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IDENTIFICATION DATA					
A. Reporting A.I.D. Unit: Mission or AID/W Office (ES# _____) <u>USAID/Indonesia</u>		B. Was Evaluation Scheduled in Current FY Annual Evaluation Plan? Yes <input checked="" type="checkbox"/> Slipped <input type="checkbox"/> Ad Hoc <input type="checkbox"/> Evaluation Plan Submission Date: FY _____ Q _____		C. Evaluation Timing Interim <input type="checkbox"/> Final <input checked="" type="checkbox"/> Ex Post <input type="checkbox"/> Other <input type="checkbox"/>	
D. Activity or Activities Evaluated (List the following information for project(s) or program(s)-evaluated; if not applicable, list title and date of the evaluation report.)					
Project No.	Project /Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOP Cost (000)	Amount Obligated to Date (000)
497-0304	Secondary Food Crops Development		04/1990	7,400	7,400

ACTIONS		
E. Action Decisions Approved By Mission or AID/W Office Director	Name of Officer Responsible for Action	Date Action to be Completed
Action(s) Required 1. Project will not be extended past current PACD 2. Explore possibility of utilizing selected completed components of this project in future new activities, such as: - private sector participation in the research and diffusion of improved palawija seeds; - farming system research approach in palawija development based on regional differences and comparative advantages; - enhance collaborative research and long term training for Indonesian scientists in U.S. universities on policy studies and farm management analyses.	G. Like, R. Navin G. Like, J. Lindborg G. Like, E. Faris	04/90 04/91 04/91

APPROVALS				
F. Date Of Mission Or AID/W Office Review Of Evaluation: _____ (Month) _____ (Day) _____ (Year)				
G. Approvals of Evaluation Summary And Action Decisions:				
Name (Typed)	Project/Program Officer	Representative of Borrower/Grantor	Evaluation Officer	Mission or AID/W Office Director
	George E. Like	Ir. H. Thamrin Bastari	George E. Lewis	David N. Merrill
Signature				
Date				

A B S T R A C T

H. Evaluation Abstract (Do not exceed the space provided)

The general objective of the Secondary Food Crops Development Project is to assist the Ministry of Agriculture, Directorate General of Food Crops to increase the production and improve the marketing of palawija crops (corn, cassava, soybeans and peanuts) and at the same time improve rural incomes and diets. The components of the project include technical assistance, training, special studies and operational support. This operational support consisted of production inputs which were provided once for each farmers group participating in demonstration farms (demfarms).

This end-of-project evaluation was intended to provide the MOA and USAID with an assessment of project performance during the seven years (1983-1990) LOP and to determine elements of project sustainability. The evaluation was conducted in March-April 1990 by a three-person team consisting of: Drs. J. Billingsley; J. Conje; and N. Budiman. The primary findings of this team are that the SFCDP, on balance, was a successful project. The project goals and purposes as reflected in the logical frame work were achieved and were consistent with the Mission's programs and with the GOI's current five year plan (REPELITA V). The outputs of the project technical assistance team were consistent with USAID and GOI longer term involvement. Particularly promising is the GOI commitment to continue diversifying the rice-based economy and to increase the production of palawija crops. Indonesian farmers seem willing to accept this policy and many farmers attitudes have changed as a result of the demfarm experience. Research extension linkages have been strengthened on the provincial level. Linkages between public and private sectors have been created as a result of project activities. Project training programs have significantly increased skill, knowledge and attitudes of the trainees, particularly for extension workers, key farmers, traders, Village Unit Cooperatives (KUD) staff and artisans. Village women through the "menu-demonstrations" and the home economic scheme (PKK) are able to prepare nutritious non-rice foods for sale in the local market. In addition, special studies on agronomic, socio-economic, marketing and policy aspects of non-rice food crops have been used by the GOI to implement policy changes, project monitoring and preparation of Indonesia's five year agricultural sector plan.

C O S T S

1. Evaluation Costs

1. Evaluation Team		Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S. \$)	Source of Funds
Name	Affiliation			
1. Dr. Ray Billingsley	The Pragma	IQC:PDC-1096-	\$ 77,076	USAID (G)
2. Dr. John Conje	Corporation	I-00-7169-00		497-0304
3. Dr. N. Budiman		DO #9		
2. Mission/Office Professional Staff Person-Days (Estimate) <u>20</u>		3. Borrower/Grantee Professional Staff Person-Days (Estimate) <u>45</u>		

A.I.D. EVALUATION SUMMARY - PART II

SUMMARY

J. Summary of Evaluation Findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provided)
 Address the following items:

- Purpose of evaluation and methodology used
- Purpose of activity(ies) evaluated
- Findings and conclusions (relate to questions)
- Principal recommendations
- Lessons learned

Mission or Office: USAID/ARD:APD	Date This Summary Prepared: 06/ - /90	Title And Date Of Full Evaluation Report: Final Evaluation of the Secondary Food Crops Dev. Proj. (USAID 497-0304) April 15, 1990
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PURPOSE OF EVALUATION AND METHODOLOGY USED

This evaluation of the Secondary Food Crops Development Project was to provide the Ministry of Agriculture (MOA) and USAID with an assessment of project performance during its seven years life (1983-1990). It was also to answer the following questions: 1) How effective has project financed technical assistance been and have their activities been used by the MOA for policy adjustments and planning to improve the capacity of Indonesian public and private sector to promote sustainable non-rice crops production and marketing?; What specific activities merit continued support and participation of the GOI, private sector, or other donors to ensure project sustainability?; 2) What research technology packages have been disseminated to end users/farmers, and how effective have research-extension linkages been in improving non-rice crops extension and marketing programs?; 3) How profitable has the technology generated by the project been in improving availability of credit for non-rice crops production and marketing?

The evaluation was carried out during a seven-week period in March/April 1990 by a three-person team of consultants. To conduct the evaluation the team interviewed USAID officials and reviewed project documents, held discussions with MOA-Directorate General of Food Crops Agriculture (DGFA) staff in Jakarta; Ujung Pandang, South Sulawesi; Surabaya, East Java; Kupang, Nusa Tenggara Timur (NTT); Tanjung Karang, Lampung; and conducted field work in South Sulawesi, East Java, Nusa Tenggara Timur, and Lampung provinces. Work in the provinces included interviews and discussions with staff of Bank Rakyat Indonesia (BRI) - the Indonesian Rural Bank, cooperatives, local traders and craftsmen, DGFC regional offices, regional research institutes, farmers, (male and female), field research and extension workers. Various documents were examined, and interviews were conducted with participants and motivators in various training courses.

PURPOSE OF ACTIVITIES EVALUATED

The overall objective of the Secondary Food Crops Development Project (SFCDP) was to assist the GOI to increase the production and improve the marketing of corn, cassava, soybeans and peanuts and at the same time to improve rural incomes and rural diets thru increased local consumption of these secondary food crops. The project's primary emphasis has been upon reducing Indonesian dependence on rice as the mainstay in the Indonesian diet through the promotion of production and local consumption of palawija crops. Emphasis has also been placed on developing MOA, DGFA human and institutional resources capable of carrying out relevant economic analysis and collecting market information. Specific components of the project include in-country and overseas short-courses, special studies, policy research, commodities, and operational support.

3

FINDINGS AND CONCLUSIONS

The evaluation team concluded that the project objectives are consistent with the Mission's development strategy and the current Indonesian five year development plan. The outputs of the project technical assistance teams were consistent with USAID and GOI longer term involvement in the secondary food crops sectors. As seen from the following responses to question raised during the evaluation, the GOI is committed to diversifying the rice-based economy and increasing the production of secondary food crops. Indonesian farmers are accepting this policy.

What evidence is there to date of improved field agents and farmers skills as a result of this project? The USAID and GOI contributions were incorporated into a model (dem farms) that has been successfully used in improving rice production. Although it was a logical and good policy choice, there were some observations that the promotion of secondary food crops was not as successful as with rice. Secondary crops are grown where the soil and rainfall conditions will not sustain rice but the Indonesian farmer, when he can, will grow and consume rice. However, there is evidence of increasing numbers of farmers both inside and outside the demfarm area who are now willing to accept the risks involved in activities such as: using commercial inputs and modern varieties for palawija; hiring farm machinery, processing soybean into curd (taufu) and cake (tempe) and practicing improved cropping systems.

What evidence is there to date of longer term sustainability of project activities? Increases in palawija production brought about by the demfarms appears to be sustainable. Several factors contribute to sustainability, e.g.: benefits from the development of technology (by the food crops research institutes); technology transfer (the extension services); use of production inputs (project revolving funds, lending institutions, farmers resources); functioning farmers groups and favorable government price support policies.

Effective January 1, 1990; the GOI announced floor price increases of: unhusked rice by 8% (from Rp.250 to Rp.270/kg); yellow corn by 10.7% (from Rp.140 to Rp.155/kg); soybean by 8.1% (from Rp.370 to Rp.400/kg). Fertilizer price increases: Urea and Ammonium Sulphate by 21.1% (from Rp.165 to Rp.185/kg); Triple Super Phosphate (TSP) by 23.5% (from Rp.170 to Rp.210/kg); and KCl by 27.3% (from Rp.165 to Rp.210/kg). Although, to the farmers, cost of production is apparently increased, there is considerable evidence that current levels of fertilizer use are excessive, particularly for TSP where output response to increased use has been shown to be negligible. Productivity will not be substantially reduced if fertilizer use declines moderately. The government's decision to raise the prices of fertilizer and foodcrop commodities is designed to both reduce fertilizer subsidies and increase the incomes of farmers.

Many farmers are now willing to accept the risks involved using commercial inputs and modern varieties for palawija. This change in farmers' attitude has created a ripple effect and spread the technology outside the demfarm areas, which is obviously an important factor to a longer term sustainability.

In addition, the GOI's commitment to continue to provide high priority for palawija as a distinct program in Indonesia's fifth five year development plan (REPELITA V) is further evidence of longer term sustainability.

Have closer links been established between MOA Agencies, Indonesian universities and other related public and private sector organization involved with secondary food crops research and extension? The demfarms offer a feed back mechanisms among researchers, extension agents and farmers. The regional universities in the project provinces were contracted under the project to conduct baseline and marketing studies in the provinces, the results of which have been used for regional planning and monitoring of palawija development. Improved corn varieties were provided by private companies for the project demfarms. Contract farming between private firms and farmers to produce corn, soybean, cassava for domestic and export purposes, provide evidence of public and private sectors and universities involved with secondary food crops research and extension. Closer links do exist between these organization.

What is the role of other donors to promote the sustainability of secondary crops development? What coordination is required to avoid duplication of their efforts?

Palawija activities are a function of the Directorate General Food Crops (DGFC). These activities should be linked with other agencies, both inside and outside the MOA.

- Ministry of Finance/Bank Rakyat Indonesia (BRI) Financial Institutions Development Project (AID 0341) to assist 2500 BRI village branches to extend services, expand loan portfolio and mobilize savings.
- BAPPENAS Agriculture and Rural Sector Support Program (ARSSP) (AID-0357) to increase rural incomes thru agricultural diversification
- Ministry of Public Works. Small Scale Irrigation Management (AID 0347) to apply irrigation technologies that support diversified cropping patterns in selected eastern islands, (included NTT).
- MOA, National Agriculture Extension Project (IBRD) to increase the performance of agricultural extension.

All details of donor activities are carried out at national level through the National Development Planning Board (BAPPENAS) and MOA, and at regional level through BAPPEDA (Regional Planning Body) and KANWIL (Regional Representative Office, MOA). Because of this coordination, duplication among donor efforts is kept to a minimum.

RECOMMENDATIONS

1. Increased private sector participation by the GOI should be encouraged in the:
 - development and diffusion of improved hybrid corn seed, grain legume, and other non-rice crop seeds; and
 - provision of incentives to selected contract farmers to produce these seeds by effective processing and distributions.
2. Future demfarm packages should include the technologies being developed under the current farming system research approach and be based on regional socio-economic differences and comparative advantage.

3. Increased agricultural intervention should be targeted by the GOI to less developed areas such as Nusa Tenggara Timur (NTT).
4. Donor assistance should concentrate on providing what the GOI cannot provide, such as farm management analysis using enterprise cost and returns budgets, policy studies linked with appropriate U.S. universities, providing Indonesians for long term foreign degree training, and supervised credit services through existing Indonesian institutions.
5. Briefings for technical assistance teams should be implemented so TAs know the accepted procedures for project management and disbursement of funds.

LESSON LEARNED

A.I.D. intervention for palawija crops in Indonesia was appropriate as it assisted an already established model utilizing existing extension and research institutions to transfer the already successful demfarms experience with rice to palawija crops and created no new institutions. However, project funding usually lasts 5-7 years. The actual time needed to institutionalize farming system research - extension practices is probably 15 to 20 years (the model with rice needed 18 years to obtain the impact of the demfarm experience (BIMAS), e.g. rice-selfsufficiency in 1984).

Room for improved performance and impact remains particularly in the development of sustainable farming technologies. Increased multi-cropping (more crops per year) increases the demand of scarce resources, e.g. animal power, fodder, labor, and/or other sources of plant nutrients, and therefore affects the entire farming system. Farmer's own resources of land and water, are coming under increasing pressure of population, and under current condition of technology adoption, the fields are being more rapidly depleted of plant nutrition.

Agriculture development strategies focusing on improved productivity and income in agriculture is oriented to increasing employment and income; whereas agriculture sustainability through natural resources management, environmental issues and conservation, increases costs and presents income reduction in return for sustainable income in the future. If present natural resources are to be conserved or sustained for future use, some reduction in present income will have to be sacrificed. A trade off between present and future income streams and policies to maintain renewable natural resources at some acceptable level is required.

Many farmers adopting new technology have a need for credit. The impact of credit depends on the availability of rural credit sources, the accessibility of bank offices, low transaction costs through fast and simple administrative and lending procedures and less reliance on collateral. These features are more attractive for economically disadvantaged borrowers, including women, than a below market interest rate.

The GOI is committed to diversifying the rice based economy and increase the production of palawija.

The technology developed under the current farming system research-extension approach will be included in future demfarm packages, merging SFCDP methods wth existing palawija intensification (BIMAS/KUT) programs.

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THE PRAGMA CORPORATION



Final Evaluation of the Secondary Food Crops Development Project (USAID 497-0304)

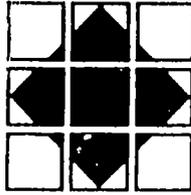


April 1990

Team Leader: Dr. Ray Billingsley

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Final Evaluation
of the
Secondary Food Crops Development Project
(Project No. 497-0304)

April, 1990

Prepared by:

Ray Billingsley
John Conje
Notoamodjo Budiman

TABLE OF CONTENTS

<i>List of Tables</i>	<i>iii</i>
<i>List of Acronyms</i>	<i>iv</i>
<i>Map of Project Sites</i>	<i>vi</i>
Executive Summary	1
I. Introduction	3
II. Project Consistency with Program Goals, Core Review and Repelita V	5
III. Project Impact	9
A. Impact of Demfarms/On-Farm Trials	9
B. Impact of Training	14
C. Impact of Special Studies	25
D. Impact of Technical Assistance	27
E. Impact of Agricultural Credit Inputs	29
IV. Summary and Conclusions	41

APPENDICES

A.	Scope of Work
B.	Project Sites
C.	Organization Charts
D.	Factors in the Sustainability of Social Services
E.	Project Logical Framework and Implementation Matrices
F.	References
G.	Meetings, Interviews and Site Visits
H.	Examples of Open-Ended Questions Used in Interviews
I.	Definitions and Terminology
J.	Project Data Sheet
K.	Statistical Summary
L.	Average Yield/Hectare for Cassava, Corn and Soybean

LIST OF TABLES

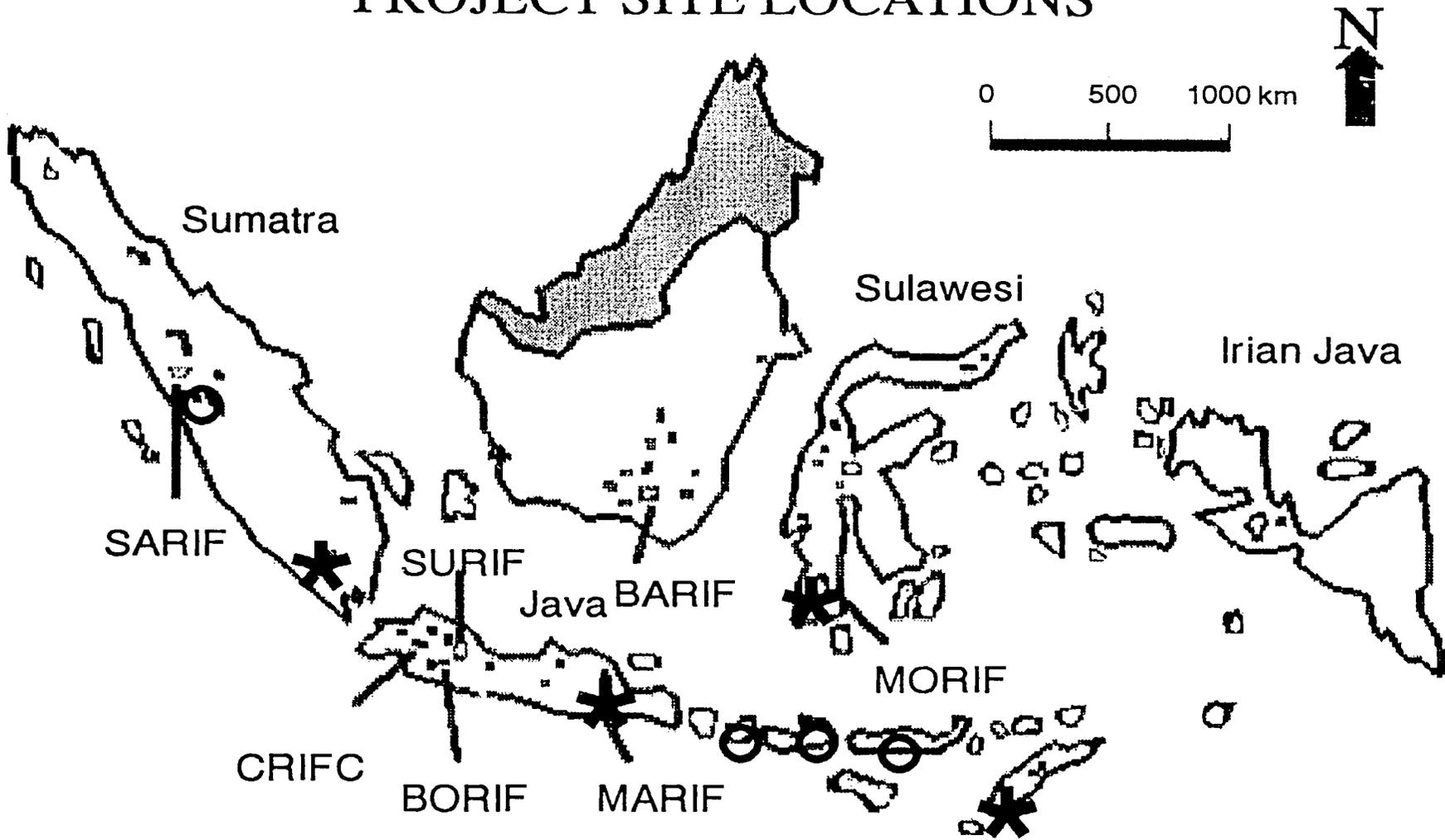
Table 1	Project Training Participation	15
Table 2	Project Training In-Country And Overseas	17
Table 3	Secondary Food Crops Training Activities under NAEP III in Lampung for Pelita IV	23
Table 4	Realization of Palawija Bimas in Indonesia	32
Table 5	KUT Credit System in Selected Project Provinces	32
Table 6	Palawija Procurement Credit System in Lampung Province	34
Table 7	Agricultural Equipment Credit System in Lampung Province	36
Table 8	Revolving Fund from Demfarm in Bone, South Sulawesi	38
Table 9	Selected Revolving Fund from Demfarm in Lampung Province	38

LIST OF ACRONYMS

AAETE	Agency for Agricultural Education, Training and Extension
AARD	Agency for Agricultural Research and Development
ADB	Asian Development Bank
AED	Academy for Educational Development
A.I.D.	Agency for International Development
BAPPENAS	Indonesian Development Planning & Budget Agency
BRI	Indonesian Rural Bank
BRIEC	Bogor Research Institute for Estate Crops
CARD	Center for Agricultural and Rural Development - Iowa State University
CDSS	Country Development Strategy Statement
CTTA	Communication for Technology Transfer in Agriculture
DGFCA	Directorate General for Food Crop Agriculture
DIP	Indonesian approval letter before money can be spent.
EOPS	End of Project Status
GOI	Government of Indonesia
KUD	Agricultural Cooperation at Farm Level
KUT	Credit for Intensification Program
MOA	Ministry of Agriculture
NAEP	National Agricultural Extension Projects
NTB	Nusa Tenggara Barat

NTT	Nusa Tenggara Timur
PPS	Project Program Support (Indonesian extension service specialist)
PKK	Women's organization at village level
REC	Rural Extension Centers
RFI	Rural Financial Institution
SFCDP	Secondary Food Crops Development Project
TA	Technical Assistant
USAID	Country Mission of the United States Agency for International Development

SECONDARY FOOD CROPS DEVELOPMENT PROJECT PROJECT SITE LOCATIONS



- * Demofarms visited
- Project site locations

EXECUTIVE SUMMARY

The purpose of the Secondary Food Crops Development Project (SFCDP) Final Evaluation is to provide the Government of Indonesia's Ministry of Agriculture (GOI/MOA) and USAID with an assessment of project performance from 1983-1990.

