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MID-TERM EVALUATION OF THE SECONDARY FOOD CROPS DEVELOPMENT PROJECT

EVALUATION TEAM

June 25, 1986

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I. EXECUTIVE SUMMARY

1.1. Results Achieved in the First Two Years

1.1.1. Grain Legume (kedele) production has increased dramatically from 703 thousand tons in 1981 to 867 thousand tons in 1985. Area harvested increased dramatically in 1984 in East Java, fell in 1985 and is expected to rise again in 1986. Area expansion has been most dramatic in South Sulawesi, increasing from 11,025 hectares in 1984 to 32,000 hectares in 1985. A large share of this area advance was from the project kabupaten Bone. Area planted to grain legumes has nearly tripled in Lampung since the start of the SCDP project in 1982/1983. Not all of this expansion can be attributed to the SCDP but it has happened in areas where the dem-farms of the SCDP have been successful and has occurred at the same time as the implementation of the SCDP. Consequently, a share of these results should be accorded to the SCDP.

1.1.2. The SCDP's Dem-Farms in the three kabupatens of North Lampung in Lampung Province, Bone in South Sulawesi Province and Ponorogo in East Java Province have been very successful. As an example the yields of grain legumes (kedele) on the dem-farms in Bone Kabupaten of 1.5 tons/ha in comparison with .75 tons/ha outside the dem-farms. In Ponorogo Kabupaten the yields were 1.85 tons per ha and outside were 1.07 tons.

These dem-farms form the nucleus of the SCDP and serve as a diffusion mechanism for recommended technologies. Dem-farms are flexible in the ways the objectives and methods can be adjusted in response to national development goals.

The dem-farms have shown that the place where the researchers, extension field workers and farmers should meet to test new technologies, to demonstrate new cultivation techniques and to exchange information is on these demonstration farms.

1.1.3. The cropping intensity has increased in Bone and North Lampung Kabupatens due to the example provided by the dem-farms. Formerly it was only one crop per year in these two kabupatens and this has changed to an intensity of two and three crops per year. The second and third crops are secondary crops as shown in the dem-farms. This is especially noticeable in Bone where the dem-farm initially demonstrated the benefits of a second and third crop to farmers who normally only grew one crop per year of rice. The cropping intensity in Ponorogo Kabupaten has increased only somewhat since it was already high before the SCDP's program.

1.1.4. As a result of the close cooperation between the researchers from the Food Crops Research Institutes and

the Dinas Pertanian at the provincial level, fertility recommendations are more site specific and soil problems identified correctly. Since the SCDP has agreements with these Institutes, all of the production problems confronted by the farmers in the dem-farms have been examined. The SCDP has contributed to the cooperation between extension and research workers.

1.1.5. Private sector cooperation with the extension workers has been improved by the SCDP's programs. A course has been offered by a private company on herbicide use to the extension personnel and contact farmers.

1.1.6. Good grain legume nodulation on the dem-farms has occurred because of the close supervision of the rhizobial innoculum. It is very important to keep the rhizobium cool from the source to the farmers fields.

1.1.7. Pest management has improved in the dem-farms because of the close supervision of the sites by the extension workers. This has been an important example for the farmers in each region on the benefits of pest management.

1.1.8. The SCDP has contributed to the secondary crop crash programs by providing tested research results, improved cropping patterns, and successful dem-farms for field days. As was included in the new fiscal year budget for the SCDP program, the concept of the dem-farm has now progressed to the intensification area (Pengembangan Palawija) where the inputs are provided as credit from the BRI.

The Directorate of Production will have 90 units in each of the Kabupatens and this is a direct outgrowth of the dem-farm approach. This new program is funded directly by the Bank of Indonesia (BRI) and illustrates how the SCDP can test an extension method and then the Government takes over the approach without additional funding from USAID.

1.2. Description of the Past Program

The Secondary Food Crops Development Project (SCDP) as initiated in May 1983, with AID loan funding of $6.4. million and GOI funding of $6.3 million. In August, 1985, $1.0 million of grant funding was added to the project to support food policy studies, technical assistance and training.

