with AMP DG. Mattiro, and Arbi Mapp)
				Efficiency of Phosphorous Fertilizer and Lime on the Growth and Performance of Upland Rice, Variety IR36. Purinld 1982. (with C.J.S. Mamuat and P. Alik).
				Long Term Effects on NPK Fertilizer Applied Singly or in Combination on Rice Yields in Alluvial Soils in South Sulawesi, Indonesia (with CH.J.S. Momuat, E.O. Momuat, and C.P. Mamoril).
				Nitrogen Fertilizer Efficiency in Rainfed Wetland Rice, Takalar 1982 WS (with A. Buntan and CH.J.S. Momuat).
				Efficiency of Nitrogen Fertilizer Application in Rainfed Wetland Rice at Bonton, Maros, South Sulawesi, WS 1982 (with M. Rauf and R.Le. Cerff).

(1)	(2)	(3)	(4)	(5)
			<p>Seminar on Insect Pests of Mungbean and Soybean, MORIF, 3 - 1982.</p> <p>AARP/IRRI Collaborative Meeting, Ujung Pandang, 3 - 1983.</p> <p>Symposium on Sulfur in Southeast and South Pacific, Ciawi, 5 - 1983.</p>	<p>Correcting Rice Yields Partially Damaged by Animals, A Proposal</p> <p>A Note on the Use of Urea Supergranules.</p> <p>Soil Research Priorities in Sulawesi.</p> <p>Soil Fertility Evaluation of Lanrang Soil for Soybeans, a project outline, 3-1983.</p> <p>Minimizing Efficiency of Nitrogen Application, instruction for harvesting and processing yield, 3-1983.</p> <p>Research proposal for Azolla as a Nitrogen Source for Rice, 4-1983.</p> <p>Assisted in designing Sulfur Fertilization Experiment in a farmer's field, 4 - 1983.</p> <p>Assisted with research proposals of Soil and Soil Fertility and Agronomy Departments, 4 - 1983.</p> <p>Residual Effect of Three Sources of Nitrogen at Three Rates of Application, 6 - 1983.</p>

(1)	(2)	(3)	(4)	(5)
6	Jerry McIntosh	Cropping Systems Specialist	<p data-bbox="984 334 1384 431">Presented seminar on Solving and Preventing Sulfur Deficiency Problem, MORIF, 7 - 1983.</p> <p data-bbox="984 464 1384 513">USAID Seminar on Water Management, 8 - 1982.</p> <p data-bbox="984 545 1384 594">AARD Seminar on Agricultural Research in Brazil, 8-1982.</p> <p data-bbox="984 626 1384 724">Planning Session of Indonesian Cropping Systems Working Group, Sept.30 - Oct.2, 1982 Cibogo.</p> <p data-bbox="984 886 1384 951">Asian Cropping Systems Working Group Meeting, Chiang Mai, Thailand, 10-1982.</p> <p data-bbox="984 1179 1384 1243">AAPD/IRRI Meetings on Collaborative Research, 10 - 1982.</p>	<p data-bbox="1415 334 1913 415">Strategy in Solving and Preventing Sulfur Deficiency Problem in Wetland Areas, A Proposal, 7 - 1983.</p> <p data-bbox="1415 756 1924 854">Cropping Systems and Upland Rice - Asia (with Drs. Harahap and Siwi) for presentation at Upland Rice Workshop. Bowake, Ivory Coast, 10- 1982.</p> <p data-bbox="1415 886 1913 967">Helped prepare papers for Indonesian participation at Asian Cropping Systems Working Group Meeting.</p> <p data-bbox="1415 1000 1974 1049">Assisted Dr. Sumarno in preparing project proposal for Legume Breeding (IDRC).</p> <p data-bbox="1415 1081 1935 1179">Lamtorozation of the contiguous killy and sparsely populated areas of Maros, Soppeng and Bone Kabupatens of South Sulawesi, 9 - 1982.</p>

(1)	(2)	(3)	(4)	(5)
			<p>American Societies of Agronomy Meeting, California USA, 12-1982.</p> <p>AARD and Ford Foundation Workshop on Stability and Sustainability of Farming Systems, Malang, 1-1983.</p> <p>AARD/IRRI Collaboration Meeting on Rice Research, Maros, 3-1983.</p> <p>IRRI Crop, Livestock Farming Systems Meeting, 4-1983.</p> <p>Seminars during 5-1983:</p> <ol style="list-style-type: none"><li>1) Lamtoro Research in NTT-FDP Project.</li><li>2) Hama Gardens Research AVRDC/UNICEF.</li><li>3) Imperata Management, Rockefeller Foundation.</li></ol>	<p>Cropping Systems Research, 1973 - 83 (11 - 1982).</p> <p>Watershed Assessment Report Farming Systems Evaluation and Development, 4-1983.</p> <p>Technical Report, Farming Systems Research and Development, Upper River Watershed Assessment, 4-1983.</p> <p>Assisted with proposal for Crop/Livestock Systems Research Project, 5-1983.</p>

(1)	(2)	(3)	(4)	(5)
			<p>Sixth Cropping Systems Workshop, 6-1983.</p>	<p>Paper for Soybean Symposium in Japan with Mr. Juber, 6-1983. Symposium 9-1983</p> <p>Position paper on Liming in Indonesia, 7, -1983.</p> <p>Overview of Cropping/Farming Systems Research, 7-1983.</p> <p>Station Management Training, 10-1983.</p>
6.	Roland E. Harwood	Research Station Development Specialist	<p>Made presentation at AARP Annual Review Meeting, USSU, 12-1982.</p> <p>DG Review of AARP, Bogor, 6-1983.</p> <p>AARP negotiations with Connel Brothers Company for PSA contract, Bogor,</p> <p>AARP review by Project Leader, Cipanas, 7-1983.</p>	<p>Experiment Station Operations Management, 5-1983.</p>
7.	Chhorn Lim	Milkfish Nutritionist	<p>Presented lecture/seminar on Fish Nutrition and Aquaculture, Bogor, 6-1983.</p>	<p>Brief Description of Research Activities in Nutrition and Feed Development, 10-1982, during preliminary visit to project.</p> <p>Recommendation on the Quality Control of Fish Feed, 10-1983.</p> <p>Assisted in technical paper on Optimum Level of Vitamin Premix in Common Carp Diet. 6-1983, for presentation at Singapore, Symposium on Fin Fish Nutrition, 8-1983.</p>

(1)	(2)	(3)	(4)	(5)
8.	James C. Myers	Training	Made presentation at AARP Annual Review Meeting, OSSU, 12-1982.	
9.	Anwar Rizvi	Plant Pathologist, MORIF	<p>Presented Seminar on Rice Tungro Virus, 3-1983.</p> <p>AARD/IRRI Collaborative Meeting, Ujung Pandang, 3-1983.</p> <p>Seminar on Insect Pests of Mungbean and Soybean, MORIF, 3-1983.</p> <p>Workshop on Rice Pests and Diseases, CRIFC, 3-1983.</p> <p>Seminar on CRIAT research activities, Bogor, 3-1983.</p> <p>MORIF discussions on 1983-1984 research activities.</p>	<p>Assisted with MORIF pathology research proposals for 1983-1984.</p> <p>Presented proposals for</p> <ol style="list-style-type: none"> <li>1) Effect of insecticides on spread of rice tungro virus (RTV) using breeding lines with different resistant gene background and control of green leafhopper.</li> <li>2) Development of improved field and greenhouse screening methods to evaluate rice varieties/breeding lines for resistance to RTV.</li> </ol>