The project achieved its goals and purposes as reflected in the recently-revised logical framework. The goals and objectives are consistent with USAID's program and with the GOI Five-Year Plan as stated in Repelita V, Indonesia's Five-Year Development Plan. Outputs of the project technical assistance teams were consistent with USAID and GOI long-term involvement in secondary food crops sectors.

The USAID contribution was incorporated into a model that had been successfully used to improve rice production. It was a logical and effective policy choice to try to do the same thing with secondary food crops, as the GOI is committed to diversifying the rice-based economy and increasing the production of such crops. The Indonesian farmer plants secondary crops--corn, cassava, soybeans and peanuts, which are collectively known as *palawija*--primarily where the soil and rainfall conditions will not sustain rice.

The project evaluation revealed many accomplishments and some lessons learned about project activities that should be strengthened or added. But it found no project activities that should be considered failures.

Project Accomplishments

1. Increases in secondary food crops production on project demonstration farms appears to be sustainable. The number of farmers following the recommended new farming practices is increasing both inside and outside of the project areas. Many farmers are now willing to accept the risks involved in using commercial inputs and higher-yielding varieties for secondary food crops. The number of farmers who have participated directly in the development of demonstration farms has increased significantly from 2,993 in 1983/1984 to 7,567 in 1987/1988 for East Java, Lampung and South Sulawesi.
2. Linkages between public and private sectors have been created as a result of project activities.
3. Project training programs have trained 3,690 people in-country (79 percent of the target) and 37 person/months overseas (13 percent of the target). Training programs have significantly increased the skills, knowledge and attitude of the trainees, particularly extension workers. Traders and artisans have also been

able to modify post-harvest equipment to better meet the farmers needs. The training programs for women can be seen in "menu-demonstrations," during which the village women with the help of local women's organizations (PKKs) are able to prepare nutritious palawija foods for sale in the local market.

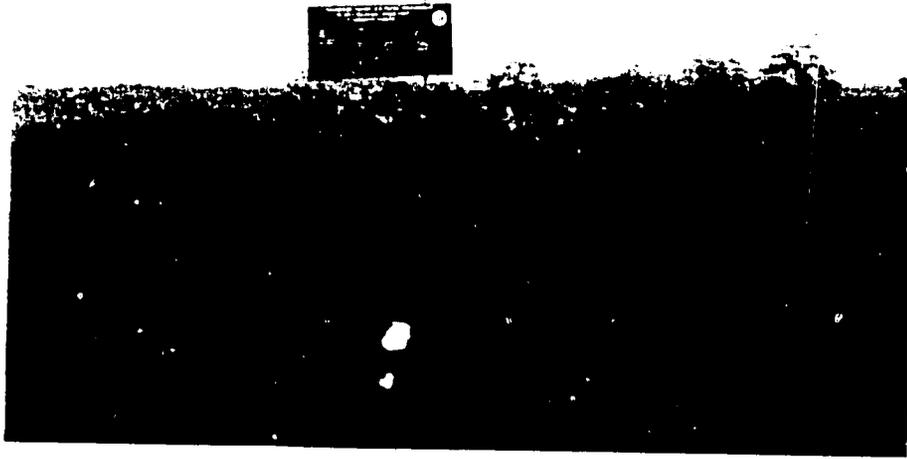
4. The revolving fund generated from the project demonstration farms has had a significant impact on the availability of agricultural credit.
5. Favorable GOI price support policies for secondary food crops provide a stimulus for farmers to adopt new farming technology. Better market information has been developed in several project areas.

Constraints

Lack of improved secondary food crops seeds has been a major constraint. Hybrids developed by private seed companies have not been widely accepted by farmers because they are more expensive and sometimes do not yield as well as traditional varieties.

Recommendations

1. A secondary food crops seed service should be organized to provide a regular supply of good quality improved seeds.
2. Future demonstration farm packages should include the technology being developed under the current farming system research approach. The scale of the demonstration farm should be optimum for demonstration purposes, but not yet a general policy for all of Indonesia.
3. Increased funding should be targeted to poor areas such as Nusa Emseana Timun.
4. Donor aid should concentrate on providing what GOI cannot provide, such as farm management analysis using enterprise cost and returns budgets, policy studies, and supervised credit services through existing Indonesian institutions.
5. The briefing for technical assistance teams should be improved so that they know the proper procedures for requesting project funds.



*Demfarm with visitors
information board*

*Harvesting soybeans,
demfarm*



*Corn ready for harvest,
demfarm*

I. INTRODUCTION

This report evaluates the Secondary Food Crops Development Project (Project No. 497-0304). The project was designed to assist the Director General of Food Crops in Indonesia to increase production and improve marketing of corn, cassava, soybeans and peanuts. These crops are commonly referred to as *palawija* in Indonesia.

The project originally was funded by \$6.4 million from USAID and a host country contribution of \$6.291 million for a total of \$12.691 million. The U.S. contribution has been a combined grant and concessionary 40-year loan.

Started in 1983 as a five-year project to end in 1988, the project appears to have been slow in starting. After the midterm review in 1985 the U.S. contribution was increased to \$7.4 million and the project was extended to April 15, 1990. Part of the USAID contribution was changed from loan to grant in order to secure well-qualified consultants, arrange for support for overseas training of participants and conduct complex food system policy and marketing research.

The primary reason for the project is that historically Indonesia has been a food deficit country with a high population growth rate. There is a strong preference for rice as the mainstay in the Indonesian diet. If the local consumption of *palawija* crops could be increased, Indonesia could reduce its dependence on rice imports and at the same time improve rural incomes and the nutrition of the people.

The organizational positioning of the SFCDP seems to have been frequently changed during the life of the project. Establishing linkages of project activities within the MOA was paramount in the work of some of the TAs. The organizational charts in Appendix C are greatly simplified but show that the project has been a part of the Directorate for Crops and that obviously its activities should be linked with other agricultural directorates. Linkages are also appropriate outside the MOA, but these are not shown.

The project initially was to focus on six sites located in the provinces of Lampung, South Sulawesi and East Java. By the end of the project, sites were located in three additional provinces: West Sumatra, South Nusa Tenggara and West Nusa Tenggara.

Types of farming areas differ considerably from province to province in Indonesia due to different soil and moisture conditions. Many different cropping systems are typically followed. With the introduction of new crops and technology the number of feasible cropping systems becomes even greater. The average farm size differs from one area to another but typically is less than three hectares.

The project was designed for intensive trial of cropping methods using demonstration areas throughout the project areas. The demonstration areas, referred to as demfarms or demunits, began with groups of about five farmers with about five hectares contiguously located. All inputs were furnished to farmers in the five-hectare demfarms. These areas were later enlarged to around 25 hectares and included more farmers, but the farmers were expected to finance part of the inputs. A substantial decrease in project cost per farmer and per hectare resulted from the increase in demfarm size.

The inputs were distributed through farmers groups which had been formed early in the 1970s by the agricultural extension service. The demfarm idea was not new to Indonesia. A similar method was introduced by a World Bank project in the 1970s which distributed improved technology packages to rice producers. This apparently successful project was used as a model for the SFCDP and applied to palawija crops. The model had the advantage of being known already to all relevant institutions in Indonesia.

There are two main criteria by which the SFCDP is to be evaluated. The first is change that has resulted from project activities. Has food production, farm income and rural employment increased? Have farming systems, food security and rural diets improved?

The second criteria is sustainability. Will benefits resulting from the project survive after the project ends, and for how long? Will the GOI policies and programs inaugurated through the SFCDP endure? It should be noted that part of the purpose of pilot or experimental projects is to test feasibility. If certain project activities are found to not be feasible, the correct policy is to discontinue them--but not to have not started them. To not do the wrong thing can be just as important as doing the right thing. Following a corrected policy based on "lessons learned" in a project is a sustainability factor. In addition, the appropriate time to assess sustainability for some project activities may be some years after the project has ended rather than at its closing. An extensive summary of the factors necessary for sustainability is given in Appendix D.

II. CONSISTENCY WITH PROGRAM, GOALS, CORE REVIEW AND REPELITA V

The logframe matrix shown in Appendix E is a concise presentation of the goals, purposes and objectives for a project. It also states the assumptions and sets out the targets to be reached by the end of the project and quantifies the inputs required and the outputs expected.

The five categories of inputs for this project were: (a) technical assistance, (b) training, (c) personnel, (d) other operational support, and (e) commodities.

The six categories of outputs were (a) the palawija project office, (b) six field teams, (c) trial and demonstration farms and intensification farms, (d) trained extension and KUD staff, (e) commodities, and (f) experiments and trials.

These categories are listed in the project document. The revised logframe matrix in Appendix E is the result of the recommendation of the regional Inspector General's Office to "review the verifiable indicators contained in the project planning documents and (a) develop revised indicators that would be valid for measuring project accomplishments, and (b) use the new indicators to assess project accomplishments during the final project evaluation."

Comparing a project's output from a given input is a difficult task because of the lack of suitable quantifying and qualifying variables. The benefit-cost ratios used in the project document are not appropriate indicators; the internal rates of return used by accountants in financial analysis cannot be used to evaluate social or macro economic benefits; and the economic rates of return popular with economists (and often required for feasibility studies) also is limited because of the lack of quantifiable variables. Because of this, all calculations are based on observable or estimated money flows in which the inflows and outflows are both given a dollar value and may be nothing more than budget in and expenditures out.

The performance audit by the Office of the Inspector General performance audit had "the specific objective of determining whether (1) project objectives were being achieved, (2) project accomplishments would be sustained, and (3) financial management were adequate. Audit work showed that project accomplishments had not been adequately evaluated, continued project support after A.I.D. funding ceases had not been assured, control over technical assistance disbursements was weak and unneeded project funds had not been deobligated".

In addition to preparing a new logframe, USAID requested and received a statement from the GOI declaring "under Repelita V, we will give [secondary food] crops high priority. In addition to overall palawija development work, we want to continue SFCDP as a distinct program. It will spearhead the testing and introduction of new palawija farming technologies and systems in selected provinces. If we have no additional funds from USAID or other donors next year we will have to limit special SFCDP work to the original six pilot provinces."

The statement from the GOI should be evidence enough of the GOI's intentions to continue the project. One of the tasks of this evaluation, however, is to determine project sustainability based on performance.

Indonesia's current agricultural development strategy, as stated in Repelita V, consists of three elements : (1) To increase agricultural production, employment opportunities, labor productivity, value-added, and farm incomes simultaneously; (2) to increase the linkages between agriculture and other sectors; and (3) to increase agriculture's role in shaping a regional development based on underlying comparative advantage."

At the national level, the coordination of planning and programming activities among ministries and donors is the responsibility of the Indonesian Development Planning and Budget Agency (BAPPENAS). The Bureau of Planning together with the Directorate of Planning, SFCDP and other foreign-aided projects under the Directorate General for Food Crop Agriculture (DGFCA), then formulate the detailed activities concerning each donor's project component, funds, location, etc. for each province. At the regional level coordination is located at BAPPEDA and KANWIL, the government coordinating agency at the provincial level. All details of donor activity at the national level through BAPPENAS and MOA, and at regional level through BAPPEDA and KANWIL, are coordinated to avoid duplication among donor activities.

The Core Agricultural Review conducted for A.I.D. defines four agricultural program areas: "(1) *Policy problem solving*: Policy analysis, policy implementation, and programming and budgeting, with emphasis on improvement of incentives for private sector investment in agriculture and agroindustry; (2) *Agricultural research*: Science-based intensification of productivity, with emphasis on farmer behavior and agricultural products other than rice; (3) *Decentralization*: Local resource mobilization and use, as well as organizational responsibility from the provincial level to farmer communities and associations and capacity for selecting, operating and maintaining infrastructure such as irrigation and roads; and (4) *Agricultural sustainability*: Sustainable agricultural development."

The Core Review also identifies "three elements of the overall strategy which are common to the four areas. These three elements are a focus on policy, a recommendation for geographic consolidation of AID's activities in agriculture, and the importance of human resource development throughout."

The Core Review further states that "The ultimate goal of the Mission's overall development strategy is to improve long-term sustainable employment and income opportunities through means which promote efficiency and productivity".

The Country Development Strategy Statement (CDSS) also establishes four sub-goals to guide the Mission in the pursuit of the Mission's overall goal: "1) to support market oriented policies; (2) to improve agricultural production and marketing; (3) to develop human resources to meet market requirements and (4) to reduce the population growth rate."

There appears to be a conflict between the GOI's agricultural development strategy, the mission development strategy and the Core Review's four recommended agricultural program areas. The GOI and mission strategies focus on improved productivity and income in agriculture while the Core Review proposes a shift to agricultural sustainability through natural resources management, environmental issues and conservation. The former focus is clearly oriented to increasing employment and income, while the latter, with its focus on the environment, increases costs and reduces present income in return for sustainable income in the future.

The way out of this conflict is to compromise between present and future income streams and concentrate on policies to maintain renewable natural resources at some acceptable level.

The Core Review assigns a high priority to the software of development. The report states: "USAID is a minor contributor to Indonesian development assistance compared with the World Bank, ADB and Japan, which mostly supports constructing infrastructure for agricultural development. USAID is almost alone in being able to field teams of professionals capable of analyzing complex development issues, define objectively the policy options and estimate realistically their costs and benefits as considerations for policy decisions...This is closely related to the U.S. higher education system which develops professionals with a penchant for independence and a dedication to problem solving analysis."

Training Indonesian Ph.Ds makes it easier for collaborative studies to be conducted and is probably the one project activity that has the highest sustainability because trained Ph.Ds coming back to Indonesia may work in the system for 20 to 25 years. The few studies of such educational training which have been conducted show a high economic rate of return. The Core Review concludes that this type of activity is what "USAID can do best."

As a practical matter this type of project activity should be viewed as a partnership between professors in U.S. universities and project personnel in Indonesia. Candidates for advanced degrees in the U.S. could be assigned to professors who have an interest in working with students on Indonesian-based agricultural development problems. Short-term assignments by professors in Indonesia supervising Indonesian graduate student

projects makes much more sense than having the professors bring their own non-Indonesian students to Indonesia to collect data and prepare reports, as was done with the SFCDP.

The Core Review concluded that "the mission should transfer more operating responsibility to contractors, thus freeing direct line staff from bureaucratic tasks to enable them to concentrate more on conceptual issues." This recommendation is exactly backwards. The conceptualization can be best done by professionals and the very important administrative tasks done by USAID. Much frustration on the part of the TAs can be avoided if as many of these tasks as possible can be efficiently done for them.



Village soybean processing, tofu



Field day discussion, demfarm



*Traditional soybean threshing,
not demfarm*

25

III. PROJECT IMPACT

A. Impact of Demonstration Farms and on-Farm Trials

1. Increases in Secondary Food Crops Production

The project's investment on 290 demfarms and on-farm trials (as compared to 180 units planned at the beginning of the project) resulted in increased production of secondary food crops. At the national level, the following yearly increases have been measured from 1983 to 1987: Corn - 2.2 percent; peanut - 4.6 percent; cassava - 4.9 percent; and soybean - 22.9 percent (See Appendix L).

At project areas, increases were 150 to 300 percent above the provincial average. Most of the productivity gains thus far have come from increased cropping intensities--an expansion and change in land use brought about by new technology. The evaluation team found the impact of the project's investment to be most pronounced in soybean production.

Productivity has also increased as a result of improved cropping systems, use of better varieties, improved agronomic practices and increased use of commercial inputs. For example, in Bone, South Sulawesi, soybean yield on the demfarms have reached 1.5 tons/hectare as compared to 0.75 tons/hectare in the areas outside the demfarms. In Ponorogo, East Java, soybean yield on demfarms attained 1.9 tons/hectare as contrasted with 1.0 tons/hectare in neighboring farmers field.

The increased production of secondary food crops has brought about a corresponding increase in farmer income. For example, the higher net benefits in Ponorogo district were calculated at 473,000 rupiah and a range from 381,000 to 473,000 rupiah in Bone.

Team interviews with demfarm participants supports the finding that demfarms had indeed increased farmers' income. When asked by the evaluation team what she was going to do with her increased income, one farmer's wife said, "buy gold jewelry and then take a haji (pilgrimage) to Mecca." Another farmer interviewed indicated that he will use the extra income to save for the revolving fund, construct a concrete drying floor for his produce, maintain his irrigation canals, and provide for his children's education.

Furthermore, the increased production and availability of soybean has changed the food consumption pattern of farm families in some areas (i.e., Bone District). For example, tofu, a nutritious soybean product, was previously only eaten by townspeople. Now, it has become a regular part of the farm family's consumption.

Additionally, there are indications that the intensive cropping systems introduced by demfarms and the increased processing activities of secondary food crop products resulting from improved production has brought about increased opportunities for rural employment. A farmer in Lampung told the evaluation team that before demfarms, his family labor was sufficient to do all the farm work required. Now, he needed hired labor to perform the recommended weeding, spraying, fertilizing and other cultural practices under the new system. Our visits to processing sites for soybean tofu, soybean cake, cassava chips (gapek) and local blacksmiths shops left an impression that these increased activities have increased rural employment opportunities. However, data to support these observations is difficult to obtain.

Comparisons between demfarm farmers and non-demfarm farmers show that demfarm participants have more intensive secondary food crops input and higher production and earnings. But demfarm and non-demfarm differences tended to diminish after financial help and subsidies ceased.

The young couple on the threshing mat (see photographs) said they had heard about demfarms and began growing palawija crops after the project started. The demfarm farmer coming out of his corn field with an armload of corn (see photograph) exudes the pride of leadership we frequently saw.