The project is pilot effort which introduces and refines production and marketing of secondary crops in three project sites representing various agronomic and socio economic conditions in Indonesia. It has four component:

a. crop trials and demonstrations to test replicable cropping systems that can provide an empirical basis for the formulation of policies on prices, subsidies, production, consumption and market development;

b. the introduction of improvements in the quality, storeability, and market acceptance of secondary crops;

c. promotion of appropriate and tested production technologies using improved varieties, commercial inputs (fertilizers, seeds, inoculm, pesticides), improved agronomic practices and site -specific cropping systems; and

d. the identification of changes in extension and marketing to maximize the contribution of secondary crops to improved nutrition.

An important project element is the development of a planning and project implementation system which allocates increasing responsibilities to provincial and kabupaten agriculture staff to identify priority specific problems constraining production, to plan research activities to test technical solutions to these pressing problems, and to establish on-farm trials and demonstration plots to determine farm level acceptance of these new technologies. This requires improved coordination between provincial extension services and regional research institutes in the design, implementation and analysis of project supported field testing and the subsequent transfer of new technology to the intended beneficiaries.

1.3. Problems Confronting the SCDP

1.3.1. Training. The training program has not been very active in sending staff abroad for short term training nor developing in-country training program. For the first two years only 10% of the funds allocated in the project paper to training was actually implemented.

1.3.2. Operational Support. A substantial part of the program of the SCDP is behind schedule or has not been carried out. This support includes the cropping systems research, the marketing and baseline studies and the dem-farms. Based on the Project Paper only 32% of the funds for the first two years have actually been used.

1.3.3. GOI Counterpart Funds. In the Project Paper there were substantial funds from the GOI for training and operational support. Only a rather small amount of these funds have actually been expended in the first two years of the project. It appears that even in the DIP requests ly a small portion of these funds have been budgeted for the SDCP's program. However, beginning in the 1986/87 GOI budget for the SCDP the Bank Rakyat Indonesia (BRI) will

provide funds for the program.

1.3.4. Quality of the Baseline Studies and Marketing Studies. The studies carried out by the Universities for the SCDP may have been weakened by the methodology used in the conduct of these studies.

1.3.5. Project Implementation Unit. The Palawija Project Office has had four heads in three years and they have not been full-time on the SCDP. This has caused administrative, planning and implementation problems for the Program.

1.3.6. USAID's Support. The PPO has had problems understanding the financial and narrative reporting requirements and reimbursement procedures of USAID. It is felt that USAID has not provided sufficient training to the PPO in these procedures and requirements.

1.3.7. Cooperation. Both USAID and the PPO do not fully understand each others procedures. Cooperation between these two organizations has not always been adequate for carrying out the program.

1.3.8. Technical Assistance. In the first three years of the project, only 50% of the technical assistance planned for the SCDP has actually occurred.

1.3.9. Lack of Support for National Programs. Although the SCDP is providing some support to the national crash production programs, it has not directly provided support to these programs and USAID has tended to discourage this direct support. This is a problem because the Directorate of Production is deeply involved in these programs and USAID should be providing more support for these efforts.

1.3.10. Lack of Involvement of Bulog, BRI and Ministry of Cooperatives. In the first two years there has been almost no support from SCDP to provide assistance to Bulog, Bank Rakyat Indonesia and the Ministry for involvement in the Project. The Project Paper clearly envisioned their presence in the program.

1.3.11. No Marketing Support. The SCDP has not been active in supporting the marketing of secondary food crops.

1.3.12. Insufficient Support to Private Industry in Supply of Inputs and Extension Programs. Although there is some private industry activities, the SCDP has not been encouraging these programs.

1.4. Major Recommendations

1.4.1. Extension of the SCDP. The Secondary Crops Development Project should be extended for an additional five year period which would extend until 1993 when the two

remaining years of the project are added to this time frame.

1.4.2. Expansion of the SCDP. The SCDP should be expanded in the three provinces of Lampung, South Sulawesi and East Java to include from 1 to 3 additional kabupatens in each province. The SCDP should expand to at least one more province which should be NTT. The extension would make it possible to expand by an additional kabupaten each year and to initiate the work in the additional province.