(1)	(2)	(3)	(4)	(5)
			<p>With Mr. Samuel, conducted training session in plant virology, MORIF, 6-1983.</p> <p>Participated in weekly, MORIF seminars, and assisted in organizing Pathology Department presentations.</p> <p>Presented seminar on the Lates Method for Detecting Plant Viruses, MORIF, 7-1983.</p> <p>Presented seminar on Elisa, an advanced ecological technique to detect plant viruses, 8-1983.</p>	<p>3) Effect of plant dates to identify rice breeding lines/ varieties with minimal incidence of PTV at different locations in Sulawesi.</p> <p>Assisted S. Sama in drafting paper on Control of Rice Tungro Virus and its vector green leafhopper, <u>Nephotattix virescens</u> in South Sulawesi, 6-1983.</p>
10.	John Bolton	Soil Scientist, BARIF	Symposium on Computer Modeling of Land Potentials, Bogor, 3-1983.	
11.	Fritz von Fleckenstein	Agricultural Economist, MORIF.	<p>Research Planning Seminar, MORIF, 4-1983.</p> <p>Presented seminar on the Art of Making a Good Table, MORIF, 7-1983.</p>	<p>Current Fieldwork Practices of Agro-Economist Department and Recommendations for Improvement, 3-1983.</p> <p>With H. Dahlan, proposal for pilot study of small group of farmers in Maros area to demonstrate methods used in an intensive whole farm study.</p>

(1)	(2)	(3)	(4)	(5)
12.	Greta Watson	Agricultural/ Economist Social Scientist, BARIF	<p>Presented seminar in Water Conditions in Coastal Wetlands in South and Central Kalimantan, BARIF, 4-1983.</p> <p>Presented three seminars at BARIF, 5-1983:</p> <ol style="list-style-type: none"> <li>1) Agroecosystem theory and methods</li> <li>2) Research methodology for tidal swamp survey</li> <li>3) Construction of graphs and maps.</li> </ol> <p>Presented seminars on Report Writing and Organization, 4-1983.</p> <p>Ford Foundation Workshop on Sustainable Intensification of Agriculture in Tidal Swampland, Banjarmasin, 7-1983.</p> <p>Conference on Women's Role in Rice Farming Systems, IRRI, Los Baños, 9-1983.</p> <p>BARIF Research Review of Last five Years and Plans for 1984-1990, 9-1983.</p>	<p>Agro-Ecosystem Pre Workshop Survey for Tidal Swamp Workshop: Survey II of Tamban Lupak and Lupak Dalam, Central Kalimantan, 6-1983.</p> <p>Women's Role in Improvement of Rice Farming Systems in Tidal Swamplands.</p> <p>Preliminary proposals in agroeconomic, farming systems, and agroecological research, 9-83 (Husband Tom Gula prepared proposal on rate control).</p> <p>Evaluation of and Proposal for Technology Transfer AARP-BARIF, 9-83.</p>



(1)	(2)	(3)	(4)	(5)
14.	Kevitt Brown	Deep Water Rice Breeder BARIF	<p>Deepwater Rice Seminar, Banjarmasin, 5-1983.</p> <p>Monthly Rice Breeding Meetings, BARIF</p> <p>Workshop on Sustainable Intensification of Agriculture in Tidal Swamplands, Banjarmasin, 7-1983.</p> <p>BARIF Review of Research, presented plant breeding plans, 9-1983.</p>	<p>Helped with final report.</p> <p>Proposals for tidal swamp research, 7-1983.</p> <p>Eight proposals for varietal selection, with Dr. Harahap, G. Luntungan and 4 crop breeder at BORIF, 8-1983.</p>
15.	Bernade Gabriel	Entomologist, BARIF	<p>Workshop on Sustainable Intensification of Agriculture in Tidal Swamplands, Banjarmasin, 7-1983.</p> <p>BARIF Research Review of Past Five Years and Plans for 1984-1990, 9-1983.</p>	<p>Research proposals on assessment of Loss due to Insect Pests in Tidal Swampland and Establishment of Economic Thresholds for Major Pests, 9-1983.</p>

RESEARCH INSTITUTIONS DEVELOPMENT,  
AGENCY FOR AGRICULTURAL RESEARCH AND DEVELOPMENT

Appendix IV  
Table 2

No.	NAME	STATUS	LOCATION	DONOR		
				CONSTR.	E.Q.	T.A.
<u>I. Research Center For Food Crops</u>						
1.	Research Institute for Food Crops, Bogor.	RI	West Java	SAR, AARP	JICA	JICA, AARP USAD/IRRI NAR-II
2.	Research Institute for Food Crops, Sukamandi	RI	West Java	NAR-I	NAR-I	
3.	Research Institute for Horticulture, Lembang	RI	West Java	NAR-I	NAR-I	
4.	Research Institute for Food Crops, Malang	RI	East Java	-	ATA 272 ( Bld )	ATA 272 ( Bld )
5.	Experimental Farm for Food Crops, Kendal Payak	EF	East Java	NAR-II	-	-
6.	Research Institute for Food Crops, Banjarbaru	RI	South Kalimantan	AARP	AARP	AARP
7.	Research Station for Food Crops, Handil Manarap	RS	South Kalimantan	AARP	AARP	-
8.	Experimental Farm for Food Crops, Unit Tatas	EF	Central Kalimantan	AARP	AARP	-
9.	Experimental Farm for Food Crops, Lempake	EF	East Kalimantan	AARP	AARP	-
10.	Research Institute for Food Crops, Maros	RI	South Sulawesi	AARP	AARP	AARP/USAID/ IRRI
11.	Research Station for Food Crops, Mariri	RS	South Sulawesi	AARP	AARP	-
12.	Research Station for Food Crops, Janeponto	RS	South Sulawesi	AARP	AARP	-
13.	Experimental Farm for Food Crops, Bontobili	EF	South Sulawesi	AARP	AARP	-
14.	Research Station for Food Crops, Lamrang	RS	South Sulawesi	AARP	AARP	-