2. Changes in Farmers' Cropping System

Before the project's demfarms were introduced, most farmers' cropping system included only one crop season per year. During and after demfarms, this has changed to two or three crop seasons per year. The second and third crops are corn (maize), grain legumes (soybean, mungbeans), cassava, and peanuts (groundnuts). The evaluation team found this especially noticeable in project sites in Bone district, where demfarms initially demonstrated the benefits of a second and third crop to farmers who normally only grew one crop (rice) per year. Increased cropping intensity was also observed in North Lampung district and to a lesser extent in Ponorogo district.

One of the best indicators reflecting the positive result from changes in farmers cropping system has been the dramatic increase in the availability of a variety of secondary food crops produce in the market year round.

3. Use of Production Inputs

The project's demfarms have been influential in changing farmers' use of production inputs such as fertilizers and pesticides. Before demfarms, farmers used only local varieties and did not use fertilizers and pesticides for secondary crops. After demfarms, the proportion of participant farmers using fertilizers and pesticides was high for secondary food crops and has spread to farmers outside the demfarm areas.

On the other hand, the use of improved seeds significantly decreased after demfarms. The primary reasons given was the unavailability of such seeds (soybeans, for example). In the case of hybrid corn, seeds were available but the prices were considered too high and some farmers found the new varieties not suitable for local taste or susceptible to pests (i.e. open husks). Also, the hybrid corn seeds required higher fertilizer inputs in order to obtain optimum yields. Furthermore, farmers usually save the hybrid corn seeds for planting the second or third time and this usually results in reduced yields due to the loss of vigor after the first crop.

The evaluation team found mixed results in the performance of pre-and post-harvest equipment provided by the project. Some was found useful, but other equipment was not suitable to local conditions. Calculations by the Agro Economic Survey Foundation indicated that if these equipment inputs were converted to a monetary value equivalent (i.e. 2,555,000 rupiahs per unit demfarm) 33 percent were useful (hand sprayers, drying sheet, blower, sack); 54 percent less useful (draft animal, pedal thresher, soybean, corn, peanut shellers); and 13 percent wasted (plow, harrow, cassava slicer).

Recent developments indicate that some of the inappropriate equipment is being modified by local blacksmiths to reflect local conditions. For example, the evaluation team observed a local blacksmith modifying a peanut sheller to fit the small kernel of the local peanuts.

The increased availability of post-harvest processing equipment has improved the quality of commodities. For example, in Lampung, transportable corn processing equipment has contributed to the increase in export quality corn from 50,000 tons in 1970 to 75,000 tons in 1985.

4. Adoption of Research Technology Packages

Non-rice food crops research technology packages developed under project-funded on-farm trials and distributed to farmers include new varieties of soybean, corn and cassava with higher yields, shorter maturities, and more resistance to pest and diseases; fertilizer recommendations; pests and disease control recommendations; row planting and spacing; and improved non-rice cropping patterns on upland and rainfed areas.

Adoption of the complete package of technology had mixed results due to the complexities of the recommendations. More experienced farmers had no difficulty following the recommendations, but newer farmers found the technical package complicated. Use of pesticides and fertilizer tended to be more sustainable than use of improved seed (which was not always readily available).

The long-term effects of fertilizers on multiple cropping needs to be determined.

5. Research-Extension Linkages

The evaluation team believes that one of the important outcomes of the demfarm experience in Indonesia has been to strengthen the research-extension linkage, especially at the provincial level. The demfarms offer a sort of information feedback mechanism among researchers, extension agents and farmers, so that adaptation in technology and extension methodology could be made to assure suitability to farmer realities. One example of the results of this closer cooperation is that soil problems are now identified more correctly and soil fertility recommendations are more site specific. Conflicts have not arisen between research and extension since the division of labor between the two is clear.

6. Public-Private Sector Linkages

Regional universities were contracted by the project to conduct baseline and marketing surveys. The results of these studies are being used by project management to monitor project progress.

Private sector cooperation with extension has been improved with the development of demfarms. For example, improved varieties of hybrid corn seeds were provided by private companies for the demfarms. A pest control management course for farmers was sponsored by a private company. And local blacksmiths modified post-harvest equipment for use by a farmer group.

However, there has been a lack of active involvement in the project by BULOG, the Indonesian Rural Bank (BRI), and the Ministry of Cooperatives. The project paper clearly envisioned their participation in the project.

7. Sociological Impact

The demfarms have been instrumental in changing the relationship between farmers and technicians, particularly extension agents. Group farming made it easier for the extension agent to reach more farmers efficiently and effectively. Although most of the farmer group existed before the introduction of demfarms, the demfarms made them more functional. Members of the group worked together in handling production inputs, cooperated in land preparation, and shared market information.

The demfarms have also created a greater awareness among farmers of the need for bringing in new methods and technologies. The high rate of adoption (i.e. the changes in cropping patterns) reflects a profound change in the farmers' attitudes. Demfarm participants also acted as agents for change by inviting members of non-participating farmer groups to adopt the introduced farming practices, although they had to provide their own inputs. This created a ripple effect and spread the technology outside of demfarm areas.

8. Sustainability of Production Increases

The increased secondary food crops production is sustainable. Several factors contribute to sustainability: Benefits from the development of technology (by the Food Crops Research Institutes of the Agency for Agricultural Research and Development (AARD)); technology transfer (by the Agricultural Services); use of production inputs (project revolving funds, lending institutions, farmers resources); favorable government price policies; and functioning farmers groups. Evaluation team interviews with GOI officials and farmers groups suggest that these activities will be continued after the end of the project. In addition, some provinces, such as South Sulawesi, have already provided local revolving funds for their farmers.

Regarding the question of the project's cost effectiveness, this can only be determined by detailed economic rate of return calculations or by detailed enterprise budget analysis. We found no evidence that this has been done. Also, the cost of other alternatives to introducing new technologies into an existing farming system need to be known. We found no such comparative studies. Again, its important to consider from whose point of view one wants to determine cost effectiveness. One may draw entirely different conclusions when the issue is viewed from the point of view of USAID, GOI or the farmers affected by the project's activities. If the project is determined to be cost ineffective from the point of view of USAID's objectives then we must look at USAID's objectives.

Lower cost options of current field methodology have been developed. For example, five hectare demfarms consisting of 5-10 farmers have been expanded to 25 hectares involving 50-60 farmers. By doing this, it has reduced the project input cost per hectare from \$778 (Rp 1,400,000) for the five hectare demfarm to \$244 (Rp 440,000) for the 25 hectare demareas. Distribution of inputs will be selective based on farmers needs and not on a predetermined package, further reducing input costs.

Maximum progress will continue as long as fertilizer is available. Fortunately, urea and triple superphosphate fertilizers are being produced increasingly in Indonesia.

9. Use of Chemical Fertilizers

The high technology bias of the project's research results to date may contribute to a probable decline in the soil fertility. Experience in some parts of the world has shown that continuous cultivation of fields always effected soil fertility adversely but that, with more intensive cultivation--two or three rather than one grain crop a year--the process had accelerated.

The evaluation team expresses serious concerns about the increasing use of chemical fertilizer for secondary food crops grown on ricelands. Before continuing such recommendations to farmers, the long-term effects (i.e. possible interaction leading to unavailability of some nutrients) must be investigated before it does irreversible damage to

the productivity of ricelands. Long-term consequences should not be overlooked for the benefit of short-term gains in production.

B. Impact of Training

1. Introduction

Training is one of the four major components of the project, and is particularly intended to accelerate the achievement of project objectives such as:

- Rapid adoption of recommended production technology using improved agricultural inputs in an appropriate cropping system.
- Improvement of the quality, storage ability and market acceptance of secondary food crops, and the nutrition level of farmers.

2. Training Strategy

The project training strategy utilizes a practical, non-academic approach, a short-term training period (in-country and abroad), and a focus on preparation and implementation of project activities. Training program participants have been selected on the basis of their involvement in SFCDP programs. The training was effective and was even expanded to include several short course trainings outside the project paper. The training needs of the project staff, PPLs and farmers are greater than what could be reasonably achieved during the life of the project.

Another important feature of the project's training strategy which goes beyond the project paper is the institutionalization of the training by building up a core group of field trainers. In this way the sustainability of the project and training activities could be maintained. It is anticipated that by the end of the Project period, a sufficient number of participants both at the farm level and at the project regional office will be trained as trainers and able to continue the bulk of the secondary food crops training programs without external assistance.

3. Training Implementation

Three types of training have been implemented by the project:

- Formal training (in country and abroad)
- Informal training
- Induced training.

a. Formal Training

During field visits, we asked many times if there was a need for long-term formal training abroad and the replies were always yes. There are strong reasons for these kinds of activities to be followed, including: (1) Needed training abroad provides a long-term contribution to the nation's agricultural development (benefits may accrue for 20-30 years); (2) High ratios of social and economic benefits to costs are evident for this type of activity; (3) Funding can be committed for periods extending beyond the duration of an individual project; (4) Meaningful professional relationships can be formed with institutions and professionals abroad, important sources for professional linkages in the future.

Ideally, the steps for this type of activity should include the following: (1) Identify possible academically high performing candidates with an interest and potential in desired professional fields; (2) Provide EAP and ILT to enable candidates to pursue their studies; (3) Provide or seek support from appropriate institutions for research and academic advisory involvement in Indonesia and on Indonesian problems. Ideally this should be at universities with strong agricultural development programs and current or past projects in Indonesia but by no means should other universities be excluded from consideration.

Language should not be an obstacle to long-term training abroad. A person's motivation and capacity to learn should be the prime considerations. If these are met, language training becomes secondary and can be done more quickly in the country where the candidate is to study. Trying to learn English while working full time in a non-English environment is difficult.

Several other options regarding training abroad might be considered: (1) Do not limit candidates to only GOI officials, (2) Do not tie all long-term training to a specific position, (3) Organize ILT and EAP classes specifically for a project and allow prospective candidates to join such classes, and (4) Expect university or buy-in contractors to assist in the selection and placing of Indonesian candidates in appropriate graduate degree programs.

b. Informal Training

Implemented informal training courses include:

- Transfer of knowledge from TAs to the project staff counterparts. There were eight foreign TAs and one national consultant posted to the project (three stayed in Jakarta).
- Several special project demonstrations for farmers, traders and artisans, including:

TABLE 1**PROJECT TRAINING PARTICIPATION**

TYPE OF TRAINING	NUMBER OF TRAINEES		
	Target	Realization	Percent
In-Country Training			
Training for PPL, PPUP, PPS, field project staff, and village officials	750	420	56
Training for key farmers	1,920	1,740	91
Training for traders	510	510	100
Training for artisans	180	180	100
Training for KUD staff	450	450	100
English training	92	70	76
Computer training	20	-	0
Project management training	20	20	100
Integrated pest management training	300	300	100
Training to increase the capability of project staff	62	-	0
Sub Total	4,292	3,690	79
Overseas Training		Person-Month (PM)	
Cropping system	78	-	0
Post harvest	100	-	0
Grain storage and marketing establish mgmt. agrcltre.	32	9	28
Application and dif. of agricultural research	12	0	0
Project implementation	14		7

TABLE 1 (CONT.)

TYPE OF TRAINING	NUMBER OF TRAINEES		
	Target	Realization	Percent
Overseas Training (cont.)		Person-Month (PM)	
Small farmer credit	6	-	0
Cooperative organization	6	-	0
ASEAN comparative study	4	4	100
Seminar/special course in USA	2	2	100
Training course of techno- logy transfer	12	12	100
Privatization of technic and development in USA	2	2	100
Biotechnological nitrogen fixation for extension workers in Thailand	7	7	100
Sub Total	275 PM	37 PM	13
Total	1,318 PM	857 PM	65

Source: Project report, 1990

TABLE 2

TARGET AND REALIZATION OF TRAINING

TYPE OF TRAINING	NUMBER OF TRAINEES			
	Target (PM)		Realization	
	Project Paper	Project DIP	PM	Percent (from project DIP)
In-Country	520	1,043	820	79
Overseas	98	275	37	13
Total	618	1,318	857	47

DIP = Government Development Budget

* Several overseas training activities could not be implemented, due to English language deficiency of participants (particularly from regional office); and project coordination between agencies involved, such as Bulog, BRI, Cooperative, AARD, and AETA.

- » Post harvest demonstrations. There were 149 unit demonstration in 13 districts during a six-year period, attended by 2,980 key-armers and 1,990 artisans and traders.
- » Menu demonstrations, which have been implemented for one year (1988/1989) in three provinces (Lampung, East Java, and South Sulawesi), and attended by many women's groups from villages.
- Seminars, special meetings, monitoring and evaluation. Several seminars have been implemented at the agricultural research office and at the project office and attended by project staff, extension agents (PPL, PPUP, PPS) , researchers, and policy makers.
- Special meetings and annual evaluations at regional and national levels, attended mostly by project staff and policy makers.

c. Induced Training

Induced trainings consist of:

- Second generation of formal training, in which trainees from the project train others (such as farmers, traders, artisans and other project staff).
- On-farm research and farm field days on demfarms. These have been held on 168 units for the three provinces (Lampung, East Java, South Sulawesi), with 2,188 farmers owning 760 hectares participating during the six-year period from 1983/1984 to 1988/1989.

4. Training Results

The result of the project training could be judged by two types of indicators:

- *Quantitative indicators*, which consist of the number of trainees/participants, realization of training funds, food crops production, etc.
- *Qualitative indicators*, which have been used to identify project training effective in increasing the skills, productivity, and job responsibilities of GOI officials. For formal training both in-country and overseas, the evaluation looked at two types of trainees: (1) government and project officials, and (2) farmers, traders and artisans.

a. Quantitative Indicators

- The project's formal training activities for domestic trainings have been completely implemented and 79 percent of total expected trainees have attended the courses.

Trainees from the farm level (such as farmers, traders, artisans, village officials and staff from village cooperatives (KUDs)) have participated fully. But trainees from government only attended 68 percent the courses.

- For overseas training, the number of participants trained is only 13 percent of the target of 275 person/months. English language problems of participants and lack of communication among agencies were the main constraints. Due to the inconsistency in the project management in Jakarta, the coordination among different agencies (DGFCA, COOPS, BRI, AATE, AARD and BULOG) was not smooth. Trainees from these agencies (outside DGFCA) who could have benefitted from attending these courses were very limited. On the other hand, the language barrier for DGFCA trainees (particularly from the provincial level) is so significant that they could not pass the English test. In addition most are not able to attend full-time the English courses which have been held in Jakarta and at the provincial level.
- For informal training, particularly for employment of project technical assistance, the lack of designated project counterparts assigned to work together with the TAs made the transfer of knowledge difficult. In addition, not all TAs have fully understood the government agricultural policies and financial regulations. However, many project staff members and policy makers in DGFCA have realized the benefits from the special training (such as computer training and agricultural planning and projection). From post-harvest demonstrations and menu demonstrations, many artisans, traders and village women have benefitted from the training. Several post-harvest artisans in Central Lampung (such as Muara I artisan, Metro, Central Lampung) have been able to build the corn shellers and soybean threshers which were designed and demonstrated by the project. Also, the village women in Nganjuk District, East Java have successfully demonstrated the several types of nutritious palawija menus suitable for market (as the result of menu demonstration held by the project).
- For induced training, particularly from project demfarms, it is shown that the number of farmers who have participated directly in the development of demfarms has increased significantly (from 2,993 in 1983/1984 to 7,567 in 1987/1988 for East Java, Lampung and South Sulawesi).

From our field visit, it was seen that:

- In South Sulawesi (Bone District): From one demfarm (five hectares) with eight farmers in 1985/1986 to 80 farmers by 1989. It also induced the private company of PT. Aurora Sabang Satia to become a soybean nucleus estate with these demfarm farmers and has influenced a total area of 963 hectares with about 1,659 farmers participating.

- In East Java: In Banyakan Village, Grogol Subdistrict, Kediri District, from one dem-farm of rainfed sawah of five hectares with nine farmers in 1987/1988 to 28 farmers by 1989/1990, covering 14 hectares.
- In Lampung: Tani Maju Farmers' group of Margakencana Village, Abung Timur Subdistrict, North Lampung, from one demfarm of five hectares and 10 farmers in 1984/1985 to 16 hectares and 33 farmers in 1987. In 1989/1990, this increased to more than 50 hectares inside the demfarm and 150 hectares outside, with almost 410 farmers participating.

b. Qualitative Indicators

- The trainees of PPL, PPM, PPS and project staff, were interviewed during the field visit to the Rural Extension Centers (REC) in Abung Timur-North Lampung, Bulukumba-South Sulawesi, and Naibatu-Kupang-Nusa Tenggara Timur (NTT). It was found that most of them had implemented follow-up training to farmers or others after the first project training. Their motivation to help others with the new technology and improvement in palawija development increased significantly and concomitantly with the increase in their skills and attitudes. So far there is no change in their job responsibilities or assignments but they are still able to use their training experience for their target groups.
- The project training for key farmers, traders, artisans and KUD staff in demfarm areas has positively impacted their skills, attitudes and motivations. They are now able to implement an improved cropping system and to work as a group and extend their knowledge to other groups inside and outside the demfarm group. Artisans are now able to produce modified post harvest equipment more suitable for the farmers' needs.
- Domestic and overseas training for project staff and other government officials were given for project management training, integrated pest management, and ASEAN comparative studies. The training has led to progress in:
 - » Project monitoring and evaluation reports which have been done regularly (both financial statements and quarterly and annual progress reports)
 - » Formulating palawija planning and programming for Repelita V. Those who received training are now able to generate food projections for formulating the agricultural policy adjustments and planning. The resource allocation (budgeting, personal and equipment) for palawija in DGFCAs' Repelita V, has been given high priority compared to Repelita IV. For cassava and corn, the government would like to increase the export target to the EEC and Japan. For soybeans and peanuts, an increase of production is a must, and more new technologies for intensification programs have been developed through research and development (e.g.,

Opsus and Insus). Better marketing and post-harvest facilities for secondary food crops have been given high priority both in research and extension and agro-industry involvement. A secondary food crops investment policy and program has been laid down by the government and issued to cooperatives and the private sector for implementation. Prioritizing the location for the eastern part of Indonesian for secondary food crops development (particularly for NTT, Nusa Tenggara Barat (NTB), South East Sulawesi, and North Sulawesi) will start in the second year of Repelita V. President Suharto and the Minister of Agriculture have made clear statements concerning this policy.

- » Linkages have been made between research, extension and farmers as a result of joint trainings, seminars, meetings and discussions among researchers, project staff, agricultural extension workers (PPS, PPUP, PPL) and other food crop agriculture service officials. The linkage can be seen in the relationship at on-farm trials, farmers' field days and project demfarms, such as in Kupang District-NTT, Nganjuk-East Java, and Bone-South Sulawesi.

5. The Role of Women in Project Training

The policy and programs of project training have not been allocated directly to women, although they may and do participate in the training activities. However, not many women trainees have been included in the training activities. Those who have participated include several women from PPLs, farmers and KUD Staff. Several PPL-women in REC Naibatu-Kupang-NTT, indicated that the project trainings were useful and that they were able to transfer their knowledge to other farmers.

Informal training programs directed to women in villages and subdistricts consisted primarily of menu demonstrations. These began in 1988/1989. Women in Nganjuk, East Java said the informal menu demonstrations were very useful, encouraging them to participate in cooking non-rice meals for their families and increasing the job opportunities for women in producing and selling the non-rice food to market.