1.4.3. Revision of the Goals of the SCDP. The original goals of the SCDP were "(a) to increase the production of secondary crops by about 15% - 30%, (b) to improve the marketing system of secondary crops, (c) to increase household consumption by 10% - 15% and improve nutritional status of target groups, (d) to increase employment by 20% - 30%, and (e) to increase farm income by 20%. In the extension of the SCDP the goals should be more realistic and more achievable. The revised goal would be the development of appropriate strategies for the transfer of improved technologies from the research institutions using an integrated extension approach to the farmers for food crop diversification.

1.4.4. Major Responsibilities of Each Organization Working with the SCDP. The Directorate of Production is responsible for the Palawija Development (Pengembangan Palawija) Program which has been included in the SCDP's DIP for the first time in the 1986/87 fiscal year. This is a major portion of the SCDP's program, is the primary source of counterpart funds from the BRI, and is not part of the loan funds from USAID. As shown in the revised goals this program is the next logical step after the testing and extension activities in the SCDP.

The Directorate of Food Crop Economics would have major programs on (1) a market information service, (2) supply and demand studies, (3) marketing studies, and (4) quick studies for assisting immediate policy issues.

The Directorate of Extension in cooperation with the Dinas Pertanian in the three provinces would be jointly responsible for the SCDP's dem-farms and for the development of various extension approaches to be tried by the SCDP.

The Dinas Pertanian in each of the provinces would be directly responsible for dem-farms in each province and the provision of the inputs to these dem-farms.

The Bogor, Malang and Maros Research Institutes for Food Crops would be responsible for the applied farm research on or adjacent to some of the Dem-Farms. They would continue their research program at the present sites in the three kabupatens, would set-up research sites at

some of the dem-farms in cooperation with the Dinas Pertanian and extend the technologies to similar agroecosystems in the new kabupatens in the extended SCDP.

1.4.5. Strengthening the Project Implementation Unit. The SCDP has been hampered by the lack of a full time head of the PIU and a full time staff. An experienced Indonesian official should be appointed to be the full-time head of the SCDP. He should be assisted by a full-time staff, including officials, secretaries and other staff members. They should be provided with sufficient incentives that they can in reality allocate their full time only to the SCDP. If there is not a full time staff, then USAID should consider discontinuing the project.

1.4.6. Location of the Project Implementation Unit. The Palawija Project Office (PIU) of the SCDP is located at the Directorate Bina Produksi which was made responsible for the demonstration farms. These were a major part of the SCDP.

The Directorate responsible for the SCDP needs to be reviewed. The entire evaluation team of six members believes that the Directorate responsible for the SCDP should be reviewed with the emphasis put on the Directorate most able to provide full time staff and the Directorate most active in the programs of the SCDP.

The decision should take into consideration (1) the responsibilities of the Directorates of Extension, Production and Farm Economics; (2) the changed goals of the SCDP, (3) the relationship between USAID and the Directorate primarily responsible for projects funded by USAID, and (4) the Directorate which has sufficient staff, who are not already deeply involved in projects funded by foreign donors or major development programs, and can thus assign full time staff to the SCDP's project implementation office.

1.5. Reasons for the Expansion and Extension

1.5.1. Logical Meeting Place. USAID should be providing support for the dem-farms since it is the logical meeting place of the researchers, extension personnel, farmers and local government officials. At this meeting place the researchers can learn about the problems of the farmers and extension personnel and incorporate their production problems into the Balitans' research program. The researchers can inform and demonstrate the appropriate technologies being developed at the Institutes. Ideas among these three groups can be exchanged for mutual benefit. The extension personnel and the researchers can develop close working relationships based on this experience at the dem-farms. The local government personnel can learn about the progress of the programs for the local villagers. The researchers and extension

personnel can learn about how to help the local government. It is extremely important to put as many resources from the SCDP as possible into encouraging these dem-farm meetings on a frequent, both planned and spontaneous, basis.

1.5.2. Supporting Extension Philosophy. USAID should provide support to the SCDP because it is supporting the extension philosophy in Indonesia. This is the following:

1. Development of appropriate technologies at the Research Institutes;

2. Testing of these technologies by the Research Institutes at sites in the farmers fields;

3. Transferring the technologies to the Provincial Agricultural Service's extension personnel to be applied on dem-plots and dem-farms.