No	N A M E	STATUS	LOCATION	D O M O R		
				CONSTR.	E.Q.	T.A.
15	Research Station for Food Crops, Kalasey	RS	North Sulawesi	AARP	AARP	-
16.	Research Station for Food Crops, Makariki	RS	Ambon, Maluku	AARP	AARP	-
17.	Research Station for Food Crops, Lili	RS	Kupang, East Nusa Tenggara	AARP	AARP	-
18.	Research Institute for Food Crops, Sukarami	RI	West Sumatera	SAR	SAR	-
19.	Research Station for Food Crops, Sitiung	RS	West Sumatera	SAR	SAR	-
20.	Experimental Farm for Food Crops, Rambatan	EF	West Sumatera	SAR	-	-
21.	Research Station for Food Crops, Solok	RS	West Sumatera	NAR-II	NAR-II	-
22.	Experimental Farm for Food Crops, Lampineung	EF	A c e h	SAR	-	-
23.	Research Station for Food Crops, Pasamiring	RS	North Sumatera	SAR	SAR	-
24.	Research Station for Food Crops, Berastagi	RS	North Sumatera	NAR-II	NAR-II	-
25.	Experimental Farm for Food Crops, Puding	EF	Jambi	SAR	-	-
26.	Research Station for Food Crops, Kayuagung	RS	South Sumatera	SAR	SAR	-
27.	Experimental Farm for Food Crops, Tamanbogo	EF	South Sumatera	SAR	-	-
<u>II. Research Center for Industrial Crops</u>						
1.	Research Institute for Industrial Crops, Bogor	RI	West Java	NAR-II	NAR-II	NAR-II
2.	Research Station for Industrial Crops, Natar	RS	L a m p u n g	NAR-II	NAR-II	ATA 221 (E1d)

No	NAME	STATUS	LOCATION	DONOR		
				CONSTR.	E.Q.	T.A.
3.	Research Institute for Industrial Crops, Malang	RI	East Java	NAR-II	NAR-II	NAR-II
4.	Research Institute for Industrial Crops, Manado	RI	North Sulawesi	NAR-II	NAR-II	NAR-II, FAO
5.	Experimental Farm for Industrial Crops, Kayuwatu	EP	North Sulawesi	NAR-II	-	-
6.	Experimental Farm for Industrial Crops, Kima Atas	EP	North Sulawesi	NAR-II	-	-
7.	Experimental Farm for Industrial Crops, Pandu	EP	North Sumatera	NAR-II	-	-
8.	Research Station for Industrial Crops, Simpang Montrad dan Sekau	RS	West Kalimantan	AARP	AARP	-
9.	Research Station for Industrial Crops, Makariki	RS	Ambon, Maluku	AARP	AARP	-
<u>III. Research Center For Estate Crops</u>						
1.	Research Institute for Estate Crops, Sungai Putih	RI	North Sumatera	NAR-I	NAR-I	-
2.	Research Institute for Estate Crops, Sembawa	RI	South Sumatera	NAR-I	NAR-I	-
3.	Research Station for Estate Crops, Sumber Asin	RS	East Java	NAR-II	NAR-II	NAR-II
<u>IV. Research Center for Animal Husbandry</u>						
1.	Research Institute for Animal Husbandry, Ciawi	RI	West Java	ATA 35 (Ausie)	ATA 35 (Ausie)	ATA 35 (Ausie)
2.	Research Station for Animal Husbandry, Sungai Putih	RS	North Sumatera	NAR-II	NAR-II	-
3.	Research Institute for Animal Health, Bogor	RI	West Java	NAR-II	NAR-II	ATA 219 (Australia) ATA 244

No	NAME	STATUS	LOCATION	DONOR		
				CONSTR.	E.Q.	T.A.
4.	Research Station for Animal Health, Banjarbaru	RS	South Kalimantan	AARP	AARP	AARP
5.	Research Station for Animal Husbandry, Kupang	RS	East Nusa Tenggara	AARP	AARP	-
<u>V. Research Center For Fisheries</u>						
1.	Research Institute for Fish Technology	RI	J a k a r t a	NAR-II	NAR-II	-
2.	Research Station for Inland Fisheries, Cibinong.	RS	West Java	NAR-II	NAR-II	-
3.	Research Station for Inland Fisheries, Gondol	RS	B a l i	NAR-II	AARP	AARP
4.	Inland Fisheries Pond, Pajarakan	RF	B a l i	NAR-II	-	-
5.	Research Station for Fish Technology, Ambon	RS	Ambon, Maluku	NAR-II	NAR-II	-
6.	Research Station for Inland Fisheries, Maros	RS	South Sulawesi	NAR-II	-	-
7.	Research Institute for Marine Fisheries	RI	J a k a r t a	-	-	NAR-II
<u>VI. Research Center For Agro-Economics</u>						
1.	Center for Agro Economic Research		B o g o r	-	-	NAR-II
<u>VII. National Library for Agricultural Sciences</u>						
1.	National Library for Agricultural Sciences		B o g o r	-	-	NAR-II

Legend:

CONSTR: Construction  
EQ: Equipment  
TA: Technical Assistance  
RI: Research Institute  
RS: Research Station  
EF: Experimental Farm  
JICA: Japanese International Cooperation Agency  
SAR: Sumatera Agricultural Research Project  
NAR-II: National Agricultural Research Project  
AARP: Applied Agricultural Research Project  
ATA (Bld): Dutch aid  
ATA (ausie): Australian aid

List of Expatriates as Assistants to the  
Ford Crop Research and Development Institute - Bogor  
For the period of 1983/1984

Number	Name	Nationality	Specialties	Length of Service	Location	Remarks
<u>I.F.R.I. PROJECT</u>						
1.	Dr. Walter C. Tappan	American	Liaison Scientist	1983 - 1985	Bogor	As of August 1983
2.	Mrs. Lucy Edith Tappan	American	-	1983 - 1985	Bogor	Spouse
3.	Dr. J.L. McIntosh	American	Agronomist	1982 - 1984	Bogor	
4.	Mrs. Beverly June McIntosh	American	-	1982 - 1984	Bogor	Spouse
<u>JICA PROJECT (ATA-218)</u>						
1.	Dr. Setsuro Toda	Japanese	Liaison Scientist	1980 - 1983	Bogor	Returned to post 10/10/83
2.	Dr. Yoshio Hojo	Japanese	Upland Cultivation	1981 - 1983	Bogor	Returned to post 10/10/83
3.	Dr. Hiroshi Kobayashi	Japanese	Pice Agronomist	1981 - 1983	Bogor	Returned to post 10/10/83
4.	Dr. Atsushi Haito	Japanese	Entomology	1981 - 1983	Bogor	Returned to post 10/10/83
5.	Dr. Makoto Nakashimada	Japanese	Plant Physiology	1981 - 1983	Bogor	Returned to post 10/10/83
6.	Dr. Yoshimune Nihei	Japanese	Coordinator	1981 - 1983	Bogor	Returned to post 10/10/83
7.	Dr. Nobuyoshi Harizawa	Japanese	Plant Pathology	1981 - 1983	Bogor	Extended to January 1984
8.	Dr. Izumiya Youchi	Japanese	Liaison Scientist	1983 - 1984	Bogor	As of November 1983
9.	Dr. Tomio Yazawa	Japanese	Plant Physiology	1983 - 1984	Bogor	As of October 1983
10.	Dr. Saneyuki Okuda	Japanese	Upland Crop Cultivation	1983 - 1985	Bogor	As of October 1983
11.	Mrs. Keiko Okuda	Japanese	Upland Crop Cultivation	1983 - 1985	Bogor	Spouse
12.	Mrs. Yoyoi Okuda	Japanese	Upland Crop Cultivation	1983 - 1985	Bogor	Daughter
<u>MARIF PROJECT (ATA-272)</u>						
1.	Dr. E.C. Ereenen	Dutch	Team Leader	1982 - 1984	Malang	As of Mei 1983
2.	Dr. Ch. Van Santen	Dutch	Agro Economic	1983 - 1985	Malang	
3.	Ir. Ing JF Van Staveren	Dutch	Agronomist	1983 - 1986	Malang	
4.	Ir. D.J. Schild	Dutch	Horticulture	1983 - 1984	Malang	
5.	Ir. F.G. Van den Bosch	Dutch	Plant Breeding Hort.	1981 - 1985	Malang	
6.	Ir. O.J. Laumans	Dutch	Data Processing	1983 - 1985	Malang	
7.	Dr. H. Vermulee	Dutch	Agriculture	1982 - 1983	Malang	
8.	Dr. J.S. Semeonsma	Dutch	Plant Breeding	1983 - 1985	Malang	Returned to post 08/83
<u>SUMATRA AGRICULTURE RESEARCH PROJECT (SAR)</u>						
1.	Dr. Kenneth G. Rachle	American	Agr. Scientist	1982 - 1984	Padang	As of 06/82
2.	Mrs. Mary Stark Rachle	American	-	1982 - 1984	Padang	Spouse
3.	Dr. Jack Dee Travvick	American	Farm Dev. Engineer	1980 - 1984	Padang	
4.	Mrs. Ana Yudith V. Travvick	Panama	-	1980 - 1984	Padang	Spouse
5.	Dr. Douglas H. Perry	America	Agro Economic	1982 - 1984	Padang	
6.	Mrs. Linda W. Perry	America	-	1982 - 1984	Padang	Spouse
7.	Mr. Benjamin Douglas P.	America	-	1982 - 1984	Padang	Son
8.	Mrs. Tristan Elizabeth G.	America	-	1982 - 1984	Padang	Daughter
9.	Mr. Aroon Jugsujinda	Thailand	Soil and Water Management	1982 - 1984	Padang	
10.	Mrs. Sareya Jugsujinda	Thailand	-	1982 - 1984	Padang	Spouse