6. Prospects for Secondary Food Crops Training Programs for Future Development

Several training programs on secondary food crop financed by the GOI and other foreign donors have been implemented. The projects which included a training component in their project activities were the National Agricultural Extension Projects (NAEP) II & III (under the World Bank loan); the Seed I & II Projects (under the World Bank loan); Japanese grants and loan (OECF Seed Project); EEC grants on seed development; and the FAO/UNDP trials and demfarm project.

The training activities which have been funded by the World Bank under NAEP III in Lampung Province are shown in Table 3. From Table 3, it can be concluded that :

- The secondary food crop training for extension workers and food crops agricultural service officials in provinces, districts and subdistricts can still be conducted under NAEP III, even though USAID support for SFCDP terminates.
- PPLs became more acquainted with secondary food crops rather than rice (as happened before Repelita V which mostly concentrated on rice).
- Other important contributors outside of the government which help provide technical assistance and supplies are private firms, such as agro-businesses and agro-industries which have contracts with farmers and serve as a nucleus for introducing new technology. In addition to providing agricultural inputs to farmers, the agro-industries also train farmers in secondary food crop technologies. This has already happened in Bone with PT; Aurora Agro industry (for soybean); in Central Lampung with PT; and in Sahang Bandar Lampung (for maize).

7. Lessons Learned

- The project trainings for key-farmers, traders, KUD staff and artisans have successfully increased their skills, knowledge and attitudes. They are now able to implement a better cropping system; work better as a group; and extend their experiences to other farmers inside and outside the demfarm. They now realize the relationship between the increase of palawija production and their income. The traders and artisans have also been able to produce the modified post harvest equipments more suitable for the farmers' needs.
- Training programs for project staff and food crops agriculture service officials at the national and provincial levels have improved the ability of participants to formulate palawija national and regional policies and planning for Repelita V. They are now able to conduct better project monitoring and complete evaluation reports regularly.
- The significant impact of informal training programs directly to women can be seen in menu demonstrations, during which the village women through PKKs are able to produce nutritious palawija foods to sell in local markets

8. Recommendations

- Soften requirements to pass the English test for overseas training.
- Increase the number of joint training programs between researchers, PPLs, project staff and agricultural service staff in provinces and districts.
- Accommodate the institutionalization of training to build up a core group of field trainers. The increase of the agro-industry role in secondary food crops production

TABLE 3

SECONDARY FOOD CROPS TRAINING:

ACTIVITIES UNDER NAEP III IN LAMPUNG FOR PELITA IV

YEAR	Type of Trainings (days)	Training Period	Number of Training
1985/ 1986	Post harvest training (in Soybean & Corn) for PPL & key farmers	3 times, 7 days each	PPL = 59 Key farmers = 27
1986/ 1987	Training on Soybean & Corn Cropping Pat- tern for PPL & key farmers	3 times, 7 days each	PPL = 57 Key farmers = 30
1987/ 1988	Corn & Soybean and Beans development training for PPL & Food Crop Agriculture officials	8 times, 7 days each plus one time for 13 days	PPL = 217 FC Crops agric. service official = 20
1988/ 1989	Cropping Pattern and Post Harvest training for PPL	2 times, 7 days each	PPL = 60
1989/ 1990	Soybean development training for PPL	7 days, (one time)	PPL = 29

and in training through PIR/NES system has to be promoted and intensified to help with project sustainability.

- Implement follow-up training to farmers, which could be done by extension workers.

C. Impact of Special Studies

A third component of the project was special studies on agronomic, socio-economic, marketing and policy aspects of non- rice food crops in Indonesia. These special studies included baseline and evaluation surveys and feasibility studies.

Baseline surveys for the provinces of South Sulawesi, East Java, and Lampung conducted by regional universities were completed in 1984. They were to be used for monitoring and evaluating the project's progress.

Because the original objectives of the project outlined in the project paper were unrealistic, the baseline surveys did not identify simple and usable indicators that could be used by project management. In addition, the disproportionate amount of time devoted to the financial aspects of the contracting procedures left little time for discussing the technical aspects of the study. This resulted in a baseline study which contained an impressive amount of data but did not produce simple and practical guidelines for project management.

In 1989, the verifiable indicators for measuring project accomplishments were revised to reflect a more realistic project objectives. Baseline surveys for the provinces of East Nusa Tenggara, West Nusa Tenggara and West Sumatra. These were based on the lessons learned from the first baseline surveys, project management found these latest baseline surveys more useful.

Multi-phase marketing studies conducted by regional universities were not utilized by project management at the start of the project. However, current project management has found the studies useful because the scope of the project has expanded from technology dissemination to include marketing considerations. The study on rural income and employment effects of rice policy in Indonesia was requested by the GOI to support development of food crop strategies for their next five-year plan. Stanford University's Food Research Institute conducted a two-year study on this topic and presented four inter-ministerial seminars, which included the highest ranking officials from BAP-PENAS, BULOG and the MOA. Results from this study were used directly by the GOI in the development of strategies for the agricultural sector, including the annual rice production growth targets for 1989-1993. The target of three percent allowed for "trend self-sufficiency" which in turn permitted the government to embark on a serious program of food crop diversification. Stanford's work under the SFCDP has been highly instrumental in curbing the encroachment of rice expansion onto corn, grain legumes, cassava, and other secondary crop hectareage.

Fertilizer subsidy studies by Stanford University have been used by the GOI to implement a policy of gradually reducing the subsidy on fertilizers until it will finally be abolished.

The study on supply and demand for food crops in Indonesia, conducted by Steve Tabor, provided guidelines to the government on future food crop policy options, with special emphasis on prospects for food sector diversification. It developed tools for producing quantitative estimates of commodity supply and demand under a range of policy regime alternatives. It produced evidence that corn and cassava demand are more sensitive to changes in rice prices than to changes in their own prices. Tabor's study alerted the GOI to the direct competitive process in the staples market between demand for food, feed and industrial processing. He showed that demand for soybeans, mungbeans and peanuts will continue to be strong as income rises. Demand for each of these commodities is sensitive to price policy interventions. Efforts by the government to contain demand growth by promoting high prices results in higher rates of growth for the other substitute luxury staples. The government has adopted a more coordinated approach to price policy planning as a result of this study.

Another study by Steve Tabor, on the price and quality of food crops agriculture in Indonesia, identified economically important food crop quality characteristics and assessed the effects of these qualities on demand patterns. It further analyzed the transmission of the quality signals in the marketing system and identified the scope of increasing producer incomes by improving product quality. The report disclosed that the BULOG floor price system provides a poor guide to the structure of incentives offered in the private trade. As a result BULOG is re-examining its pricing structures to determine if adjustments should be introduced. A separate set of studies were conducted on rice and for the other major staple foodstuffs. Policy implications included the development of information markets to improve transmission of price signals. Improved product grading and labeling and wider transmission of product quality information are needed. Recommendations from this study were adopted in Repelita V.

Food and agricultural policy studies conducted by Iowa State University have been widely used in designing and evaluating Indonesia's food and agricultural policy. Under the project, production and distribution system models for rice and major secondary food crops have been developed. The system is also being used by the Ministry of Agriculture to evaluate food crops policy in the preparation of Repelita V.

Technology impact studies conducted by the Agro Economic Survey Foundation have been useful in assessing the impact of farm technologies introduced by the project.

The biological nitrogen fixation study by the NIFTAL Project of the University of Hawaii has contributed to the current training of Indonesians on biological nitrogen fixation in Thailand.



Village womens association meeting, PKK



Womens demonstration menu, PKK

2007

Other Special Studies (See Appendix F) have also been found useful by project management in implementation activities.

The evaluation team could not review all documents provided in depth, but some of them were clearly very well done, demonstrating considerable skill in econometric and economic analysis. The range of authors indicated a high level of collaboration with Indonesian counterparts. However, our review of a sampling of reports shows the need for a peer review system. For example, the publication *The Impact of Palawija Demonstration Farms on Farmers Socio-Economic Condition In Kapbupaten Bone, South Sulawesi* is an excellent descriptive study of the demfarm concept and its application in South Sulawesi, East Java and Lampung. The report states exactly what is needed by implementors and policy decision makers in carrying out their roles. The authors of the report, which is written in English, are all Indonesians. Although the report is excellent in content it is written in very poor English. The authors should have asked for or have received editing assistance from the project.

D. Impact of Technical Assistance

The evaluation team's interviews with GOI and USAID officials indicated that the mix of long- and short-term technical assistance has been responsive to the needs of the GOI and USAID. The outputs of project technical assistance teams have been fairly consistent with USAID and GOI longer term involvement in the agricultural sector. In general, the effectiveness of the technical assistance in achieving the respective stated goals and terms of the contracts has been satisfactory.

The GOI has utilized Stanford University's technical assistance to support food policy studies and the Iowa State University Center for Agricultural and Rural Development's (CARD) technical assistance to improve the capacity for policy analysis and support the formulation and implementation of a more market oriented food crops policy conducive to Indonesia Repelita V's agricultural objectives (see section on special studies). However, the use of graduate students by Stanford University to conduct the studies and write the report without training Indonesians was not helpful in promoting a sustainable transfer of knowledge.

Mixed success was found regarding the TA of the Academy for Educational Development (AED)/Communication for Technology Transfer to Agriculture (CTTA) to continue the policy studies initiated by Stanford and to assess mass media techniques for cost-effectiveness relative to demfarms. The most significant contributions of the AED/CTTA technical assistance were in the training of Indonesians to perform simple economic analysis on policy studies, and in computer training. Pilot communication techniques have been developed in East Java but no monitoring on farmers' usage was conducted and thus impacts are not known. However, we were told of the excitement caused by the calendars prepared with pictures illustrating good farming practices, the importance of pest control, the proper placing of fertilizer and nutritious menus that

could be prepared from palawija crops. There is nothing new about giving calendars away, but the information on the calendars is new and was carefully developed in three different languages and three different versions to correspond to three different types of farming areas.

We were also told of the unexpected boost in office morale when PC computers were placed in certain offices. This chief of the office was able to respond the same day to his minister's request for information; without the PCs it sometimes took two weeks. Many professionals in the office were willing to work extra hours to learn how to use the computer.

The late arrival of the contractors and the bureaucratic delays in the release of funds from both USAID and GOI have impacted on the performance of the contractor team. The selection of technical assistance personnel with no U.S. experience in either research or extension also seems a poor choice of administration. The comment was made that "you just can't find Americans who can speak Indonesian and are willing to spend a long time in Indonesia." If U.S. experience in research and extension is not a requirement (and of course, we are not suggesting that these are the only desirable attribute for a TA) then Indonesians could probably be found or trained to carry out these activities.

The team did not meet with all of the TAs. Even if we had, it would not be possible to identify or specify quantifiable responses to their particular input. On balance the comments were very complementary of the individual TAs professional competence and cultural adaptability. Some criticism was raised that some TA's did not understand or perhaps not know how to overcome the administrative obstacles presented by USAID and GOI. Perhaps USAID should look into this further to see that its role is viewed as more positive, or at least as positively as other donors in the development picture.

Some suggestions that were made to the team included:

- Provide better instructions for TAs who must work through USAID to meet legal and administration requirements. The back and forth method sometimes followed is time consuming and can delay project progress.
- Simplify procedures for implementing projects. Some examples mentioned to us were projects of the World Bank, UNDP, Canada, France and Japan.
- Make better use of project proposal procedures on the part of USAID. It should also be made clear which funds are to support a particular TA's activity. Apparently, with this project, decisions were sometimes slow in coming and required several tries before approvals were given. By then, sometimes, it was too late for the work to be done. Perhaps an extended briefing for chiefs of party on exactly how to present and channel requests might be appropriate.

The team did note that the ability to communicate in Indonesian was given a very high priority. It seemed at least as high or higher than professional competence. Although the benefits from this are recognized as far as cultural and interpersonal relationships are concerned, it can also take away from the time available for professional input and may even have a negative effect in that the professional input is concentrated at too low a level to effectively have an impact on policies and programs. If U.S. experience in research and extension is not a requirement, then Indonesians could probably be found or trained to carry out these activities. In fact, the training of Indonesians to carry out these kinds of policy analysis activities was overlooked in setting up this project.

The TAs with whom we visited all appeared to be well trained and experienced in the areas for which they were responsible. All were fluent in Indonesian. Every one we met appeared to have made a significant contribution to the advancement of the SFCDP objectives and goals. No one appeared to be timid in pushing and shoving the bureaucracy to get the resources provided in the project for their particular responsibility. As far as could be determined, all were very professional in their attitudes but were sometimes frustrated by the lack of understanding and support for what it takes to accomplish stated objectives in the very limited time frame for their participation in the project. Some had to bear the brunt of criticism that "they acted like it was their project" when in fact it was the contention of some in both the GOI and USAID bureaucracies that the TAs did not understand the importance and necessity of going through administrative channels.

E. Impact of Agricultural Credit Lines

1. Introduction

The SFCDP was directed primarily to increase the income and welfare of farmers and their families through the rapid adoption of improved production technology in cropping systems and post-harvest technologies. To achieve these main objectives, the credit facilities in the intensification program and under the selected rural credit institutions program were to be provided by the GOI. On both demonstration farm under the Project and intensification program, the KUD and private dealers were encouraged to procure secondary crops. The rural credit institutions (such as BRI) had the responsibility to provide credit facilities to farmers, pre and post-harvest artisans, secondary food crop traders, and other secondary food crops home-industries in the project areas.

Several indicators have been used to assess the project credit impact:

- Availability of rural agriculture credit source
- Borrowers' ability to use the credit system

- Impact on production, income and employment opportunity.

2. Organization of Rural Agricultural Credit

The main source of funds for agriculture and rural credit are the Bank of Indonesia (BI) liquidity credits and saving deposits. After the financial reforms of 1983, BI credit to agriculture increased in nominal and real terms and relative to agricultural loans outstanding.

According to the World Bank review study on the rural credit sector, less than three percent of the total rural credit is granted on an unsecured basis. This limits the access to credit of low income groups which do not possess land and property for collateral. An increasing proportion of agricultural credit is devoted to term credit (24 percent in 1980 to 53 percent in 1985). The downward trend in short-term lending is primarily attributed to the decline of the Bimas Program, which provided short-term production credit to farmers for rice production in the 1970s.

In Indonesia, there are more than 17,000 rural financial institutions (RFIs) defined as entities performing some kind of financial intermediation at or below the subdistrict (kecamatan) level. They can be classified into four groups : (a) 2,272 BRI unit desas supervised by BI; (b) secondary banks supervised by BRI on behalf of BI which include 175 petty trader banks (Bank Pasar), 3,364 village banks (Badan Kredit Desas), 217 village production banks (Bank Karya Produksi Desa), and 2,065 paddy banks (Lumbung Desa); (c) 479 pawnshop and 6,786 KUDs supervised by the Ministries of Finance and Cooperatives, respectively; and (d) about 2,000 nonbank financial institutions, such as the Small Credit Program (Kredit Urusan Rakyat Kecil) in East Java, supervised by the regional development banks (Bank Pembangunan Daerah).

The five state banks dominate the agricultural credit scene, accounting in December, 1985 for about 73 percent of the total assets of deposit money banks, 74 percent of total loans outstanding, and 67 percent of total funds. BRI, the main conduit for rural credit, operates 297 branches, 2,272 unit desas and 1,226 village posts nationwide and has the most extensive banking network in rural Indonesia (See Appendix K, Table 3).

The final evaluation of the project will concentrate primarily on identifying the impact of rural secondary food crops credit managed by BRI, KUDs and the revolving fund allocated by the project for farmers in demfarm areas.

3. Credit Impact and Lessons Learned from Provincial Visits

Four of the six project provinces were visited during the evaluation: South Sulawesi, East Java, Lampung, and NTT. Each visit followed a similar pattern. The primary objective was to meet with BRI staff, KUD managers, farmers groups, traders, artisans, and secondary food crop home industries. Topics discussed were their activities and

progress, needs for and problems with credit, and many other issues related to the credit facilities and linked with secondary food crops development.

a. Credit Used For Secondary Food Crops Intensification Program

The supervised credit system or Credit got Intensification (KUT) program, which started in 1985/1986, is most commonly used for secondary food crops intensification. Before that, the Bimas Credit System (through farmer groups or individuals) was supplied to farmers who participated in the Bimas intensification program.

According to recent data on the secondary food crops intensification program, the realization of the credit intensification program under Bimas and KUD can be seen in Table 4 and 5 and Appendix K, Table 2.

Table 4 shows that:

- For the KUT credit system, the BRI in the District is available to provide credit facilities to farmers who need credit for palawija intensification.
- The number of farmers who join the palawija intensification program has increased tremendously. The number of farmers using the KUT credit system has also increased, but at a decreasing rate not comparable with the increase of area planted. Either the KUDs are functioning inefficiently in credit administration or have arrears problems.
- The impact of the palawija intensification credit system on area planted has been very successful in South Sulawesi, East Java and Lampung, where yearly percentage increase in palawija Pelita IV was 50.53 percent, 84.72 percent and 49.3 percent, respectively.

b. Credit Facilities for Secondary Food Crop Marketing, Home Industries and Agricultural Equipment

Credit facilities for secondary food crops security (stock) have been channeled to KUD from BRI through BULOG. Data from Lampung province (particularly corn) show that:

- Credit facilities to buy farmers' crop production (particularly corn) by KUD are available.
- Due to the decreased in the BI liquidity for credit source in this "subsidized credit," total credit has decreased.

TABLE 4**REALIZATION OF PALAWIJA BIMAS IN INDONESIA**

Realization 2nd Food Crops Bimas in Indonesia						Credit repayment	
Year	Area (Ha)	%	Farmer Recvng Credit	Credit (Rp)	%	(Rp)	%
1980	165,905	17.9	155,061	5,605,740	17.6	4,387,373	78.3
1981	160,125	23.6	147,426	6,517,238	25.4	3,983,955	61.1
1982	218,425	27.6	253,272	9,882,823	30.4	5,767,917	58.4
1983	194,516	18.7	228,540	9,721,382	19.5	6,012,412	61.8
1984	50,568	8.5	58,426	2,430,343	7.4	1,747,092	71.9

Source: Bimas, 1990

TABLE 5**KUT CREDIT SYSTEM IN SELECTED PROJECT PROVINCE
(RP 1,000)**

Province	Realization of KUT Credit System				
	1985	1986	1987	1988	1989
South Sulawesi	a. 47,695 b. 57	51,556 6,148	959,142 393,83	357,133 217,616	167,295 131,327
East Java	a. 1,156,760 b. 8,207	494,690 2,151	723,46 45,355	4,259,506 179,506	1,585,930 186,333
Lampung	a. N/A b. N/A	573,252 0	860,425 6,400	4,459,017 534,384	8,464,103 3,495,539

Source: Bimas, 1990

Note: a. = KUT Credit Realization
b. = Credit Arrears
NA = Not Available

Individual farmers and KUDs have no problem getting agricultural equipment credit from the BRI in their districts. Data from Lampung Province (Table 7) show that:

- The credit to buy and process agricultural equipment such as hand sprayers and post-harvest facilities is fully available at project sites.
- Arrears of 87.6 percent and 82.5 percent from credit 1983/1984 up to 1989 is bigger than expected. This is because the KUDs still are not functioning well.

c. Revolving Fund

The idea to use the project fund for agricultural inputs in the demfarm as a revolving fund can be viewed as credit for farmers. With the interest rate at two percent monthly, they are supposed to pay back these agricultural inputs after harvest directly to the farmer group. This kind of aid was expected to revolve continuously. In the future, farmer groups and farmers in surrounding demfarm units could use the benefits of these funds as a tool to develop further secondary food crop intensification programs for production, and for post-harvest activities. Conclusions on the impact of the revolving fund as a tool of credit are as follows:

- The revolving fund is beneficial for farmers who actually need cash to buy the agricultural inputs. Several farmers told us they usually borrowed cash from traders or Kios with a 10 percent interest rate per month (according to farmers in Kibang village, Central Lampung) or six to eight percent per month (from farmers in Nganjuk, East Java).
- The revolving fund can be used as subsidized credit for farmers to buy agricultural inputs. This view can be justified from the research report by the Agro-Economic Survey Foundation on the impact of palawija demfarms on farmers' socio-economic conditions in Bone, South Sulawesi. The report found that three of 10 demfarms were successful in revolving the fund they had received from the project. The money of this fund was always in the hands of farmer-borrowers and never kept by the farmer group for long. Regulations for the practice of using credit were made on the basis of deliberations in the farmer group. Funds were returned after harvest, plus 10 percent interest rate (as the result of deliberations).
- The revolving fund can be viewed as a sustainability tool for developing the demfarms to other areas. This view can be justified due to the fact that:
 - » The farmer groups in the village of Selli, Tungke, and Marta-rapuli in Bone, South Sulawesi have been able to revolve their fund for four years (Sinaga's research report on demfarm evaluation in Bone, February, 1989).