4. Expanding the dem-farms to a larger area to become dem-areas in cooperation with the BRI.

5. Adding the cooperative movement and creating KUDs from the dem-areas.

It is important for USAID to assist the GOI to move from the dem-farm concept to the dem-areas and then the KUDs. This requires more intensive use of the dem-farms in the original three kabupatens so that these can be demonstration kabupatens for the government. This also requires a medium long period (5 to 7 years) of support to adequately assist in the development of the dem-areas, dem-kabupatens and the KUDs.

An important aspect of this is the support that will be given to the very important national crash production programs for secondary crops. This has not yet been emphasized but should play an important part in the USAID assistance to the GOI.

By assisting this expansion and intensification, the USAID can provide support to the cooperative movement, assist the banks in their farmer credit programs, and support the crash kedele and crash jagung production expansion programs.

1.5.3. Dem Farms Continued Support Although the cropping system with grain legumes has been very successful, it does not mean the time has arrived to discontinue support for the dem-farms. They have only begun to work on integrated pest management and appropriate responses to varied soil conditions. The crops will change depending on the prices. Improved technologies will be developed and need to be demonstrated. The meeting place will need to be encouraged until it has a sound foundation in the extension philosophy.

1.5.4. Private Industry Cooperation Private industry is only just beginning to have extension programs for agents and contact farmers and it is very important for USAID to continue supporting this effort.

1.5.5. Support for Post Harvest Programs. In order to provide more support to the post harvest processing, storage and marketing of these secondary food crops, USAID needs to continue and intensify their support.

1.5.6. Cooperation with the Second and Third National Agricultural Extension Projects. The GOI has been carrying out the second NAEP with partial funding from the World Bank. Since this program is primarily the provision of hardware, it was felt that USAID could make a contribution by concentrating on the provision of technical assistance to a selected number of provinces to assist in strengthening extension of new technologies to the farmers.

1.6. Supporting Recommendations

1.6.1. Cropping Systems Research

1. The studies carried out by the Food Crops Research Institutes would be applied on-farm research including farm management /farming systems work on costs, returns, and input use to determine the optimum farming systems and the potential returns to the farmers. This applied farm research would test appropriate technologies, different cropping systems, test various crop varieties, test the soils and develop appropriate pest management techniques.

2. The applied farm research by the Balitans should be either in the dem-farms or located on the edge of the dem-farms and outside these area but in sites of future dem-farms. In this way the researchers and extension staff will have a natural meeting place at the dem-farm for an exchange of information . The PPL would be part of the applied agricultural research team for the site and would supervise the cultivation of both the dem-farm and the research sites.

3. The applied farm research would be administered by CRIFC and not Balitan Bogor in order to more efficiently carry out the program. Balitan Maros would be in charge of the research in South Sulawesi. Balitan Malang should be in charge of the research in East Java. The Balitan Bogor would be in charge of the research in Lampung. They would cooperate with the BP3 in the conduct of this program in Lampung.

1.6.2. Extension of Improved Technology

1. The results of the dem farms in the three provinces are substantial and thus the momentum should be maintained by adding one to three more kabupatens to the SCDP in East Java, Lampung and South Sulawesi. In order to expand the coverage of the SCDP an additional province in Eastern Indonesia should be included in the program after the initiation of the expansion in South Sulawesi, East Java and Lampung. This province would be either NTB or NTT.

2. The program would be separated into two phases. Phase I would be for the new kabupatens in the SCDP which would be Ngawi, Madiun and Magetan in East Java; Wadjo and Soppeng in South Sulawesi; possibly one more in Lampung and one kabupaten in NTT or NTB. For this phase, as was planned in the beginning for the SCDP, twenty dem-farms per year for a three year period, would be established and then would possibly move into a Phase II in some of these kabupatens. In Phase II in Ponorogo, Bone and North Lampung the number of dem-farms would be increased by 20 each year until all of the desa have been included in the program.

3. The dem-farms should be for a one year period and depending on the recommendation by the Dinas Pertanian in each province, the SCDP would provide inputs for the entire cropping system in the demonstration. The East Java program would probably be for a one year full input program and thereafter only limited inputs. The South Sulawesi program would depend on the Dinas Pertanian if they feel it should be for a three year period of full inputs support for the dem-farms or a one year support program as in the other provinces. If it should be a three year period, then the numbers should be reduced by an appropriate number.