Number	Name	Nationality	Specialties	Length of Service	Location	Remarks
11.	Mr. Anuphorn J.	Thailand	-	1982 - 1984	Padang	Son
12.	Mr. Issara J.	Thailand	-	1982 - 1984	Padang	Son
13.	Mr. Sira J.	Thailand	-	1982 - 1984	Padang	Son
14.	Mr. P.S. Srinivasan	India	Adm. Specialist	1982 - 1984	Padang	-
15.	Mrs. Anantbalaksmi S.	India	-	1982 - 1984	Padang	Spouse
16.	Mr. Anuradha S.	India	-	1982 - 1984	Padang	Daughter
17.	Ms. Tavashri S.	India	-	1982 - 1984	Padang	Daughter
18.	Ms. Banini S.	India	-	1982 - 1984	Padang	Daughter
19.	Mr. Hans Ulrich Scholz	German	Geography	1981 - 1983	Padang	Returned to post 03/83
20.	Mrs. Hildegund Scholz	German	-	1981 - 1983	Padang	Returned to post 03/83
21.	Mr. Jan Carsten Scholz	German	-	1981 - 1983	Padang	Returned to post 03/83
22.	Mr. Genaro D. Revillena	Philippines	Adm. Specialist	1980 - 1983	Padang	Returned to post 08/83
23.	Mrs. Leticia O. Almazan	Philippines	-	1980 - 1983	Padang	Returned to post 08/83
24.	Ms. Maria Karen P.	Philippines	-	1980 - 1983	Padang	Returned to post 08/83
25.	Ms. Maria Charla	Philippines	Adm. Specialist	1980 - 1983	Padang	Returned to post 08/83
<u>ESCAP-CORTEP PROJECT</u>						
26.	Dr. Siro Okabe	Japanese	Director	1982 - 1986	Pogor	-
27.	Dr. F. Dauphin	France	Agronomist	1983 - 1985	Pogor	-
28.	Mr. Yoshinori Morooka	Japanese	Agr. Economic	1983 - 1985	Pogor	-
<u>P.M.E. PROJECT/AARP</u>						
29.	Dr. William Collier	America	Ag. Economist	1982 - 1985	Pogor	
30.	Mr. Carl E. Fritz	America	Adm. Specialist	1982 - 1985	Pogor	
31.	Mr. Stone Barret	America	Post Harvest Specialist	1983 - 1985	Pogor	
32.	Dr. Imedio T. Corpuz	Philippines	Agronomist MC	1982 - 1985	Mares/Ujung	Pandang
33.	Dr. Ambar H. Rizvi	America	Plant Pathologist	1983 - 1984	Mares/Ujung	Pandang
34.	Dr. Chorn Lim	Taiwan	Fish Nutritionist	1983 - 1985	Pogor	
35.	Dr. Fritz Von Fleckenstein	America	Ag. Economic	1983 - 1985	Mares/Ujung	Pandang
36.	Creta A. Watson	America	Ag. Economic	1983 - 1985	Panjarasin	
37.	Kewitt Deane Brown	America	Rice Breeder	1983 - 1985	Panjarasin	
38.	John Bolton	British	Soil Scientist	1983 - 1983	Panjarasin	
39.	Dr. Bernardo Gabriel	Philippines	Entomologist	1983 - 1985	Panjarasin	
40.	Dr. William Vanstone	Canada	Fish Breeding Specialist	1983 - 1985	Denpasar	

Table Growth Targets for Senior Staff Development (AARD)

	Ph.D.	M.Sc.	Sarjana
Actual Staff 1975	16	-----204-----	-----
AARD Staff at July 1979	27	44	626
Honorary Staff July 1979	<u>0</u>	-----177-----	-----
	<u>27</u>	<u>847</u>	
AARD Staff at Oct. 1983 on site	78	283	1397
Honorary Staff at Oct. 1983	<u>0</u>	<u>0</u>	<u>199</u>
	78	283	1596
AARD Staff Away Training Oct. 83	<u>119</u>	<u>240</u>	<u>13</u>
	197	523	1609
1983/90-92 Training Program	<u>313</u>	<u>607</u>	---New Staff
	510	1130	
Target Staffing for 1980/92	500	1000	1000

Summary of AARP Evaluation  
Recommendations

Recommendation #1: Plans to bring in technical assistance experts for Forestry should be dropped and plans for Animal Husbandry should be reconsidered, as these two areas still lack the physical and organizational ability to absorb and utilize these services without major adjustment to project plans.

Recommendation #2: The project's plans for use of the remaining experts should be carefully reviewed and decisions made very soon as to which areas should be retained, which dropped and which modified. In this process, consideration should be given to AARD needs not explicitly dealt with in the Project Paper.

Among the needs identified in the course of this review are:

- (1) expertise to help expand the scope and improve the process and content of the in-country training component;
- (2) expertise to help improve the quality of construction and speed up the processes of planning and administration which add so heavily, and uselessly, to the project's burden;
- (3) expertise to help AARD in the difficult tasks of translating its new mandates into action plans which clarify ambiguities, assign roles and define relationships with necessary degrees of specificity and tie each of its component programs into the broad conceptual framework;
- (4) expertise to help improve the functional capacity of the AARD Project Implementation Unit (PIU) to plan and follow through on the manifold tasks associated with its roles and responsibilities.