TABLE 6

PALAWIJA PROCUREMENT CREDIT SYSTEM IN LAMPUNG PROVINCE

Year	Credit avail: ability in BRI (xRp.1,000)	Credit ta kenby KUD x Rp.1000 (tons)	Stocks bought by KUD from farmers	Stock Sold by KUD	
				to BULOG (tons)	to market (tons)
84/85	183,125	28,386	75,000	-	75,000
85/86	214,505	229,820	2,168,631	814,655	1,953,976
86/87	-	-	-	-	-
87/88	35,000	N/A	N/A	N/A	N/A
88/89	82,480	63,500	N/A	N/A	N/A
89/90	55,400	37,500	N/A	N/A	N/A

Source: Lampung Food Crops Agriculture Service, 1990 Bote

- » The farmer groups in the villages of Abung Timur, Tulangbawang Tengah and Bahuga in Lampung were able to revolve their fund for two to five years (SFCDP report, 1989).
- » The farmer groups visited in Lampung, Marga Kencana, Abung Timur subdistrict, which had initial demfarms in 1984/1985 (five hectares, 10 farmers, capital Rp.3,337,000), still keep a revolving fund and use it to buy paddy agricultural input, since in 1987/1988 the area was changed into irrigated paddy sawah. The revolving fund now has Rp.400.000 (cash on hand), six cows, two harrowers, two plows, two corn shellers, and two paddy threshers. The area for crop intensification with high inputs is now 200 hectares.
- » The farmer groups visited in Nganjuk and Kediri, East Java, have successfully expanded their initial capital from demfarms to many other local farmers. They keep their fund in time deposit in BRI, in cash-on-hand with the farmer group, and in investments in several pieces of agricultural and processing inputs/equipment.

d. Credit for Traders, Artisans and Home Industries

Several rural credit sources are available for traders, artisans and home industries, such as KUPEDDES from BRI (for operational and investment activities), market bank (Bank Pasar) for small traders, etc.

An example is the BRI village unit, Daya Murni, Abung Timur, North Lampung. Established in 1974, it now has seven staff covers two subdistricts. It runs a rural agricultural credit system with the KUPEDDES credit system (available for farmers, trader, home industries, and artisans). Current users include:

- 20 tempe and tofu home industries (with Rp 2 - Rp 3 million credit each)
- Six artisans
- 100 food traders and 700 non food traders
- 13 cassava farmers (who borrowed the credit for the average of Rp 700,000/5 hectares).

Secondary Food Crops Traders: Several traders interviewed during provincial visits (such as Mr. Badulu Nayong, in village Matiro Bulu, Bulukumba, District South Sulawesi) confirmed that with the help of operational and investment credit they could expand their activities buy most of the palawija production for development of a successful demfarm. They now mostly have their own capital and sometimes borrow money from big traders in the provincial or district capital.

TABLE 7

AGRICULTURAL EQUIPMENT CREDIT SYSTEM IN LAMPUNG PROVINCE 1989

Credit (Realization for)			Arrears			
District	Hand Sprayers	Hand Tractors	Hand Sprayer		Hand Tractor	
			(Rp)	%	(Rp)	%
North Lampung	106,443,000	6,110,640	95,629,000	89.8	5,085,640	83.2
Central Lampung	109,800,000	6,110,640	104,145,265	84.8	3,812,825	62.4
South Lampung	161,865,430	6,110,640	131,553,667	81.3	4,410,640	80.4
Lampung Province	378,205,430	18,331,920	229,327,892		13,809,105	82.5

Source: Lampung Food Crops Agriculture Service, 1990

It is notable also that the soybean traders (mostly women) in Nganjuk, East Java, have successfully borrowed from Bank Pasar, the bank most available in the project area.

Post Harvest Artisan: Several artisans (such as Muara I artisan, in Banjar Agung village, Central Lampung) who produced the post harvest equipment designed and demonstrated by the project have been using the investment credit system from district BRI (KIK/KMKP). They said that the credit was available any time at the district level.

Secondary Food Crops Home Industries: Soybean cake/tempe and tahu home industries in Bone, South Sulawesi, Nganjuk-East Java, and cassava chip home industries in Kediri-East Java reported that operational credits from BRI have been very useful in keeping their activities moving.

e. KUD Credit System

The KUD visited in the subdistrict of Abung Timur, North Lampung, indicated that several credits system such as the KUT borrowing and saving system have been successfully managed by the KUD. The KUT credit system is supervised credit from district BRI. Borrowing and saving fund systems are generated by the KUD itself and available for KUD members and others.

f. Private Banking System

Several private rural credit services have been operating in project areas, among them:

Contract-Farmer Private Companies: Aurora Sabang Setia agro-business, which provides the agricultural inputs for farmers in Bone (and also promotes the melted fertilizer PPP) South Sulawesi, has contracted with soybean farmers. It started in 1989 and now it covers 963 hectares (under the name of Opsus Special Operation Taddewe). Under the contract, farmers sell one third of their production (after deducted with the agricultural inputs credit) and may sell for the remaining production, all at market price. Under this type of credit arrangement both farmers and the agrobusiness firms have seen production increases. This type of credit system could be applied to other areas. Several big traders and agrobusiness firms in South Sulawesi, East Java and Lampung have been interested in this type of farmer credit-contract, sometimes called "nucleus private estate management" or NES or PIR.

Rural Private Banks: Several private national banks such as Bank Harapan Sentosa, Danamon, Bukopin and Servita have been in operation in rural project areas to provide credit for farmers, traders, artisans, and home-industries.

TABLE 8**REVOLVING FUND FROM DEMFARM IN BONE, SOUTH SULAWESI**

Village	Capital (agric. Inputs)	Situation in March, 1989			
		Cash (Rp)	Balance in members haved (Rp)	Total Development	
				(Rp)	%
Demfarm 84/85					
- Selli	890,000	706,000	594,000	1,300,000	46
- Tungke	890,000	1,290,000	210,000	1,500,000	69
Demfarm 85/86					
Martarapuli	1,008,125	1,460,000	40,000	1,500,000	49

Source: Sinaga's research report to the project, 1989

TABLE 9**SELECTED REVOLVING FUND FROM DEMFARM IN LAMPUNG**

Sub district	Initial Condition	Situation in 88/89	
	Number of Farmers in demfarms	Number of Development Farmers	New Capital revolving fund (Rp)
Demfarm 83/84			
Abung Timur 1.	30	77	6,715,000
Demfarm 84/85			
Abung Timur 2.	40	121	12,048,000
Demfarm 85/86			
Bahuga	117	205	4,538,200
Demfarm 86/87			
Tulang Bawang Tengah	51	114	3,503,950

Source: Lampung Project Report, 1990

4. Women's Role in the Agricultural Credit System

From the sites and institutions visited, there was no evidence that negative perceptions of women on the part of lenders limit the supply of credit to women. However, several factors can work to the disadvantage. Their lower educational level in rural areas puts them at a disadvantage in preparing loan applications, investment plans and financial statement that lenders require. If loans are targeted to specific economic activities or crops or if land is required as collateral, a husband or male relative is required as a cosigner for loans. Sometimes, if complicated application forms are used or only one loan is permitted per household, lenders are in fact channeling lending away from female borrowers. In cases where lenders made a conscious effort to make credit available to smaller borrowers by eliminating some of three structural barriers, such as in the pawnshops, the participation of women as small borrowers women is high.

In the Nganjuk market district in East Java, it is shown that women-traders in the market usually have borrowed money from the Market Bank. The limited data from the rural credit sector review (World Bank) indicates that Indonesian women participate actively in the rural financial sector. Women are 23.42 percent of KIK/KMKP borrowers; 25 percent of KUPEDDES borrowers (at BRI Unit Desas); and 29 percent of borrowers at one Bank Pasar. Women are a higher percentage of borrowers in non-bank financial institutions such as government pawnshops. From field visit discussions we learned that women also borrow from informal sources such as suppliers, traders, neighbors, money lenders, etc. and have organized traditional savings and loan associations, such as "arisan" and "simpan pinjam" in rural areas. This was found during field visits to farmer groups in Central Lampung, North Lampung, Nganjuk, East Java and Bone, South Sulawesi.

5. Lessons Learned from Credit Impact

The major lessons learned from credit impact are as follows:

- Availability of rural credit sources, accessibility of bank offices, and lower transaction costs through fast and simple administrative and lending procedures, and less reliance on collateral are factors likely to be more attractive features for economically disadvantaged borrowers, including women, than below market interest rates.
- Revolving funds generated from the project demfarms has a direct and significant impact on the availability of agricultural credit to farmers. Indirect impact of revolving funds could be seen in the increase in the number of farmers, areas covered and the palawija productivity under the development demfarm.
- Involvement and participation of contract farmers from agro-business (agro-industry) in developing the palawija production is a must. Their role puts them as an

agent for change and provides the supply of credit for their production of agricultural inputs access to a market.

- Development of linkage between palawija traders (who also have post-harvest facilities) and palawija farmers has had a significant impact on credit facilities for palawija farmers, processing and marketing.
- The KUPEDDES credit system from BRI and available at the subdistrict level has provided credit to traders, artisans, home industries and palawija farmers. The problem of collateral, fast and simple administration and lending procedures should be solved through mutual agreement between bank and lenders.
- To increase the capability of both KUDs and farmer groups to handle the administration and financial procedures in the credit system, on-job training supervised by the state banks (such as BRI) seems to be very helpful.

IV. SUMMARY AND CONCLUSIONS

The SFCDP on balance was a good project. It incorporated a model that had been successfully used in improving rice production. It was a logical policy choice to try to do the same thing for palawija crops. The GOI is committed to diversifying the rice-based economy and increase the production of secondary food crops. The Indonesian farmers seem willing to accept this policy.

Increases in secondary food crops production brought about by the demfarms appears to be sustainable. The number of farmers following the recommended new farming practices is increasing both inside and outside of the demfarms areas. Many farmers are now willing to accept the risks involved in using commercial inputs and higher yielding varieties for secondary food crops. The new technology that is being introduced is dependent on input intensive farming, utilizing improved seeds, fertilizers, pesticides, and some mechanized equipment which require credit and improved rural infrastructure for marketing and distribution of inputs to handle the increased agricultural production.

The non-availability of improved secondary food crops seeds has been a constraint. Hybrids developed by private seed companies have not been widely accepted by farmers because they are more expensive and sometimes do not yield as well as traditional varieties. The various multi-cropping systems recommended were acceptable to the various ethnic groups in Indonesia.

Larger size demfarms (25 hectares or more) are less costly to the project because farmers are expected to finance part of the cost of inputs.

Research-extension linkages have been strengthened, especially on the provincial level. Linkages between public and private sectors have been created as a result of project activities.

Project training programs have trained 3,690 trainees in-country (79 percent of the target) and 37 person/month overseas (13 percent of the target). Training programs have significantly increased the skills of the trainees, particularly extension workers, who have been able to implement follow-up training to farmers. The training of key-farmers, traders, KUD staff and artisans has enabled them to better implement the recommended cropping system. They are also able to work better as a group, and to extend their experiences to other farmers both inside and outside the demfarms. They now realize an increase in palawija production. The traders and artisans have also been able to modify post harvest equipment to better meet the farmers needs.

Training programs for project staff and agriculture officials both at the national and provincial levels have resulted in a direct impact in formulating and improving palawija national and regional policies for Indonesia's Five Year Plan (Repelita V). They are now better able to monitor and evaluate project activities on a regular basis. The significant impact of informal training programs for women can be seen in "menu-demonstrations" during which the village women with the help of PKKs are able to prepare nutritious palawija foods for sale in the local market. The number of farmers who have participated directly in the development of demfarms has increased significantly (from 2,993 in 1983-1984 to 7,567 in 1987-1988 for East Java, Lampung and South Sulawesi). This shows that the project training program has included a large number of farmers on the demfarms and therefore has benefited regional development.

Special studies on agronomic, socio-economic, marketing and policy aspects of non-rice food crops have been used by the GOI to implement policy changes, project monitoring, and preparation of Indonesia's Repelita V.

The mix of technical assistance has been responsive to the needs of GOI. The output of project technical assistance teams has been consistent with the policies and programs of USAID and GOI. In general the effectiveness of the TAs in achieving the goals and purposes of the project has been satisfactory.

The revolving fund generated from the project demfarms has had a significant impact on the availability of agricultural credit to farmers. Indirect impact of the revolving fund could be seen in the increase in the number of farmers following the improved practices and the increased areas devoted to palawija crops.

Favorable GOI price support policies for secondary food crops provided a stimulus for farmers to adopt the new farming technology. Better market information has been developed in several project areas due to the impact of project training programs for traders, farmers and agricultural officials. Price supports, even though they are mostly below the market price, have served as a price motivator in changing the cropping pattern.

Recommendations

A secondary food crops seed service should be organized to provide a regular supply of good quality improved seeds. The private sector should be involved in the development and diffusion of improved seeds, particularly in the development and hybrid corn more suited to farmers' needs. The public sector should handle the development and spread of improved seeds of secondary food crops which are marginally profitable for the private companies, but crucial for increasing farmers' yields. A scheme should be developed to mass produce these seeds by offering incentives to selected contract farmers and by effective processing and distribution of such seeds.

Future demfarm packages should include the technology being developed under the current farming system research approach. The approach should be different for each region and be based on socio-economic differences and comparative advantage.

Increased funding should be targeted to poor areas like NTT. Since SFCDP activity has only been in operation one year it needs to be supported. If USAID supports the project it should do so by providing what GOI cannot provide as easily for itself--activities such as farm management analysis using enterprise cost and returns budgets; policy studies linked with appropriate U.S. universities accepting Indonesians for long-term (degree) training; and supervised credit services through existing Indonesian institutions.

Recommendations for USAID

The briefing for technical assistance teams should be improved so that they know the proper procedures for requesting project funds. Emphasis should be put on that which USAID does best, as outlined in the Core Agricultural Review. Less emphasis need be placed on those things the GOI can do for itself. Long-term overseas (degree) training should be supported by USAID and an interested Land Grant University should be responsible for selecting suitable candidates for graduate study. The criteria for selecting candidates for long-term degree training overseas should be primarily the candidate's expected ability to finish a course of study. The university should be willing to accept candidates into its own graduate program but candidates should be able to shift their graduate training to another university if it offers stronger programs. Arrangements should also be made to select professors willing to advise student research programs based on Indonesian problems associated with palawija crops, preferably professors who are willing to include Indonesian policy issues in their own research program.

Lessons Learned

Many of the lessons learned deal with the intangibles that invariably come from any project. These are the unexpected benefits or costs from the project and their value cannot be measured and quantified but may be important for the success of the project. Certainly the unexpected benefits can be illustrated by the young couple on the threshing mat who had heard about demfarms and began growing palawija crops after the project started. We believe the SFCDP had direct impact on this couple and as well as many other farmers.

We were also told many times about the difficulty of getting funds approved through USAID in a timely fashion so project activities could be carried out. People generally said that the difficulties were not as great with other donors. Some felt that the administrative problems cut productivity of some project activities in half. Even if that is an exaggeration, the very perception of this difficulty is damaging to the success of the project. Appropriate, effective and timely project design and administration are important to the SFCDP.

APPENDIX A

Scope of Work

FINAL EVALUATION - SCOPE OF WORK

I. Project : Secondary Food Crops Development (497-0304)

II. Purpose :

The purpose of this evaluation is to provide the GOI Ministry of Agriculture (MOA) and USAID with an assessment of project performance during the last seven years (1983 - 1989).

The evaluation seeks to answer the following general questions:

A. Were the project's goals and purposes as reflected in the recently revised logical frame work achieved and were they consistent with the Mission's program as stated in CDSS guidance, the recommendations made in the recent "Core Agricultural Review" and as determined by Indonesia's five year development plans? Are the outputs of project technical assistance teams (Stanford University, CARD-ISU, AED-CTTA) consistent with USAID and GOI longer term involvement in this sector? What lessons learned should be brought to attention of the GOI or USAID for possible future action?

B. What evidence is there to date of improved field agents' and farmers' skills as a result of this project in the formulation, implementation, and monitoring of improved secondary food crops technology and farming systems? Secondary or non-rice food crops are generally defined as maize and grain legumes, cassava and other tuber crops.

C. What evidence is there to date of the longer term sustainability of project activities including, availability of farm credit; support and monitoring of demonstration (demfarms) and trial-farms; economic analysis and improved technology of farming systems for secondary crops; market information dissemination, and generation of lower cost options of current field methodologies?

D. Have closer links been established between MOA agencies, Indonesian universities, and other related public and private sector organization involved with secondary food crops research and extension? If so, how was this achieved?

E. What is the role of other donors to promote the sustainability of secondary food crops development? What coordination is required to avoid duplication of their efforts?

III. Project Description:

The Secondary Food Crops Development Project (SFCDP), initiated in May 1983, was designed to strengthen the MOA's capacity to increase secondary food crops production in support of the GOI's food crops diversification strategy. USAID's contribution of \$1.0 million in grant funds and \$6.4 million in loan funds together with GOI's contribution of \$6.2 million supported technical assistance, secondary food crops policy and program analysis, training, research-extension linkages, and technology transfer. Field work was originally carried out in the provinces of Lampung, South Sulawesi, and East Java representing various agronomic and socio-economic conditions. In August 1985, an additional component was added to support food policy studies in collaboration with Stanford University. In September 1987, the Grant Agreement was amended to convert \$3.0 million in loan funds to grant to finance special studies (\$0.4 million) as well as technical assistance (\$2.6 million). This technical assistance was originally planned in the project but delayed because it was

to be loan funded. The amendment also extended the PACD for two years from April 15, 1988 to April 15, 1990. A five person technical assistance team was approved and contracted under the S&T centrally funded Academy for Educational Development (AED) Communication Technology Transfer in Agriculture (CTTA) - in February 1988.

In June 1986, a mid-term evaluation of the project was conducted and in 1989, the project was audited by RIG/A Manila. In July 1989, the Mission Director's Implementation Review (DIR) of the SFCDP was held in South Sulawesi and resulted in selected USAID decisions to improve project implementation. In 1989/1990 limited activities (baseline studies, demfarm technology transfer, training monitoring and supervision) were initiated in West Sumatra, Nusa Tenggara Barat (NTB), and Nusa Tenggara Timur (NTT).

The project is being implemented in the MOA's Directorate General for Food Crops Agriculture (DGFA). It is a pilot effort which attempts to improve the capacity of Indonesian public and private sectors to upgrade and expand sustainable secondary food crops production.