   The inputs in the technology package should be seed, fertilizer, pesticides, and herbicides. Seed and innoculum only should be provided for the second and third years of the dem-farms. Power threshers and water pumps should be considered for the technology package and would depend on the decision of the Dinas Pertanian at the Province level. The inclusion of cattle and post harvest tools should be flexible and decided by the Dinas Pertanian in each province. Guidelines should be prepared by each Dinas Pertanian for the management of the revolving fund for each Kelompok that has a dem-farm. Training of the PPLs and farmers should be continued and field days held at each dem-farm.

4. In Ponorogo a few selected successful dem-farms should be encouraged to become dem-kelompoks. To accomplish this a few limited inputs would be provided to the kelompoks. This would be a test of a concept for a possible Phase III where the dem-farms expand to dem-kelompoks.

5. A number of extension approaches should be tested for their effectiveness in each province. They should be sponsoring more than just the dem-farms. It is important to give assistance to the Balai Informasi Pertanian in preparing appropriate audio-visual extension support materials; pretested, well-designed pamphlets, flip-charts, posters, and slide materials; local radio and television spots and programs in the regional languages; and incentives and promotions through private sector networks. In addition they should have more field days for farmers to observe the results of the dem-farms. Funds should be made available for production of materials. Trips among the provinces for the contact farmers should be sponsored.

6. The Balitan's applied farm research would be located on or adjacent to the Dem-Farms. This will encourage an exchange of information on an informal basis between the extension personnel and the researchers. In this way there can be a backward linkage from the PPLs and PPSs to the researchers on the farmers problems and a forward linkage from the researchers to the PPLs and PPSs on research results of the Balitans.

7. The role of the private sector within the regions where the SCDP is active has already begun and this should be encouraged. Contacts with the input suppliers and encouragement to conduct training courses would be helpful.

1.6.3. Social and Economic Studies

1. A Market Information Service should be setup in the Directorate for Food Crop Economics and a seven year program prepared and funded for each of the provinces in the SCDP's program. The first step would be the establishment of a pilot project in East Java and by following a phased establishment of one additional province added each year.

2. The pilot project in number 1 above should concentrate on broadening the quantity and improving the quality of market information provided to farmers and traders. The market information would include the price reporting system channeled through the mass media to the farmers. A biweekly market situation and outlook report would be prepared and distributed to the farmers and traders in close cooperation with the Agricultural Extension Service.

3. As part of the Market Information Service, the SCDP would assist in establishing a unit to carry out marketing appraisals. These studies would be included in the regular and planned activities of BINUS. Under this program marketing and production feasibility studies would be conducted in the selected kabupatens to

determining their potential in the expansion program. If it is found that a selected kabupaten should not be in the SCDP expansion, then the Dinas Pertanian would select a replacement.

4. In order to strengthen Indonesia's promotion of non-oil exports there is a need to improve national and international market analysis. The data collected and the skills acquired by the Market Information Service would be the most appropriate starting point to begin with this program. Studies such as the palawija marketing system analysis concentrating on the channels, processing and storage could facilitate more effective agricultural marketing policies.

5. Technology impact studies should be included in the SCDP's program in order to assess the impact of improved agricultural technologies on net returns per ha, input use, costs, family and hired labor use, family incomes from on-farm and off-farm activities, rural employment, and resource use. These studies would examine both areas where the dem-farms have introduced new technologies and areas not yet affected by these technologies.

   In order to compile the necessary information over a number of years and to properly analyze this data and prepare the reports on a timely basis it will be necessary to plan on a long term basis and fund the program in such a way that experienced staff can be engaged for this work. The results of this research would assist both the SCDP and policy makers to make decisions on resource allocation for palawija crops.

   Since the SCDP has already initiated discussion with the Agro-Economic Survey Foundation which has twenty years of experience with this type of research, this organization should be contracted by SCDP and funded directly by USAID to carry out this long term program. The AES would prepare a long term program that would include the research program, establishment of a central office and to provide full-time staff members. This would ensure a high level of research and assure the SCDP of a continuing source of quality information on secondary food crops.