The Evaluation Team feels strongly that these kinds of expertise, which it believes can readily be applied through the technical assistance contract, would be important contributors to the revitalization of the project as an effective instrument in AARD's stewardship of the Indonesian agricultural research program. Both long-term and short-term technical assistance experts could effectively be used for these purposes.

Recommendation #3: AARD and USAID, with help from RMI, should place consideration of the above suggestions high on the agenda of matters to be resolved in the coming days. Once decisions are reached, they should be implemented quickly in view of the PACD time frame and the large volume of work to be done.

Recommendation #4: The terms of currently assigned technical assistance experts whose performance is acceptable to AARD should be extended until the PACD, and their contract Terms of Reference amended (if necessary) to permit some or all of them to spend more time on the training aspects of the program.

Recommendation #5: The AARD should set up a system to select long-term and short-term consultants, and evaluate their performance in accordance with the needs of AARD.

Recommendation #6: In its grantor capacity, USAID should monitor RMI's performance of contractual obligations more closely and, with AARD's agreement, recommend steps through which work planning and documentation can be improved.

Recommendation #7: AARD and USAID should review the systems through which they monitor project progress and take whatever steps may be necessary to improve these processes. One recommended step is the providing of additional support by the USAID Mission to help the Project Officer fulfill his very comprehensive and heavy load of responsibility, which currently includes the Sumatra Agricultural Research Project and a Centrally-Funded CRSP on Tropical Soils in addition to AARP.

The Evaluation Team notes that key people of the PIU and other staff attached to or associated with AARP meet weekly. It also notes that full review meetings have been held twice. The Evaluation Team emphasizes the importance of AARD establishing a specific schedule for various types of meetings. In addition to the regular weekly meetings, the Evaluation Team recommends monthly meetings to address any policy issues needing action. Also important are quarterly or semi-annual meetings to formally review the status of the project, provide the basis for correction and develop plan for future work.

Recommendation #8: AARD and USAID should consider reducing the number of sites included in the construction plan. In any decisions reached, criteria of land status, personnel availability, availability of funds, estimated schedule and duration of construction phase, should be used to supplement decision criteria related to the importance of affected sites to the AARD system.

Recommendation #9: AARD and USAID representatives should meet as soon as possible, with assistance from the technical assistance personnel, to review the number and kinds of structures proposed for all of the research sites with a view to eliminating from the construction program a significant number of the structures deemed to be of least critical value to the achievement of project purposes. Special consideration should be given to reducing the projected schedule load of Banjarbaru Phase II, Banjarbaru Phase III, Handil Manarap, and Banjarbaru IV (Animal Disease) in Region II, and Maros Phase II and Kupang-Oesao in Region III, where the revised scheduling estimates indicate the possibility of serious time constraints near the end of the project's life.

Recommendation #10: AARD and USAID should consider possible alternative uses for any savings in construction money made possible through cut-back decisions. Consideration should be given to the possibility of utilizing funds to ease staff housing needs at research sites where lack of residential facilities is a serious constraint to research effectiveness.

Recommendation #11: Using grant funds available under its contract, AARP may wish to hire locally an expert engineering or architectural professional to assist in the oversight of design and construction contractors and to serve as a prime vehicle for expediting the administrative processes necessary to obtain construction approvals. This expert is in addition to the available AARD expert already experienced in construction (NAR II) who can assist the AARP.

Recommendation #12: AARD and USAID should make every possible effort to speed up the construction program without damaging either the integrity of the project's purposes or the quality of the construction involved. These efforts should include increased field visitation monitoring and reporting by USAID engineering and project staff members.

Recommendation 13: The USAID Mission Director and the Director General of AARD should take immediate steps to resolve the current procurement impasse through discussions with appropriate GOI officials. If the impasse cannot be resolved at an early date, and if no feasible alternative solutions to the procurement problem can be found, then the GOI and USAID should reconsider the project's purposes and viability and reach a decision on whether to continue or abrogate the Project Agreement. The Evaluation Team was questioned whether or not an arrangement could be made with the World Bank Nar-II project, by procuring equipment through its existing channels in exchange for a price equivalent service from AARP. The Evaluation Team recommends this be explored.

Recommendation #14: If a satisfactory solution to the current impasse is reached through USAID-GOI negotiation, then the project should commence procurement forthwith and at an accelerated pace in order to insure delivery of equipment in time to allow the completion of proper installation, testing and utilization training before the PACD.

The delays in beginning procurement, and the further delays caused by the current problem in securing GOI approval of the plan and PSA contract, have made for significant increases in the need for thoroughness and efficiency in the procurement operation during the final two years of the project. Even if the process is restarted soon and expedited with despatch, the delays which have already occurred have undoubtedly done some damage to the project plan for coordinating of component activities. This is particularly true for those research units already in operation and where the equipment could be put to immediate use. For new units, the damage is not as great as might be thought to be because of two factors: (a) the procurement schedule is really not too far behind its intended timing and (b) the construction components of

the project are also running behind schedule. With time availabilities dwindling, however, the need for close articulation between system elements is even greater than before, and making the various pieces fit together as intended will be a considerable challenge.

Recommendation #15: To the fullest extent possible, the schedule for procurement should be revised to insure the closest possible synchronization between equipment arrival at site and the readiness of facilities and personnel to accept and utilize equipment effectively. Lengthy periods of storage should be avoided, as should delays in delivery to sites which are ready at the time to receive and use the equipment.

Recommendation #16: The project should expedite all phases of the procedure, and should also assign specific responsibilities to designated officers and consultants for tasks needed to improve scheduling efficiency and follow through. At least one project staff member should be assigned to these functions on a full-time basis. The project should give high priority to high lighting the procurement issues in the revised implementation plan. This should include all the key steps from identification of equipment to its delivery.

Recommendation #17: AARD and USAID should look into the operational problems associated with English language proficiency requirements, and actively seek ways to minimize obstacles confronting the training program and maximize the very substantial benefits which can accrue to the project and to the quality of agricultural research generally through effective training.

Because the project has not drawn on AAETE for in-country training, and because there has been some questions about the appropriateness of AARP arranging to conduct its own in-country training when budgetary resources for agricultural training tend under GOI policy stipulations to flow only to AAETE, some important in-service training needs of AARD have been neglected. Three general types of training are involved. First, is the need for what might be called "re-entry" training for personnel who have returned from long-term studies abroad. These people need help in adjusting themselves to an organization greatly changed since they left.

Training assistance in helping them understand AARD's structure, functions, priorities and relationships, to say nothing of the new mandates of the several Research Institutes, would be useful both to the scholars and to the organization. Second, is the need for returnees (both long and short termers) to "practice" their newly learned skills in research methodology, problem definition, scientific and laboratory equipment use, etc. A small investment here might pay good dividends, too. (See Chapter IV Section on AARD/LARP Linkage - Work Staff). Third, the counterparts of returnees, technicians and others with whom they are to work, will need assistance in learning how to operate new specialized machinery and equipment, and use new research methodologies, if the new relationships are to be fully effective. While returned participants should certainly be expected to share what they have learned with their co-workers, reliance on this cannot be total and efforts should be made to help technicians, statisticians, mechanics, laborers and other kinds of workers become more productive as they work in a changed environment.