The purpose level end of project indicators as defined in the revised 1989 logframe are:

- A. Improved national policies/planning for non-rice crop production developed and supported by the public and private sector.
 - B. Profitable non-rice food crop research technology packages disseminated to end users/farmers.
 - C. Improved non-rice food crop extension and marketing programs successfully implemented.
 - D. Improved availability of credit for non-rice food crops.
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The major components of the project are:

Technical Assistance - Under an S&T centrally funded contract, AED/CTTA was asked to continue the policy studies initiated by Stanford University and others and to assess mass media techniques for cost-effectiveness relative to demfarms. AED/CTTA is presently fielding a team of 1 Chief of Party/Management Specialist (Jakarta); 1 Economist/Policy Analyst (Jakarta); 1 Senior Communication Specialist (Malang); 1 Agronomy/Communication Specialist (Jakarta); and 1 Econometrician/Marketing Specialist (Jakarta).

The Center for Agricultural and Rural Development, Iowa State University (CARD-ISU), was contracted in 1989 to provide the MOA with an improved capacity for policy analysis and support the formulation and implementation of a more market oriented food crops policy conducive to Indonesia REPELITA V's agricultural objectives. The resident team consists of 1 senior Economist and 1 staff Economist, both located in Jakarta who are supported by short term advisors from ISU;

Training - Numerous in-country training courses have been held in staff development, computer use, secondary crops post-harvest operations, demfarm field methodologies, integrated pest management, development of farmers group, small scale manufacturing of farm tools and equipment, and on farm utilization of secondary food crops. Overseas training was not completed as planned due to constraints in identifying students with adequate English language proficiency.

Special Studies, Policy Research and Operational Support -

Numerous special studies have been funded by the project. These include baseline surveys in the original project provinces (1985); marketing assessment of secondary food crops (1986, 1987); demfarm appraisals in East Java (1986) and South Sulawesi (1988). Policy research activities include Stanford University's Rural Income and

6/6

Employment Effort of Rice Policy (1988); Supply & Demand for Food Crops (1988); Price and Quality of Food Crops (1988). Operational Support was provided for 268 demonstration and trial farms for production inputs (seed, equipment, etc.) draft animals, and post harvest equipment. Final year activities call for the development of additional demfarms and the testing of communication and extension strategies under the operational support line item.

IV. Statement of Activities

The evaluation team will conduct its work in Indonesia over a seven week period beginning o/a January 15, 1990. The evaluation will be conducted in Jakarta at the office of the MOA, Directorate General of Food Crops Agriculture (DGFA) and at the project sites where long-term project funded consultants are presently located: Bogor (Central for Agriculture Economic Research), and Malang. In addition the team will travel to the provinces where project activities have been or are being implemented. The evaluation will be accomplished by a three person consultant team composed of specialists in agricultural economics, agronomy, and agricultural extension.

The basic task of the evaluation team will be to assess and measure progress to date toward the End of Project Status (EOPS) benchmarks as outlined in the revised 1989 logframe. Background materials for the evaluation will include: the Project Paper, grant and loan agreements and subsequent amendments, technical assistance contracts, quarterly technical assistance reports, special studies reports prepared to date, the mid-term evaluation, the USAID/Indonesia CDSS, GOI planning documents, documentation related to the Agricultural Applied Research Project (AARD), the USAID/ARD Core Agricultural Review, the Director's Implementation Review/SFCDP, and other documents to be identified and supplied by USAID and/or GOI staff.

67

In addition to answering the general questions as noted in II A,B, C, D and E, the evaluation will concentrate on:

A. Purpose level objectives:

1. How effective has project financed technical assistance and have their activities been used by the MOA for policy adjustments and planning to improve the capacity of the Indonesian public and private sector to promote sustainable non-rice crops production and marketing? What specific activities merit continued support and participation of the GOI, private sector, or other donors to ensure project sustainability?
2. What research technology packages have been disseminated to end users/farmers, and how effective have research-extension linkages been in improving non-rice crops extension and marketing programs?
3. How profitable has the technology generated by the project been in improving availability of credit for non-rice crops production and marketing?

B. Output level objectives:

1. How effective have the completed and on-going project activities been in achieving production increases in and outside the demonstration areas; improved quality of food commodities; quicker response of farmers and traders to market signals; cost-effective transfer of technology of demfarm-trials, mass media and market information techniques?
2. How effective have the completed special studies been in promoting the transfer of knowledge from technical assistance team members to Indonesian counterparts?

6

3. How effective have the completed and on-going technical assistance been in achieving the respective stated goals and terms of the contracts? How responsive have the mix of technical assistance (long & short term) been to needs of the GOI?

4. What has been the involvement of the agricultural extension services, universities, research institutes, and other training institutes (BULOG, COOPERATIVES, BIOTROP) in the short course development process? How does the on-the-job, short courses, and in field training compare with that planned for in project documentation? Are returned participants from short overseas training provided with the opportunity to utilize acquired skills?

V. Evaluation team qualifications and responsibilities

A. Senior Agricultural Economist/Team Leader (7 weeks)

This expatriate consultant must be a Ph.D. trained in agricultural economics with experience in quantitative analytical techniques and agricultural information system management. Experience with the evaluation of agricultural research and extension is necessary as is prior experience in Indonesia or developing Asian countries. This individual will be familiar with policy planning and analysis and policy level evaluations. This person will be responsible for evaluating the overall impact of technical assistance, and mass media techniques developed for cost-effective transfer of secondary food crops technology. The team leader will be responsible for coordination and completion of the evaluation.

B. Agronomist/Team Evaluator No. 1 (7 weeks)

This expatriate consultant should be a Ph.D. trained in an appropriate area of agricultural science (agronomy, plant entomology, plant pathology, etc.) with experience in agricultural extension and communication in Indonesia or developing Asian

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countries. This individual must have hands on experience working with host country nationals in an atmosphere involving the conducting and evaluation of transfer of agricultural technology to field agents and farmers especially on upland/dryland secondary food crops based farming systems. This individual will be responsible for assessing the impact of SFCDP on agricultural extension and communication in project areas. The individual will also be responsible for the evaluation of the special studies activities.

C. Socio-Economist/Team Evaluator No. 2 (7 weeks)

This local Indonesian consultant must have a Ph.D in the area of agricultural economics or sociology with past experience in the formulation of GOI agricultural policy. This person will conduct interviews and review current GOI policies to determine the impact of this project on GOI policies effecting agricultural extension and food production. This individual will also evaluate the effectiveness and impact of conducted training.

A listing of qualified local Indonesian consultants will be provided for the position of Team Evaluator No. 2. It will be the responsibility of the Team Leader to interview, select and hire all needed local staff.

VI. Evaluation Schedule

USAID anticipates that the evaluation team will require 42 working days to complete the evaluation tasks outlined above from the time it arrives in country. A six-day work week is authorized. The tentative schedule of activities is as follows:

- Week # 1 Evaluation team arrives in country and meets with USAID and MOA staff and other appropriate donors.
Arrangements made to travel to provinces during middle week #2. Hire local staff.
- Week # 2 Continuation of MOA meetings and depart mid week for project field sites.
- Week # 3 - # 4 Continue review of work at project field sites.
- Week # 5 Complete work at research and return to Jakarta.
- Week # 6 Identification of policy level restrictions and preparation of first draft evaluation report.
- Week # 7 Seminars at USAID and the MOA presenting findings and recommendations. Incorporation of USAID comments, submission of the final evaluation report.

VII. Reporting Requirements

The evaluation team will be responsible for preparing a final report addressing the issues identified with subsequent recommendations to USAID and GOI. This report will include recommendations for future USAID involvement, if any, in the transfer of appropriate secondary food crops technology utilizing the lessons learned from the current project.

The final evaluation report will be prepared in English and delivered to USAID in draft with sufficient time to incorporate Mission comments in the final version.

VIII. Funding

The source of funds for this final evaluation will be grant funds under the USAID/GOI Secondary Food Crops Development Project.

APPENDIX B

Project Sites

APPENDIX B

PROJECT SITES

PROVINCE

KABUPATEN (DISTRICT)

1. Lampung

- a. North Lampung
- b. Central Lampung

2. East Java

- a. Ponorogo
- b. Kediri
- c. Nganjuk
- d. Madiun
- e. Ngawi

3. South Sulawesi

- a. Bone
- b. Bulukumba
- c. Gowa
- d. Pangkep
- e. Wajo
- f. Sinjai

4. West Sumatera

- a. Padang Pasaman
- b. Sijunjung

5. West Nusa Tenggara
(NTB)

- a. Mataram
- b. Bima

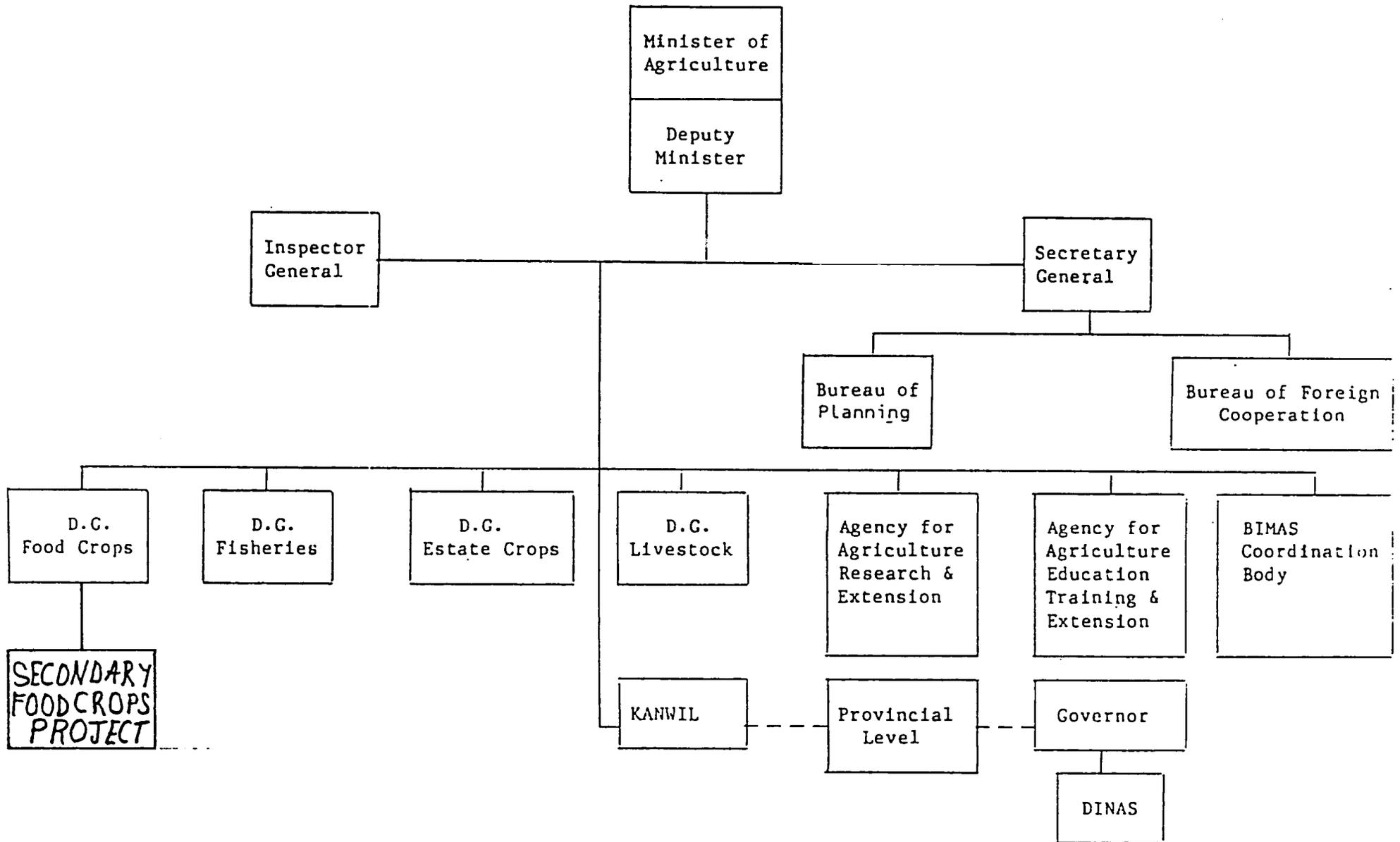
6. East Nusa Tenggara
(NTT)

- a. Kupang
- b. Sikka

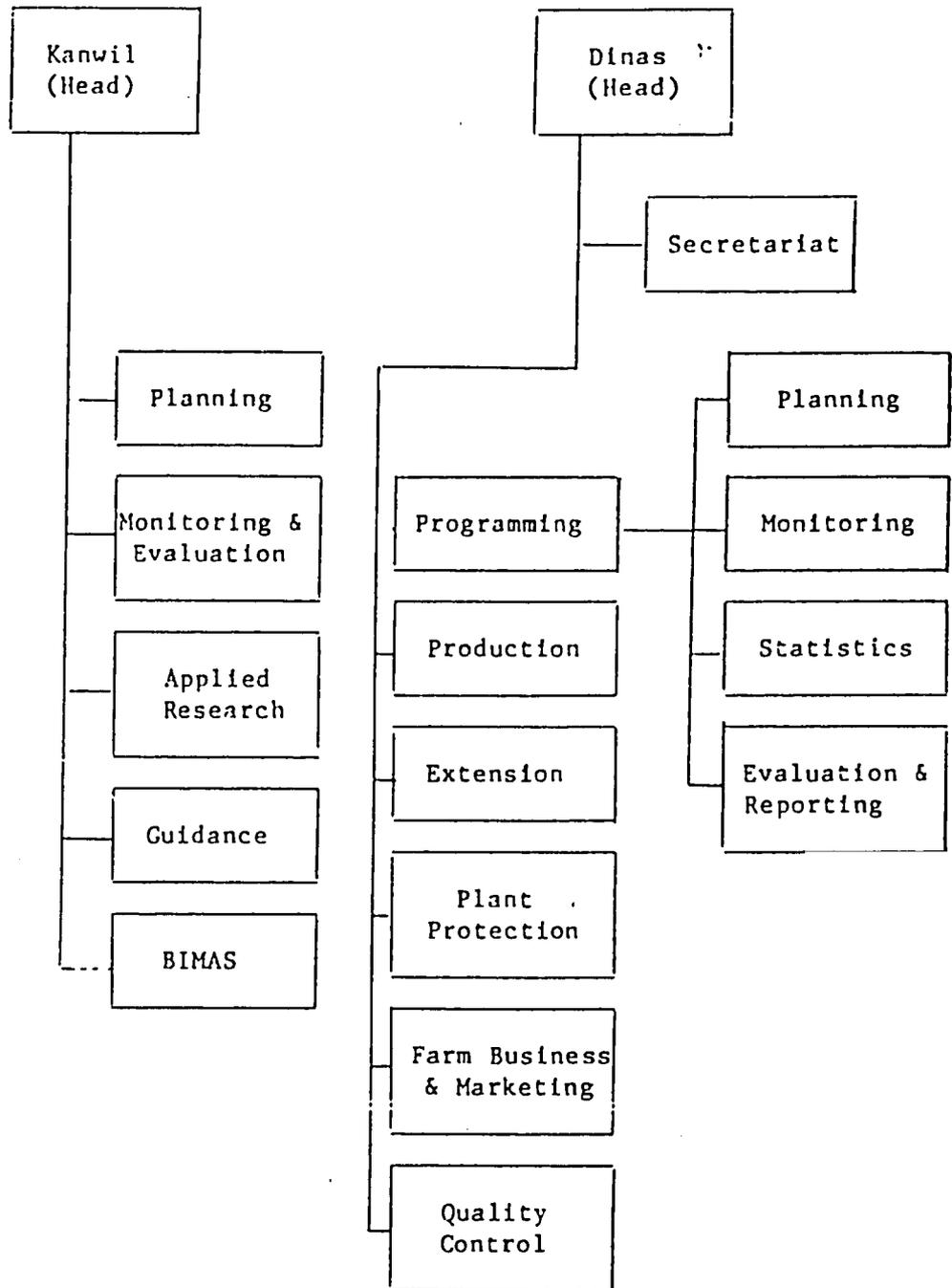
APPENDIX C

Organization Charts

Structure of the Ministry of Agriculture



Structure of Kanwils and a Typical Dinas



APPENDIX D

Factors in the Sustainability of Social Services

APPENDIX D

FACTORS IN THE SUSTAINABILITY OF SOCIAL SERVICES

Objective: To develop a capability to sustain the benefits (results) generated by aid project interventions after assistance is terminated.

Factors Affecting Sustainability	Implementing Organization		
	National	Local Community and Private Voluntary Organizations	Private Enterprise
Commitment and Government Policies	Commitment of leaders and constituencies to objectives of program and to supportive policies.	Commitment to objectives by local officials, leadership, and constituencies. Government support for local organization and initiatives.	Comparability of objectives and types of services with market opportunity for private firms. Appropriate government regulations and policies encouraging sustainable private enterprise.
Management and Organization	Managerial leadership for defining objectives. Constituency building and program administration; organizational capacity (staff, logistics, budget/fiscal, training, management information systems) to carry out program.	Local leaders and managers organized; beneficiaries involved in planning and implementation; local organizational capacities developed to implement and maintain services. Fund raising from multiple sources required.	Local entrepreneurial leadership encouraged to develop private service organizations.
Finance	Government budget and foreign exchange allocations to cover operations, maintenance, and depreciation; phased in over life of project.	Community contributions for facilities and operating costs raised; user fees established.	Capital resources available for investment in services; prices of service cover costs with profit.
Technology	Capacity to select, adapt, review, and maintain program technologies, including adaptive research.	Communities capable of operating and maintaining technology, and have a role in technology selection.	Marketability of technology.
Socioculture	Program objectives and technologies acceptable; gender roles defined; information systems keep management in touch with beneficiary perspectives.	Women involved in program and their roles and responsibilities identified. Local acceptance of technology; local "ownership" of program.	Local entrepreneurs adapt to program services. Market research to determine local needs and desire for services; advertising to generate demand.
Environment	Policies and regulations for protecting environment.	Local participation and self-interest in protecting environment promoted.	Long-term perspective of private firms encourages cost of environmental protection in investment and operation and maintenance budgets. Support included for local enterprise development in service activities that have potential for profitability.
Project Design and Implementation	Realistic projections of project objectives, time schedules, and organizational capabilities. Project phasing, flexibility in balancing immediate goals and long-term institution building; monitoring and evaluation to track performance and impact.	Pilot projects for generating participation and learning what works; replication feasibility tested.	
External Influences	Political stability and democratic society; international and domestic market economy support economic growth, access to international technological developments and other donor support.	Local political stability and community participation in decision-making; economic growth opportunities able to provide employment and income that will sustain local social services.	Competitive market economy.

Source: Agency for International Development.