6. The Agricultural Economics Departments of the Balitans would carry out the farm management/farming systems economic analysis of the farmers in the dem-farms and the sites of the applied agricultural research of the Balitans. These studies would examine the costs and returns of the cropping and farming systems, the incomes of the farmers, the use of inputs and the economic and institutional constraints confronting these farmers in expanding their production and increasing their family incomes. Data for this analysis would be from both the

dem-farm records and interview surveys of the farmers by the Departments' staff.

Meetings should be held each year for the staff of each Department to formulate the objectives of these studies, develop the methodology, prepare relatively similar questionnaires and design the data analysis. Then, when the data has been collected there would be another meeting for the data analysis and report writing. A yearly seminar would present the results of this research to policy makers.

A detailed seven year program for these studies should be prepared and funds allocated for the research on a yearly basis.

7. The marketing studies presently being carried out by the Universities would be completed. This would be the final stage of SCDP's funding of research by the Universities. It is felt that the future research should be done on a more continuous and planned basis primarily by the Balitans and BINUS.

1.6.4. Planning and Project Implementation

1. Long term and short term technical assistance would be provided by a combination of an Indonesian consulting company and a U.S. consulting company. They would also on behalf of the SCDP manage the training program and assist the financial management of the SCDP which would include the past activities as well as the future program. The funding for the long and short term technical assistance would be USAID grant funds and the contract would be a direct USAID to the consulting companies in order to reduce the local cost of the technical assistance.

   Another part of the terms of reference of these experts would be to assist the NAEP program supported by the World Bank in each of the selected Provinces.

2. The long term technical assistance team would be composed of the following positions, be either expatriate or Indonesian and located at the specified institutions:

   Project Implementation Unit

   1. Planner and Management Expert with advanced degree in extension, economics or public administration who would be the Technical Team Coordinator.

   2. Administrative specialist with experience on USAID projects and knowledge of the reimbursement requirements of the GOI and USAID.

   3. Monitoring and Evaluation Expert with advanced degree in agricultural economics who would assist

the analysis of the dem-farms and the applied on-farm research.

BINUS

4. Economist with research experience in supply and demand analysis and policy oriented research.

5. Marketing Information Systems Specialist .

Directorate of Extension

6. Agricultural Extension/Communications Specialist.

Dinas Pertanian Province

7. Extension Specialist with advanced degree in agricultural communications and training, stationed in Lampung with the Dinas and traveling on a regular basis to the other three provinces.

8. Extension Specialist with advanced degrees in entomology and plant pathology and experience in pest management extension systems stationed in East Java at the Dinas and traveling on a regular basis to the other three provinces.

9. Extension Specialist with advanced degrees in agronomy and soil science and who would be stationed in South Sulawesi and have a joint appointment with the Balitan Maros and the Dinas.

10. Extension Specialist with advanced degree in agronomy, who would be stationed in NTT or NTB.

3. Short term (Indonesian) technical assistance would include experts in entomology, plant pathology, agronomy, farming systems, macro economics, computer science, farm management economics, rural sociologists, extension, communications, marketing economists, project administration, accounting and bookkeeping. This would be provided by the joint Indonesian and Foreign consulting companies and would be to assist the applied agricultural research, the dem-farms, social and economic studies, extension of improved technologies, and project administration. The funds for the short term Indonesian experts would be grant funds paid directly by USAID to provide assistance to various aspects of the SCDP. They would be consultants from AARD, the Universities and other sources.

4. A yearly workshop in September of each year attended by all relevant participants would be held to design the detailed program for the direct USAID funded programs. This plan would be prepared each year and submitted to USAID for their concurrence. USAID would issue a single

PIL covering this program. A bank account for each program would be setup and funds for 90 days of operation deposited by USAID and renewed at the submission of the expenditures for that period. The contractor consulting companies would assist the management of these funds.

5. At the above yearly workshop in September a detailed plan for all of the prefinanced/reimburseable programs and the direct GOI funded programs would be prepared and submitted to the PPO for the DUP and DIP budgeting process and the sub-projects would be clearly specified, the head of the sub-project designated as the responsible officer for the funds and these funds would be earmarked for each specific project. The ROP would be prepared based on these detailed plans and the DIP and funds would be clearly earmarked in this document.