Thoughtful attention to these kinds of training needs and the organization of arrangements to service them, could add considerably to the capability of the agricultural institutions supported by AARP.

Recommendation #18: AARP should request its technical assistant team to consider the topic of in-service training needs and draft a proposal for designing and implementing an effective program for meeting them. This task could draw on short-term expertise brought in for the purpose of assisting the technical assistant team in this endeavor. The proposal should be drawn up with due awareness of MALTE capabilities and, wherever possible, closely integrate that organizational channel into the training programs proposed.

Recommendation #19: AARD and USAID should determine the need and feasibility of any modifications needed in the Grant and Loan Agreements to assign additional funds to in-country training of the kinds discussed above.

Recommendation #20: AARD should determine the extent to which duplication and/or competition are real problems in its AARP and NAR-II projects, and take action to minimize any deleterious effects found to exist.

Recommendation #21: Projects involving the Outer Islands should be kept as simple as possible and given more time for adequate verification of data, planning and development of coordination before being formalized and implemented.

Recommendation #22: Those projects that involve more than one island or Research Institute should be given to experienced personnel for development, design and implementation.

Recommendation #23: Personnel assigned to projects for the Outer Islands should work on them full time and be given ample opportunity to understand the complexity of the region and the resources required to remove the constraints most likely to interfere with the execution of the project.

Recommendation #24: The technical assistance experts assigned to support projects aimed primarily at developing the Outer Islands (for example RMI experts assigned to AARP) should make a special effort to provide the type of assistance that will assure the project's objectives and AARD's goals are realized. During the early stages of the project, the consultant should assist AARD in identifying the key elements needed to successfully implement the project including a rolling Five Year Plan, an Annual Work plan and regular opportunities to review the project and make adjustments to the original design if needed.

Recommendation #25: The Evaluation Team recommends that AARD redefine the goals and objectives of AARP, requirements for facilities, equipment, technical assistance and training taking into account the new mandates recently established for the various Research Institutes. This re-definition should take place within the next three months (before April 1984). This should occur as the result of a workshop, the output being a clarification of the items listed above plus a Two Year Master Plan of Work for the 1984/85 and 1985/86 fiscal years. Another specific element of this plan would be a clear identification of those items that can be done at the Research Stations prior to or during construction (such as leveling of field sites at Banjarbaru, establishment of fish ponds at Gondol, which would sufficiently allow current staff to begin using the facilities for research and training).

Recommendation #26: The Evaluation Team recommends AARD convene a series of workshops dealing with Rice based and/or Industrial Crop based farming systems. The purpose of the workshop(s) would be to further explain the new mandate system and show how to work on specific cropping system mentioned above that can be done in a given agro-climatic zone and satisfy both the national mandate and best serve the farmers of a given area.

The Team Evaluation recognizes that AARD has already completed much of what is expected from this workshop(s). The element included in the proposed workshop(s) and which builds on what AARD has already done is two-fold: a) the output of the workshop will be an Action Plan to do research by an individual or group of scientists; and b) funds (rupiah) from AARP would be used to support projects judged by AARD as worthy of funding.

Recommendation #27: The Evaluation Team recommends that AARP use grant or loan funds to: (1) secure a short-term consultant(s) to plan and help execute the workshop(s) and required follow up activities, (2) supplement local expenses associated with planning and execution of the workshop(s) and (3) provide initial funds necessary to cover costs related to workshop(s) follow up, including planning and execution of training programs on research methodology and hands on experience for Indonesian scientists.

Recommendation #28: The Evaluation Team recommends that AARD also convene a workshop on manpower requirements to do research on Rice based or Industrial Crop based farming systems in one or more of the agro-climatic zones where research needs have been clearly identified.

This workshop would complement the one referred to under recommendation #27.

The specific objectives of the workshop would be: a) identify manpower needs by discipline and degree required to meet the research activities set for a given agro-climatic zone and cropping system, b) determine the manpower now available to AARD to serve the area described

in (a), (c) determine the manpower gap by discipline (d) ascertain the number of those now in training that will fill this gap and (e) set up a training program designed to supply the manpower necessary to close this gap. The planning of this workshop should start soon after the one on research planning.

Recommendation #29: The Evaluation Team recommends the use of short-term consultants in the planning and execution of the workshop on manpower and that high priority be given to the use of loan/grant funds to: a) purchase equipment, including computers necessary to carry out the workshop, b) pay for short term consultancy, c) supplement local expenses associated with planning and execution of the workshop and d) provide funds to cover training of young scientists recently returned to Indonesia in the methodology and implementation of research projects.

Recommendation #30: The Evaluation Team recommends that AARD consider strengthening the Data Base Unit presently in the Secretariat so that it can improve the effectiveness of the AARD in monitoring program activities, allocating budgets, assigning personnel and establishing future requirements for funds, manpower and equipment.

Specifically, the effort should be directed toward improving the effectiveness of the unit to keep track of AARD's a) manpower capabilities and future needs, b) equipment requirements by institute, station and major discipline, c) major research projects, primary activities and principal researchers and d) budgetary status and requirements of priority research. By strengthening such a unit within AARD and having it easily accessible to AARD management, more effective use could be made of foreign assistance as well as resources supplied through the regular DIP.

Recommendation #31: The Evaluation Team recommends that grant funds available under AARP be used to provide a short-term consultant to implement recommendation #30 and based upon the recommendations of the consultant and concurrence of AARD and USAID, the necessary equipment (computer) be procured and manpower trained to increase the effectiveness of the present unit.

Recommendation #32: The Evaluation Team recommends that AARD clearly define the role of AARP, and in particular, identify the lines of authority between the Director General of AARD and the Project Leader of the PIU and those between the Director General and the regional coordinators handling AARP related activities. Also, AARD should further define the relationship between the Project Leader of the PIU and the Regional Coordinators. This should be communicated in writing to the appropriate parties. By so doing it will be clear where the Director General of AARD has delegated authority with responsibility and where he has not done so. The Evaluation Team recommends that the Director General of AARD appoint all personnel assigned to the PIU full time employees of the unit.

Recommendation #33: The Project Leader should make every effort to set the organizational structure of the PIU by: a) meeting the immediate needs of the project as outlined by the Director General of AARD and b) coordinate these activities so they fully complement other activities of AARD as these apply to the program areas of AARP. Specifically, the Project Leader should gear the activities of the PIU to insure a smooth transition of program and personnel once the AARP is terminated. To achieve this will require the Project Leader to be fully abreast of the activities proposed for AARD in the previous section and if approved and executed by AARD, gear the operation of the PIU to be fully supportive of the resultant activities and assist wherever possible in providing the needed data requirements.

Recommendation #34: The Evaluation Team further recommends the PIU request RMI hire a full time Indonesian Civil Engineer experienced in construction of facilities. This engineer should be placed under the direction of the Project Leader and assigned to the P3 Advisory Group. (See Appendix IV Figure 1).

The Project Leader should take appropriate measures to insure the engineer communicates as needed with the design and construction organizations and the appropriate Regional Coordinators responsible for the construction of AARP facilities.