APPENDIX E

Logical and Implementation Framework Matrices

SECONDARY FOOD CROPS DEVELOPMENT PROJECT
LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	ASSUMPTIONS	MEANS OF VERIFICATION
<p>A. <u>Goal:</u> Increased rural employment and income opportunities.</p>	<p>1. Number of new jobs. 2. Per capita income.</p>	<p>1. Economic and political stability. 2. GOI commitment to implementation of the current Repelita. 3. Continued deregulation measures implemented by GOI. 4. Continued openness of GOI to sound advice for decision making, problem solving.</p>	<p>1. GOI statistics 2. Other donor studies.</p>
<p>B. <u>Project purpose:</u> To improve the capacity of Indonesian public and private sectors to upgrade and expand sustainable non-rice food crops production.</p>	<p>End of Project Status</p> <p>1. Improved national policies/planning for non-rice crop production developed and supported by the public and private sector.</p> <p>2. Profitable non-rice food crop research technology packages disseminated to and users/farmers.</p>	<p>1. GOI agencies and institutions remain receptive to donor financed TA, TA advice and TA generated analysis of non-rice crop production and marketing.</p> <p>2. GOI interested and willing to develop and implement programs which encourage greater private sector</p>	<p>Means of verifications</p> <p>1. Food crops Policy Research and Special Studies, e.g.; 1) Rural Income and Employment Effects of Rice Policy in Indonesia; 2) Foodcrops Supply and Demand Study; 3) Foodcrops Price and Quality Study; 4) Secondary Crops Marketing Studies.</p> <p>2. Project monitoring systems and reports.</p>

3. Improved non-rice food crop extension and marketing programs successfully implemented.

4. Improved availability of credit for non-rice food crops.

3. Favorable policy environment for expanded private sector participation in domestic and international agricultural commodity trade.

4. Technology generated by the project proves profitable.

3. Evaluation

Outputs

1. Increased production of secondary foodcrops.

2. More efficient marketing systems for agricultural commodities.

3. Demonstration Farms, Demonstration Areas, and Trials established.

4. Extension staff farmers, and traders trained in improved production and processing techniques for non-rice crops.

5. Mass media techniques developed and tested for core cost-effective technology transfer modes.

Magnitude of Outputs

1. Production increases by 50% in demonstration farms and 15-30% on areas outside the demonstration farm.

2. Improved quality of food commodities: faster response of farmers and traders to market signals.

3. 160 completed demonstration farms and 10 trials located in three provinces.

4. 1,200 person months of completed training by PPL, PFM, PPS, KUD managers, private dealers, contact farmers and DGFC staff.

1. Normal weather prevails during the period of the project.

2. Incentive prices are adequate during life of the project.

3. Willingness of farmer groups to include their farms in trials and demonstration farms.

4. Continued interest on the part CRIFC, BULOG, and AFFE in providing training.

5. Adequate counterparts resources are devoted to policy development, to analysis of profitability of non-

1. Evaluation reports.

2. Crop statistical records.

3. Farm records and accounts.

4. KUD and private dealers records.

5. Reports of Palawija Project Office; reports of Field Teams.

i. Completed Special Studies on agronomic, socio-economic, marketing and policy-related non-rice promotion.

6. Continued provision of high quality counterparts to TA team members on a full time basis.

6. Training records of PPO; Contract agreement between DGPC and BULOG/ORIFC.

7. Reports on project file.

Inputs:

	Implementation target	
	<u>USAID</u>	<u>GOI</u>
	(\$000's)	
Technical Assistance	3,360	-
Training Assistance	509	641
Personnel	-	582
Operational Support	2,652	-
Commodities	-	4,036
Policy Research	850	-
Contingencies	97	1,032
	<hr/>	<hr/>
	7,400	6,291

I. IDENTIFICATION BLOCK

A. TITLE: SECONDARY FOOD CROPS B. PROJECT NO.: 497-0304 C. AUTHORIZATION VENUE: USAID/I D. DATE START: GRANT: 5-83
 LOAN: 5-83
 PACD: 4-90

D. PROJECT OFFICER: Mocharam Tajib E. CONTRACTOR/CONSULTANTS: Agr. Education Development/Centre for Technology Transfer in Agriculture (AED/CTTA); Central for Agriculture Research and Development (CARD) - Iowa State University (ISU).

II.A. FINANCIAL ANALYSIS BLOCK (\$000)

	CURRENT AID	COST EC	EST. OD	TIME ELAPS MO PCT	APPROVED			GOI CONTR.	TOTAL PROJ. COST	COMMITMENT			EXPENDITURE			UNLIQ. P/LINE	AV. YEAR. EXPEND. OVER	YEARS TO LIQ.	YEARS REMAIN. IN PROJ.
					LOP FUND.	OBLIG.	MORTG.			TOTAL	PRCNT	COMM./TIME INDEX	TOTAL TO DATE	EXPEND/TIME PCT	INDEX				
1. Grant:	4000			76 92%	4000	4000	0		3315	83%	0.91	2362	59%	0.64	1638	373	4.4	0.6	
2. Loan:	3400			76 92%	3400	3400	0		3364	99%	1.08	2334	69%	0.75	1066	369	2.9	0.6	
3. Total:	7400	6291		76 92%	7400	7400	0	6291	13691	90%	0.99	4696	63%	0.69	2704	741	3.6	0.6	

B. FINANCIAL ANALYSIS NARRATIVE: Pipeline concerns are due to delayed initiation of T.A. contracts, decreasing GOI support of the Project due to overall budget decreases and optimistic forecasts in the planning phase of the project. Unliquidated obligations will be reviewed during the next semi-annual 1311 review and a final determination of the amount of funds to be deobligated will be made after the PACD.

III. IMPLEMENTATION ANALYSIS

A. DPAS AND PROGRAM EMPHASES ADDRESSED, AND ANY EVIDENCE OF RELATED PROGRESS: The DPA addressed is Sustainable Agricultural Production and Productivity, Agricultural Diversification with emphasis on research, technology development and dissemination. The Project has contributed to improved cropping systems and has increased the production of secondary food crops in Indonesia. New varieties of soybean, corn, cassava and peanut have been adopted, improved non-rice cropping patterns have been developed and the following yearly increases have been measured from '83-87: corn 2.2%; cassava, 4.9%; soybean, 22.9%, and peanut, 4.6%.

B. EVALUATION: Last: June 1986 Next: January 1990 C. AUDIT: Last: August 1989 Next:

D. STATEMENT OF PROJECT PURPOSE: To improve the capacity of Indonesian public and private sector to upgrade and expand sustainable non-rice food crops production.

E. IMPLEMENTATION PERFORMANCE:

LOGFRAME TARGETS	EST. % COMPLETE	STATUS TO DATE
1. Purpose-level targets (EOPS)		
a. Improved national policies/planning for non-rice crop production developed.	60	1. As a result of this project, the national rice production growth target has been set at 3.2% or trend self-sufficiency which permits the GOI to devote other resources to secondary crops. Subsidies of fertilizers reduced, floor prices of rice, corn and soybean increased.
b. Profitable non-rice food crops research technology packages disseminated to end users (farmers).	80	b. New research varieties of soybean, corn, cassava, peanut adopted with higher yields, shorter maturities, and more resistant to pest & diseases.
c. Improved non-rice food crop extension & marketing programs successfully implemented.	75	c. Improved non-rice cropping pattern on upland and rain-fed areas and enhanced marketing information and programs developed.

F. IMPLEMENTATION PERFORMANCE NARRATIVE: The project has contributed to improved cropping systems and has increased the production of secondary food crops in Indonesia. The increase in output of secondary food crops per hectare was mainly in areas where the project demfarm trials are located and have occurred at the same time as the implementation of the project. Four fold increases of corn production in S.Sulawesi project sites. Soybean yields in S.Sulawesi at 1.5 T/ha relative to 0.75 T/ha outside the demfarm while in E.Java at 1.8 T/ha as compared to 1.0 T/ha outside the demfarm. Three fold increases of grain legume acreage in Lampung and in Bone (S.Sulawesi), cropping intensity formerly 1 crop per year has changed to 2 to 3 crops per year (2nd and 3rd crops were secondary crops). At the national level, average annual increase in output of secondary crops during 1983-87, i.e. corn 2.2%, cassava 4.9%, peanut 4.6%, soybean 22.9%, and mungbean 4.1%. The output of secondary crops in 1987 (except cassava) declined as compared to 1986, due to a decrease of harvested area because of the drought in 1987. In addition to the improved cropping patterns, new research varieties (RV) have been adopted e.g. corn RVs with yield potentials of 7.0 ton per hectare, soybean RVs yield potential of 2.5 T/ha, peanut RVs yield potential 3 T/ha, and cassava RVs of 45 T/ha yield potentials. The results of the on-farm research trials have been used as basis for the cropping pattern demfarms. While this project does not directly target women an estimated 50% of direct beneficiaries are women. Some aspects of the project will be sustained i.e.: GOI efforts to expand secondary food crop production via the most cost effective methods for the crops providing the greatest returns eg. demonstration and trial farm, mass communication, and market information.

IV. KEY OUTSTANDING ISSUES (EVALUATION, AUDIT, DIR, ETC.): 1. GOI officials have expressed interest in secondary food crops and a desire to support the project beyond the project assistance completion date. Despite this sincerity more specific actions are necessary. The GOI will be further encouraged to support this activity once AID funding has ceased. Nationwide contribution to secondary food crops includes funding from the World Bank; FAO; ESCAP/CGPRT; Japan/JICA; W. Germany/GTZ; Canada (CIDA); Australia. -

2. One outstanding recommendation is for the establishment of a system for administrative approval of CITA-AED vouchers paid by AID/W. The Mission feels that USAID Indonesia should not be held accountable for closing this recommendation and has forwarded it to Washington. The Mission recommends that any further follow-up action on this recommendation be between RIG/AM and AID/Washington.

V. OVERALL ASSESSMENT OF PROGRESS:

Satisfactory

Flag

2.2

APPENDIX F

References

APPENDIX F

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b. Partial List of Special Studies

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APPENDIX G

Meetings, Interviews and Site Visits

APPENDIX G

MEETINGS, INTERVIEWS AND SITE VISITS

a. MEETINGS

2/19/1990 MOA/DGFC staff, Pasar Minggu

2/20/1990 Project TA/CTTA staff, Cilandak Pasar Minggu
USAID (ARD.CM)

2/21/1990 Food Crops Production

2/22/1990 Training, Education Extension, Agricultural
Economic, Production, Marketing and Price
Analysis

2/24/1990 BORIF - Bogor Research Institute for Field
Crops

3/6/1990 East Java Planning and programming official of
Food Crops Production

3/8/1990 Women's Association Meeting (PKK)

Asked to meet with about 30 women who had
gathered for a regular meeting.

3/17/1990 Lampung Food Crops Production office.

Representative from Food Crops Production,
Agricultural Cooperatives, Project Program
Support (PPS), Agricultural Extension, Rural
Bank (BRI) arm Management Support office,
Project Implementation Unit (PIU) and Bimas.

b. SITE VISITS

2/27-3/3/1990 South Sulawesi

3/5-8/1990 East Java

3/9-11/1990 East Nusa Tenggara

3/15-17/1990 Bandar Lampung

c. PARTIAL LIST OF INTERVIEWEES

N A M E	LOCATION	TITLE
Mocharam Mohamad Tojib	American Embassy USAID/ARD, Jakarta Indonesia	USAID Assistant Project Officer
Saroso Sindhoesaroyo	Directorate General of Food Crops Department of Agri- culture, Jakarta, Indonesia	SFCDP Project Director
E. Edwards McKinnon	Cilandak Commercial Estate Business Service Bureau, Jakarta Indonesia	Chief of Party SFCDP, TA, AED/CTTA/Indonesia
David W. Brown	Directorate General of Food Crops Department Agri- culture, Jakarta Indonesia	AED/CTTA Senior Eco- nomist
Klaus Altemeier	Department of Agri- culture Jakarta, Indonesia	AED/CTTA/Econometri- cian
Marcus Winter	American Embassy USAID/ARD Jakarta, Indonesia	USAID. AAD, Chief
Marcus Stevens	American Embassy USAID/ARD Jakarta, Indonesia	USAID, CM, Chief
Thamrin Bastari	Directorate General of Food Crops Department of Agri- culture	Director for Food Crops Production Development
A. Soedradjat Martaamidjaja	Ministry of Agri- culture Jakarta, Indonesia	MOA/AAETE Chief Bureau of Extension and Training
George Like	American Embassy, USAID/ARD, Jakarta, Indonesia	ARD, APD Chief

Curtis Christensen	American Embassy, USAID/ARD Jakarta Indonesia	Office of Finance Chief, USAID
James Hradsky	American Embassy, USAID/ARD, Jakarta, Indonesia	Program Project Support Office (PPS)
Subiati Subroto	Directorate General of Food Crops Agri- culture, Ministry of Agriculture, Indonesia	Director of Food Crops Agriculture Extension
Abu Chaerah	Directorate General of Food Crops Agri- culture, Ministry of Agriculture, Indonesia	Director of Food Crops Planning and Programming
Effendi Salam	Directorate General of Food Crops Department of Agri- culture Jakarta, Indonesia	Director for Farm Management and Food Crops Product Processing
Soetjipto Parto- hardjono	AARD office in Bogor	Head of Agronomy, CRIFC
Sumarno	AARD office in Malang	Head of MARIF
Sugianto	Food Crops Agricul- tural Service in East Java, Surabaya	Planning and Pro- gramming Sub Division Food Crop Agriculture Service, Surabaya
James Mangan	Dinas Pertanian Tanaman Pangan Malang, Indonesia	AED/CTTA Agricul- tural Communications Specialist
Mulyono Mangun- sugito	Dinas Pertanian Tanaman Pangan Nganjuk, Indonesia	Head of Food Crops Agricultural Ser- vices, Kabupaten Nganjuk
Maman Suherman	Directorate General of Food Crop Department of Agri- culture, Jakarta Indonesia	SFCDP Project Staff
Manafe	Agriculture Kanwil of NTT Province in Kupang	Head of Kanwil Department of Agri- culture Nusa Tenggara Timur

Muhammad Akil	Agency for Agricultural Research and Development Nusa Tenggara Timur	Nusa Tenggara Agricultural Support Project.
Sukirno S.	Dinas Pertanian Tanaman Pangan Lampung	PIU SFCDP Lampung Province
Amiruddin Inoed	Dinas Pertanian Tanaman Pangan Kabupaten Lampung Tengah, Indonesia	Head of Food Crops Agricultural Lampung Tengah
Muslimin Mustafa	Faculty of Agriculture Hasanuddin University Ujung Pandang, Indonesia	Dean Hasanuddin University, Ujung Pandang, Indonesia
Radjagaoe A.Basir	Dinas Pertanian Tanam Pangan Propinsi Sulawesi Selatan	Chief of Food Crops Agricultural Service South Sulawesi
B.P. Pohan	Dinas Pertanian Tanaman Pangan Propinsi Lampung, Tanjung - Karang, Indonesia	Chief of Food Crops Agricultural Service Lampung
Kamaludin Sipajung	Food Crops Agriculture Service Lampung Tanjung Karang, Indonesia	PIU SFCDP Lampung Province Head of Production Sub Division, Lampung
A. Patiroi	Provincial Food Crops Agricultural Service, South Sulawesi, Ujung Pandang	Chief of Program Planning Section
Sjamsuri	Provincial Food Crops Agricultural Service South Sulawesi, Ujung Pandang	Chief of Food Crops Production Section
Jalal Tahin	Provincial Food Crops Agricultural Service, South Sulawesi, Ujung Pandang	Staff of Production Section
Aurora		Private company Input Supplier and practical buyer for soybeans

Harashid Tiro	South Sulawesi Provincial Cooperative service in Ujung Pandang	Chief of Cooperative Service South Sulawesi
Imam Slamet	BRI, South Sulawesi Province	Chief of Credit Division BRI, South Sulawesi
A. Hasanuddin	MAROS Research Institute South Sulawesi Province, MORIF	Director of MAROS Research Institute South Sulawesi
M. Saleh Pandang	MORIF, Maros	Farming System Research
Anwar Achmad	South Sulawesi Province, Ujung Pandang	PIU, SFCDP South Sulawesi
Mnurung	Agricultural Extension South Sulawesi Province, Ujung pandang	Head of Agricultural Extension, South Sulawesi
Narusman	Agricultural Service South Sulawesi Province, Ujung Pandang	Head of Agricultural Service South Sulawesi
Hamma	South Sulawesi Province	Demfarm farmer South Sulawesi
Syarifudin Mahmud	South Sulawesi Province	Rural Extension Agent South Sulawesi
A. Achmad Basri	Agricultural Service South Sulawesi Province, Ujung Pandang	Head of Production Section
R. Chaeruddin	South Sulawesi Province	Chief of Agricultural Extension Section
Haslan	South Sulawesi Province	Chief of Agricultural Extension Section

APPENDIX H

Examples of Open-Ended Questions

Used During Interviews

APPENDIX H

EXAMPLES OF OPEN-ENDED QUESTIONS USED DURING INTERVIEWS

a. General questions mentioned in the SOW

Were the projects goals and purposes consistent with:

- The Missions program
- The "Core Agricultural Review"
- The GOI 5 year plan.

What were the lessons learned from this project?

What evidence is there that field agents skills have been improved?

What evidence is there that farmers skills have improved?

What elements of the project do you feel will be continued after the project ends WRT:

- Revolving funds and credit.
- Expanding or car servicing demfarms.
- Technical and market information dissemination.

What linkages have been established by this project and do you expect them to be maintained?

What are other donors doing that is related to this project.

Is there a greater need for coordination of donor projects and activities?

Is there serious duplication of donor sponsored projects?

How does USAID compare with the other donors in providing administration and supervision support.

b. Questions related to "purpose level objectives".

How effective has project financed technical assistance been?

Have their activities been used for policy adjustments and planning to improve the capacity of the Indonesian public and private sector to promote non-rice crops production and marketing?

What project specific activities merit continued support to ensure project sustainability?

What research technology packages have been disseminated to farmers?

How effective have research-extension linkages been in improving non-rice crop production and marketing?

How useful has the technology generated by the project been in improving credit use for non-rice crops production and marketing?

c. Questions related to "output level objectives"

How effective have the completed and on-going project activities been in achieving production increases in the demonstration areas and outside these areas?

Has there been an increase in food/nutrition for farmers?

Have farmers and traders been responsive to market signals?

Do you feel that the transfer of technology to the demfarms and to those outside the demfarm areas have been cost effective?

How effective have the completed special studies been in promoting the transfer of knowledge from technical assistance team members to Indonesian counterparts?

How effective have the completed and on-going technical assistance been in achieving the goals of the project?

What has been the involvement of the agricultural extension service, universities, research and training institute in the short-course development process.

How does the training and short-courses in the field compare with that planned for in the project documentation?

Are returned participants from short overseas training been provided with the opportunity to utilize their acquired skills?

d. Questions were also directed to individual Farmers Group members and village leaders, demfarm and non-demfarm farmers, local tradesmen and processors.

APPENDIX I

Definitions and Terminology

APPENDIX I

DEFINITIONS AND TERMINOLOGY

Scope of work - the terms of reference for the evaluation team.

Logical framework - An USAID document which states the project goals and purposes.

Secondary food crops - Non-rice food crops and generally defined as soy beans, maize, grain legumes, cassava and other tuber crops.

Sustainability - A development program has sustainability when it is able to deliver an appropriate level of benefits for an extended period of time after major financial, managerial, and technical assistance from an external donor is terminated.

Project technical assistance teams - Contract groups which may be provided by private firms, university or government agencies.

Lessons learned - Recommendations to improve the effectiveness and efficiency of future similar activity based on the observations of past performance of a project.

Demfarms (demonstration farms) - Areas of 5 - 25 hectares in size belonging to several farmers which receive production inputs and technical help in the production of secondary food crops in Indonesia.

Trial-farm - Farms selected to be used for research and demonstration experimentation.

Farming systems - Has several meanings but usually refers to the use of on farm trials and experimental plots to evaluate yield responses from alternative farming practices utilizing varying levels of input and as a means of disseminating improved practices information to farmers. The people associated with this project seemed to use the term farming systems when, in fact, they were referring to the cropping pattern or cropping system.

Lower cost options - An economic term with several meanings. Used by some to mean lower cost per unit or lower total cost for a given level of output. This information by itself is not sufficient to make optimum economic decisions at either the farm level or at the national policy level.

Links or linkages - May be formal or informal. If formal, then linkages become administrative relationships. If informal, linkages become informational and cooperation relationships.

Donors - Refers to outside funding sources such as World Bank or UNDP and a few developed countries.

Mid term evaluation - An independent evaluation made for USAID project during the implementation of the project in order to bring the project statement into line with what can meaningfully be accomplished by the project.

Selected USAID decisions - Contractual restrictions or additional administration requirements place on the operation of a project.

Baseline studies - The gathering of statistical data relevant to the project area. Usually contains an evaluation of production potential or a projection of production and income trends.

Pilot effort - Means that it is an initial effort, experimental in nature and usually applied in selected areas. Usually assumes that follow-up will occur in the form of revised effort or applied to additional (and sometimes, all) areas of the country.

Purpose level project indicators - Indicators used to demonstrate the degree to which project objectives were achieved.

Market oriented food crops policy - Price controls and/or subsidies for food crops production inputs,

Post harvest operations - Storage, transportation marketing and processing.

Integrated pest management - The controlling of pests by changing the cropping system rather than using pesticides.

Special Studies - Reports and publications prepared by TA's on the Project.

Marketing assessment - Demand and/or supply studies as well as an evaluation of market potential.

Operational support line item - Budget allocation for a specific activity

Project status benchmarks - Logframe goals and objectives

Purpose level objectives - Project objectives.

Output level objectives - Production targets to be reached by the project.

Buy in - A term used by USAID to indicate non direct hire or personal service contracts.

Project sustained activities - The possibility of support from present or alternative sources to continue funding project activities. Should not be confused with project sustainability.

Research technology packages - Refers to changing the method of production or the methods farmers use as a result of research or introduced technology.

Research extension linkages - The degree to which agricultural researchers and extension agents cooperate in disseminating research information. Examples are field days, pamphlets, calendars, film or slide shows, news releases, radio broadcasts, etc.

Repelita - Indonesia five-year development plan.

APPENDIX J

Project Data Sheet

APPENDIX J

PROJECT DATA SHEET

Country: Indonesia

Project Title: Secondary Food Crops Development Project

A.I.D. Project Number: 497-0304

A.I.D. Loan Number: 497-T-075

Project Implementation:

- a. Project Authorized -- 1983
- b. Project Assistance completion date -- 1991
- c. Receipt of Final Billings -- 1990

Project Completion - Final Disbursement: FY 1990

Project Funding

- a. A.I.D. Loan \$ 3.4 million
- b. A.I.D. Grant \$ 4.0 million
- c. Indonesian Contribution \$ 6.2 million
- d. Total Project Costs \$ 13.6 million

Evaluations : Mid Term Evaluation - 1986
Final Evaluation - 1990

Responsible Mission Officials During the Life of Project :

- a. Mission Directors: William P. Fuller, David N. Merrill
- b. Project Officers: James Gingerich, Joanne Hale,
George Like, Kenneth Randolph,
Mocharam Tajib

APPENDIX K
Statistical Summary

APPENDIX TABLE 1 : Area, Production, and Productivity of Secondary Food Crops in Indonesia

YEAR	Area Harvested (000 ha)			Production (000 MT)			Productivity (MT/ha)					
	Soybean	Peanut	Corn	Cassava	Soybean	Peanut	Corn	Cassava	Soybean	Peanut	Corn	Cassava
1983	640	481	3,002	1,221	536	460	5,087	12,103	0.93	0.95	1.69	9.30
1984	859	538	3,086	1,351	769	535	5,288	14,167	0.89	0.99	1.71	10.50
1985	896	510	2,440	1,252	870	528	4,330	14,057	0.97	1.03	1.77	10.90
1986	1,254	601	3,143	1,170	1,227	624	5,929	13,312	0.97	1.06	1.88	11.40
1987	1,101	551	2,626	1,222	1,161	533	5,155	14,356	1.05	0.96	1.96	11.70
1988	1,177	608	3,406	1,303	1,270	589	6,652	15,471	1.08	0.97	1.95	11.90

Source : Directorate General of Food Crops

APPENDIX TABLE 2. Total Secondary Food Crops Area Planted Under Intensification (1983 - 1989)

Commodities	Total Area Planted (000 ha)							Growth Rate per Year (%)
	1983	1984	1985	1986	1987	1988	1989	
Soybean	570	767	874	1,066	1,039	1,139	1,101	13.41
Peanut	324	322	389	490	513	445	514	8.81
Corn	1,904	2,118	1,935	2,612	2,357	2,792	2,599	6.56
Cassava	519	678	656	699	678	929	1,013	12.83

Source : Dimas

APPENDIX TABLE 3. Number of PPL, PPS, KUD, RI Village Unit and Kiosk *

Province	NUMBER OF									
	P P S		P P L		K U D		BRI Village unit		Kiosk	
	1983	1989	1983	1989	1983	1989	1983	1989	1983	1989
East Java	61	163	2,129	3,165	743	731	731	731	4,728	4,728
South Sulawesi	49	126	849	1,562	372	450	233	241	1,040	1,427
Lampung	22	61	493	1,164	170	222	101	101	211	511
West Sumatra	26	58	423	1,070	267	116	119	119	1,208	1,944
NTB	14	50	506	735	140	150	82	82	531	531
NTT	10	36	255	865	114	114	74	74	52	52
T O T A L	592	1,585	14,904	29,405	6,131	7,512	3,019	3,650	18,322	24,742

* PPL = Extension Agent
 PPS = Subject Matter Specialist
 KUD = Cooperative
 BRI = Rural Bank of Indonesia

APPENDIX TABLE 4. Area Harvested, Production and Productivity Secondary Food Crops in Project Provinces-
Lampung, East Java and South Sulawesi

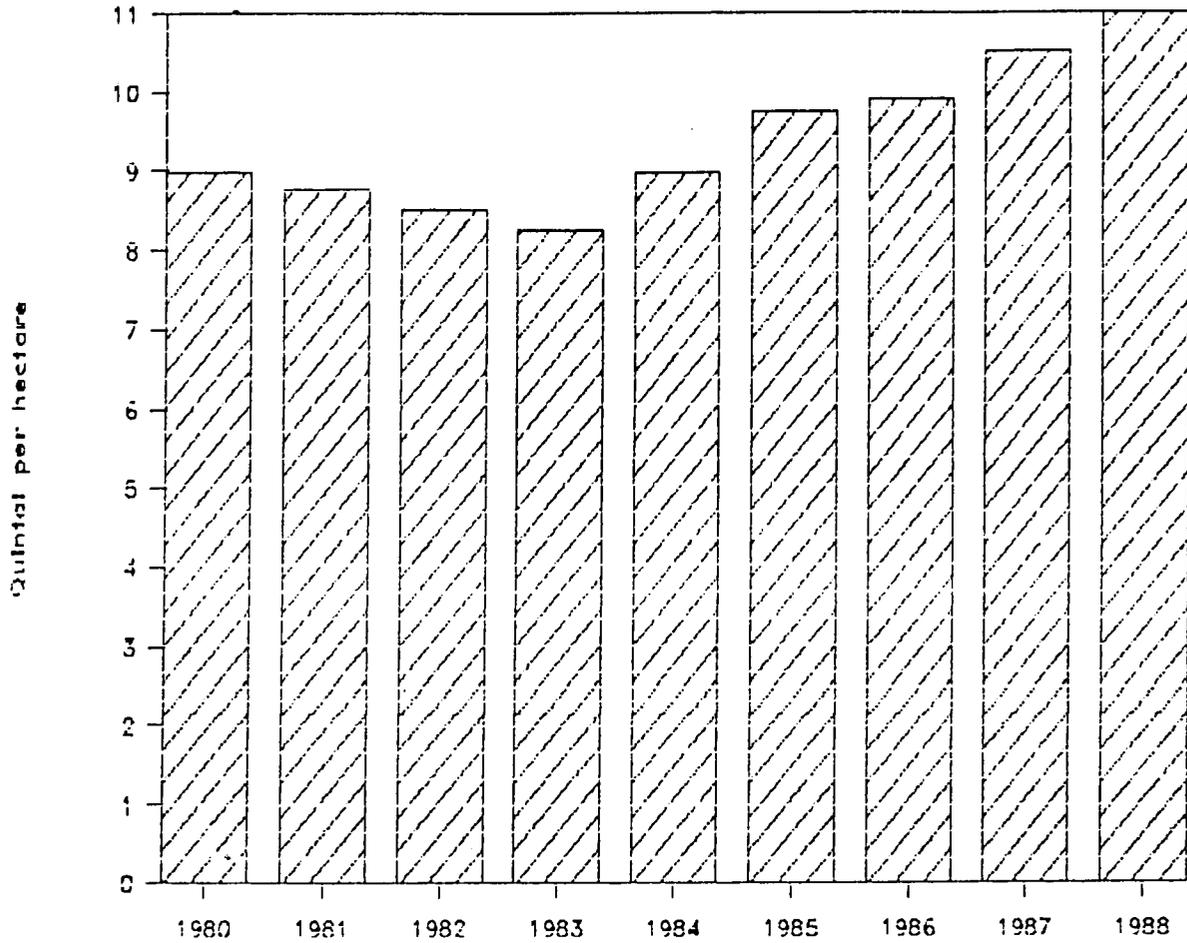
Province	Year	Area Harvested (000 ha)				Production (000 Ton)				Productivity (Kg/ha)			
		Peanut	Soybean	Cassava	Corn	Peanut	Soybean	Cassava	Corn	Peanut	Soybean	Cassava	Corn
Lampung	1983/84	7.8	18.7	81.5	83.4	8.2	13.1	827.3	131.2	7.9	7.1	102.0	15.7
	1984/85	13.5	47.7	118.0	95.8	13.1	33.6	1,238.1	160.0	7.7	7.0	110.0	16.7
	1985/86	11.5	37.8	79.4	132.1	10.8	73.9	929.0	261.4	9.4	8.4	117.0	19.8
	1986/87	12.0	139.5	65.1	188.8	12.3	140.2	787.2	391.2	10.2	16.0	121.0	20.8
	1987/88	12.8	108.7	105.3	155.7	12.1	117.7	1,361.7	342.5	9.5	10.8	129.0	20.7
	1988/89	9.8	292.9	151.4	197.7	9.5	89.8	1,315.1	722.2	9.7	9.9	128.0	20.1
East Java	1983/84	130.0	285.2	343.2	1,160.3	121.4	253.1	3,348.8	2,087.0	9.3	8.8	98.0	17.9
	1984/85	139.6	336.3	358.4	1,304.1	134.7	325.9	3,714.8	2,382.8	9.6	9.7	104.0	18.3
	1985/86	132.0	350.0	337.6	893.4	135.3	371.0	3,752.8	1,701.1	10.2	10.6	111.0	19.0
	1986/87	150.0	411.9	312.2	1,181.1	138.0	391.9	3,473.2	2,421.3	9.1	9.5	111.0	20.5
	1987/88	133.3	380.2	300.9	984.6	120.2	415.4	3,583.8	2,096.0	9.0	10.9	119.0	21.2
	1988/89	122.7	388.4	290.4	1,237.6	352.9	743.4	3,438.6	2,527.9	9.4	11.3	118.0	20.4
South Sulawesi	1983/84	32.9	11.0	31.3	314.3	32.2	9.5	319.2	479.2	9.8	8.6	102.0	15.3
	1984/85	34.7	15.4	28.5	259.0	36.8	13.4	302.4	358.9	10.6	8.7	106.0	13.9
	1985/86	40.1	18.3	33.2	263.2	43.8	17.0	348.9	379.8	10.9	9.3	105.0	14.4
	1986/87	53.4	34.8	36.8	314.1	65.1	35.5	433.7	486.6	12.1	10.2	118.0	15.5
	1987/88	47.2	39.1	31.8	284.0	51.2	39.8	366.7	440.9	10.9	10.4	115.0	15.5
	1988/89	54.2	38.5	41.0	320.9	53.9	38.6	447.8	501.8	9.9	10.0	109.0	15.6

Source : Directorate General of Food Crops Agriculture

APPENDIX L

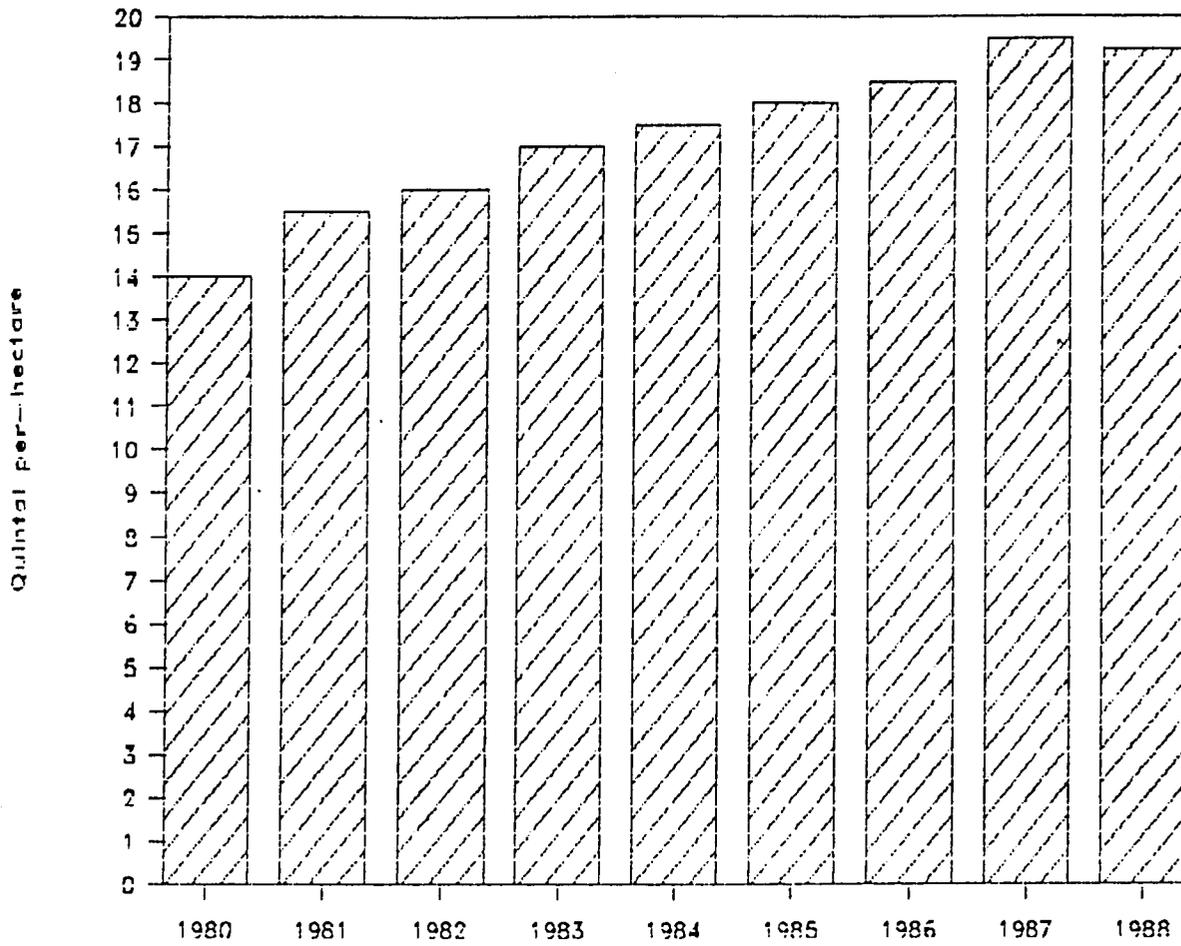
**Average Yield/Hectare
for Cassava, Corn and Soybean**

Average Yield/Hectare for Soybean



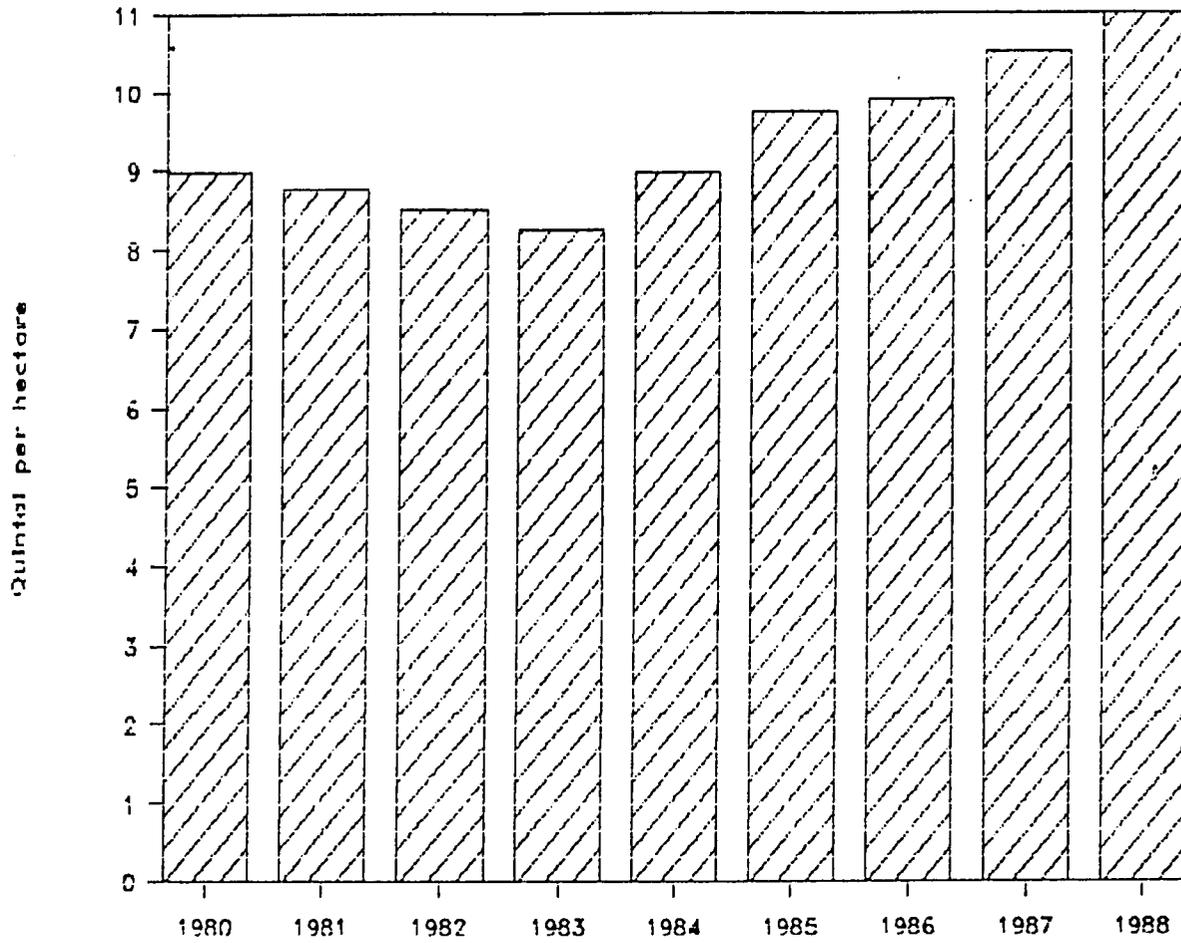
Source : Ministry of Agriculture

Average Yield/Hectare for Corn



Source : Ministry of Agriculture

Average Yield/Hectare for Cassava



Source : Ministry of Agriculture