Recommendation 35: The Project Leader of the PIU should hold regular group meetings with AARD, RMI, design and construction personnel as well as appropriate USAID staff to insure the design and construction portion of the AARP is well coordinated and completed as soon as possible.

These meetings, financed with project funds, should be held at least once a month and include the appropriate Regional Coordinator. The Regional Coordinator should be able to use the trip related meeting to also discuss with other AARD Officials items related to AARP.

Recommendations #36: The Project Leader should work closely with the Chief of Party of RMI to insure reporting procedures called for in the contract are met and coordinate meetings between AARD and the technical assistance team of RMI.

Recommendation #37: The AARD should immediately request RMI to assist in complying with the Terms of the Contract and particularly those in Articles III and IV cited by the Evaluation Team as being deficient. In the event RMI does not respond to this request, this failure could serve as a basis for a complete review of the RMI/AARD Contract and may serve as a basis for considering action that may lead to termination of services.

Recommendations #38: Assuming RMI responds positively to recommendation #37, it is recommended that the Chief of Party and his staff devote their resources to help implement as many of the recommendations made by the Evaluation Team as deemed feasible and appropriate by AARD. This should be put into a Detailed Two Year Work Plan for 1984/85.

Recommendations #39: The Chief of Party should continue to focus as much of his time on AARP related activities as possible and avoid completely those activities that are not related to AARD.

The Evaluation Team noted the extensive use of services of the Chief of Party by AARD for a wide range of purposes. While the Evaluation Team recognizes the need will arise and at times the importance of complying with these requests, care should be taken to ensure this is not at the expense of technical or administrative needs of the technical assistance.

Recommendation #40: In the event the needs by AARD for the Chief of Party's services are such that they indeed do limit his effectiveness in serving the immediate requirements of the project, he should consider hiring an Administrative Assistant.

Recommendation #41: The Mission backstop offices (i.e. Engineering, Program, Training and Finance) should spend time in the field and become familiar with the project's activities. The Evaluation Team understands there is limited amount of mission manpower available for these trips.

Recommendation #42: After all key project implementation issues have been resolved, the USAID Project Officer should request from RMI, a detailed Implementation Action Plan and a Two Year Plan of Work. This should include a project schedule or project activity chart/calendar indicating the critical milestone dates, project study/reports/papers due dates or scheduled completion dates, etc., for the remaining duration of the project.

Recommendation #43: The technical advisory/steering committee for the AARP already existing in AARD should be structured to include appropriate people from the AARD Secretariat, AARD/PTU, RMI Chief of Party and others as deemed by the AARD Secretariat as necessary to ensure the smooth operation of AARP. The USAID/Indonesia Project Officer should be the principal representative from USAID.

Recommendation #44: The cancellation of the Forestry component from the AARP. This request was made by the Director General of the AARD during the Evaluation Team's first meeting with him. The Evaluation Team makes the recommendation to cancel at least the construction and equipment portions of the Forestry component of AARP. This recommendation is made for two reasons. First and foremost, deals with delays in obtaining a secured site. The Ministry of Forestry has been unable to identify land near Samarinda suitable for construction. Inability to obtain the proper land certificates for the site is the problem at Sudiang Mandai. The difficulty experienced in securing proper land certificates in itself will result in significant delays in getting construction started and

completed by the PACD. The second reason for making this recommendation is procedural. As of June, 1983, the Forestry Institute was taken out of AARD and included in the newly created Ministry of Forestry. It is not clear to the Evaluation Team whether cancellation of the Forestry component will free up rupiahs originally budgeted for construction for use elsewhere in the project or whether these funds are lost to the project altogether as a result of cancellation. AARD needs to receive a ruling on this since most of the alternatives proposed in Chapter V carry the assumption that rupiah funds can be used elsewhere.

Recommendation #45: Increase from 43.42% to 65% AID's share of construction costs.

This request was proposed by AARD in its July, 1983 letter to USAID. While the Evaluation Team has supported this request in the form of a recommendation, there remains a need for clarification from both USAID and AARD on the policy and program issues involved. First, the Loan Agreement states that line items described in its financial plan can be inter-changed in amounts up to 40% provided the USAID contribution does not exceed the amount of the loan and the total contribution made by the GOI does not decrease. AARD needs to provide clarification in two areas. First, can rupiah described for use in the construction component be re-programed to finance other line items of the project? And second, is AARD willing to maintain its original rupiah commitment? A USAID policy matter related to this is whether it will accept payment "in kind" as part of the GOI contribution; for example is GOI provision of training facilities an appropriate "in kind" contribution?

Recommendation #46: Extend the PACD of the project by six months.

Every indication was given to the Evaluation Team by both USAID and AARD that an extension of the project by six months is both acceptable and desirable. If for any reason this should not be the case, a major amount of the loan and some of the grant monies will probably go unused.

Recommendation #47: Consider use of grant and loan funds to finance in-country training. This recommendation has been made by the Evaluation Team in an earlier chapter. The Evaluation Team is aware that current GOI policy discourages use of loan funds in this way.

Additionally it was not clear to the Evaluation Team whether grant or loan funds can be used for this purpose without amending the present Project Agreement. Both AARD and USAID should provide clarification on this matter since the Evaluation Team has recommended that a substantial amount of in-country training be used with funds originally destined for financing construction.

Recommendation #48:

Consider cancellation of the project or drastically modify it if the proposed solution for using the present PSA proves unacceptable to either the GOI, AID or the PSA in question.

Failure to find a way acceptable to all parties to use the present PSA will result in at least a fourteen month delay in the procurement and installation of equipment. This in turn would make highly doubtful the project's ability to obtain anything but a fraction of the equipment needed for the facilities likely to be built. In the Evaluation Team's judgement, the issue here is one which, if unresolved, is threatening the viability of the entire project.

Recommendation #49: Convene workshops for the Outer Islands on research planning and manpower assessment.

Convening workshops in these areas has strong program implications. Their early convening and successful completion are likely to go a long way toward providing a badly needed basis for successfully completing the AARP. Additionally, completion of these workshops will, we feel, almost immediately increase the capabilities and effectiveness of the research system now in place for the Outer Islands and likely accelerate the time when these AARD facilities become operational.

List of Persons Contacted during AARP Evaluation

<u>No.</u>	<u>Name</u>	<u>Position/Institution</u>
1.	Mr. Sadikin SW.	Director General, Agency for Agricultural Research and Development (AARD)
2.	Dr. Setyono	Director General, Agency for Forestry Research and Development (AFRD)
3.	Dr. Ibrahim Manwan	Secretary, AARD
4.	Dr. Suhardjan	Director, Central Research Institute for Industrial Crops
5.	Dr. Yan Nari	Director, Central Research Institute for Animal Science
6.	Mr. Abdurrachim M.	Director, Central Research Institute for Forestry Product
7.	Mr. Komar Sumarna	Director, Central Research Institute for Forestry
8.	Dr. Ali Purnomo	Director, Research Institute for Inland Fisheries
9.	Mr. A. Abdullah	Project Leader, AARP
10.	Mr. Widadi	Secretary, AARP
11.	Mr. Syafril Lam Sayun	Assistant Project Leader (AARP) for Procurement
12.	Mrs. Hafni Zahara	Assistant Project Leader (AARP) for Monitoring
13.	Mr. M. Bagakalie	Assistant Project Leader (AARP) for Technical Assistance
14.	Mr. Soegino	Assistant Project Leader (AARP) for Land Status
15.	Dr. H. Anwarhan	Director, Banjarbaru Research Institute for Food Crops, Region II Coordinator
16.	Ir. Izzudin Noor	Region II Secretary

<u>No.</u>	<u>Name</u>	<u>Position/Institution</u>
17.	Dr. Farid Bahar	Director, Maros Research Institute for Food Crops
18.	Dr. M. Iman	Acting Coordinator, Regional I, AARP
19.	Mr. Rachmad Yusuf	Construction Designer, PT ENCONA
20.	Mr. Aman Santoso	Construction Designer, P.T. CIRIAJASA
21.	Mr. Dananjaya	Construction Designer, P.T. CIRIAJASA
22.	Mr. Suntana	Construction Designer, TEAM - 4
23.	Mr. Puly Samsuri	Construction Designer, TEAM - 4
24.	Dr. W. Collier	Chief of Party, AARP
25.	Mr. Carl Fritz	Administration Specialist, AARP
26.	Mr. R.E. Harwood	Farm Development Specialist, AARP
27.	Mr. J.L. McIntosh	Agronomist, AARP
28.	Ms. Diane M. Barrett	Post Harvest Specialist, AARP
29.	Dr. I.T. Corpuz	Agronomist, AARP
30.	Dr. Anwar H. Rizvi	Plant Pathologist, AARP
31.	Dr. Chorn Lim	Fish Nutritionist, AARP
32.	Dr. F. Von Fleckenstein	Agr. Economist, AARP
33.	Mr. Walter C. Tappan	IRRI Liaison Scientist, Bogor
34.	Dr. Kevitt Brown	Rice Breeder, AARP
35.	Dr. B. Gabriel	Entomologist, AARP
36.	Ms. Greta Watson	Agr. Economist, AARP
37.	Ir. Suaidi Raihan	Construction Officer
38.	Mr. Syahrani A.S.	Technical Assistance & Training Officer
39.	Mr. Imbran Daim	Assistant Construction Officer
40.	Asmana Usman	Assistant Procurement and Transportation Officer
41.	Ir. Mauliana D.	Physiology Research
42.	Ir. Nurginayunati	Agro-Economics Research

<u>No.</u>	<u>Name</u>	<u>Position/Institution</u>
43.	Ir. R.S. Simatupang	Agronomy Research
44.	Ir. Ida Herawati	Agronomy Research
45.	Ir. Noor Ifansyah Fani	Agronomy Research
46.	Ir. Hidayat Dj.	Agronomy Research
47.	Ir. Rosdiah	Agronomy Research
48.	Ir. Sulaiman Kurdi	Agronomy Research
49.	Ir. Charuddin	Agronomy Research
50.	Ir. Mahrita Willis	Pest Research
51.	Ir. Muchlis	Pest Research
52.	Ir. M. Thamrin	Pest Research
53.	Ir. Syaiful Asikin	Pest Research
54.	Ir. Arif Budiman	Disease Research
55.	Ir. Fatimah A.	Breeding Research
56.	Ir. Murjadi Imbran	K.P. Handil Manarap
57.	Mr. Sadjio B.Sc.	K.P. Unit Tatas
58.	Mr. Budhoyo	NAR-II Project
59.	Mr. Hidayat	NAR-II Project
60.	Mr. Anda	NAR-II Project
61.	Dr. R. Retzlaff	NAR-II Project
62.	Mr. Andi Hassanuddin	Maros Research Institute for Food Crops

Applied Agricultural Research Project  
(497-0302)

Mid-Term Evaluation  
Statement of Work

Scope of Work:

Purpose: The main purposes of the evaluation are to: assess the current status of the project; review existing proposals for refining project activities; and recommend a Plan of Action for the final years of project implementation.

Background: The project is designed to improve agricultural research capabilities in Kalimantan, Sulawesi, Maluku, NTT, Bali and West Java. The principal means for achieving this purpose is through the expansion and strengthening of a network of agricultural research facilities in these provinces, focusing on food crops, livestock, fisheries, industrial crops and forestry. The overall goal of the activity is to increase agricultural production, farmer incomes and rural employment.

For various reasons, the project is behind schedule. Consequently, there is a need to assess on-going and planned project activities to make the most effective use of available resources during the remaining years of the project's planned time frame. It is not the intention of the GOI to extend the project beyond GOI FY 1985/86 (March 31, 1986).

Study Structure: The study will be divided into three phases: 1) an assessment of the current status of the project; 2) a review of proposed changes in existing project activities; and 3) recommendations for a Plan of Action to be implemented during the remaining years of the project and the relationship to AARD's plans for future activities.

1). **Current Status:** This assessment will focus on the progress to date of the project's four main components: construction, equipment, training and technical assistance. The central issue of this phase concerns how well the project has performed to date and what needs to be carried out to enhance this performance. The three main issues to be addressed in this phase are:

- a) Progress to date in relation to achievement of project objectives and compliance with time schedules as specified in the Detailed Implementation Plan.
- b) Major implementation bottlenecks which have delayed execution.
- c) Analysis of actions necessary to address these bottlenecks and the timeframe required for implementing these actions.

2). **AARD priorities within the context of existing project objectives.** Several proposals for mid-course revisions have already been put forth. These include:

- a) Reducing the number of research facilities;
- b) Increasing USAID contribution to the construction component;
- c) Reducing the number of research subsectors; and
- d) Expanding the scope of the project to include additional development priorities of the Agency for Agriculture Research and Development.

These proposals should be reviewed within the context of existing AARD objectives. Major constraints to achieving these objectives should be identified and appropriate means within the existing project framework for addressing these constraints outlined.

3). **Action Plan:** The main product of this effort is to be a recommended Plan of Action for the final years of project implementation.

Recommendations for mid-course revisions should integrate the findings of the first two phases of the study and clearly specify how these proposed changes further enhance the likelihood of the project achieving its overall objectives. The plan should be specific about the appropriate levels of effort for the four main components of the project and any additional components.

In developing the Action Plan attention needs to be given to training, staffing and budgeting plans of AARD to ensure that these efforts are sufficient to operate and maintain the facilities and equipment being provided by the project.

Methodology and Procedures: Data collection activities will involve at least three steps. 1) a review of existing project documentation, including the Project Paper, the Detailed Implementation Plan, and selected project progress reports; 2) meeting with GOI and USAID project leaders as well as technical consultants in Bogor; 3) site visits to Field Research Stations in South Sulawesi and South Kalimantan.

Reporting Requirement: The report will contain the following sections:

- Executive Summary (two pages, single spaced, including statement of purpose of the project and of the evaluation);
- Statement of Major Findings (short and succinct with topic or subject identified by subhead);
- Recommendations corresponding to major findings and specifying who or which agency should take the recommended action;
- Body of the report will provide the information on which the major findings and recommendations were based and including a description of the country context in which the project was developed; and
- Appendices as necessary (including, minimally, evaluation scope of work and statement of methodology used).