6. In order to bridge the gap between the present technical assistance and the technical assistance in the extension of the project, William Ruscoe should be extended for a six month period beyond his present contract.

7. The head of the SCDP must immediately take steps to reconcile the reimbursement of the past prefinanced activities and to determine what funds have and have not been used by the SCDP. An accounting of the financial and administrative status of the SCDP should be made as soon as possible. The administrative specialist in the long term technical assistance would assist in the reconciliation of the reimburseable and direct USAID funds of the past and provide assistance in the future.

8. The specific components of the SCDP and the institution responsible for the components would be the following:

    a. Applied On-Farm Research and Farm Management/ Farming Systems economic research by the AARD;

    b. Dem-Farms by the Dinas Pertanian in each province in cooperation with the Directorate of Extension;

    c. Palawija Development (Pengembangan Palawija) Program by the Directorate of Production

    d. Extension programs by the Directorate of Extension;

    e. Training of the PPS and PPM by AAETE;

    f. Technology impact studies by the Agro Economic Survey Foundation.

    g. Supply and demand studies, marketing studies, and the marketing information service by BINUS;

h. Project planning, budgeting, monitoring, administration and bookkeeping by the PIU.

i. Long term and short term technical assistance and training in-country and abroad by the joint Indonesian and Foreign Consulting Companies.

9. The administration of the project should be -

a. Locate the project in the Directorate General of Food Crops.

b. Dem-Farm funds directly to Dinas Pertanian in the province, then to Dinas Kabupaten.

c. Applied research funds direct from USAID to the Director of CRIFC.

d. Earmarked DIP funds.

e. Expert in each province but on-call to others.

f. Dem-farms and test plot on same site. Meeting grounds of the researchers and extension personnel.

i. USAID funds direct to BINUS, AARD and the AES Foundation.

10. Incentives of some type should be given to the persons doing the work at the kabupaten, province and national levels for SCDP supported programs.

11. The Steering Committee for advising on policy of the SCDP would be made up of the Directors of the various institutions in the Project and the Committee would be provided with sufficient funds to meet on a regular basis. The Technical Team would be eliminated since the PIU would have sufficient staff to take over this function.

12. USAID would train the staff of the various institutions in the SCDP on how to report on expenditures for direct payments and how to request reimbursement. USAID creates part of the problem because they do not give adequate assistance on how to carry out the reimbursement.

13. A Market Information System in BINUS to be funded by the loan.

14. A coordinating body would be established at the provincial level to manage the cooperation between the Dinas Pertanian and Balitan Maros. Their actual budgets must be separate and earmarked for their use, but the coordinating body could approve the joint program.

15. USAID should concentrate their various projects as much as possible in a few strategic regions of the country. These would include South Sulawesi, East Java, NTT and NTB.

1.6.5. Training

1. The training program should be clearly specified for the seven year period and specialized courses given by staff of the Balitans. Priority should be given to the training of the PPS and PPL.

2. A Training Center for PPLs and Contact Farmers should be set up in Ponorogo at the Agricultural High School funded by the World Bank. This training center would provide instruction to the PPLs and contact farmers in the new kabupatens in the SCDP in East Java and perhaps the other provinces. Funds would be provided for preparation of materials, design of the program, incentives for the teachers and travel and per diem for the PPLs and Contact Farmers.

II. Background of the Mid-Term Evaluation of the Secondary Food Crops Development Project

The Secondary Food Crops Development Project was initiated in May 1983 by the Government of Indonesia and USAID. The scheduled life of the project is for a five year period ending in mid 1988. The mid-term evaluation was scheduled for mid 1985. However, the Project delays in getting started and this mid-term evaluation was then requested for the period of April 14 to May 16, 1986.

The Evaluation Team was composed of the following persons:

1. Dr. William L. Collier, Team Leader

2. Mr. Sadikin Sumaatmadja

3. Ir. Sardjono Reksodimulyo

4. Mr. Gerd Juntermanns

5. Mr. Howard E. Ray

6. Mr. Anthony J. Meyer

This team was actually separated into two distinct groups, with the first group being composed of Mr. Ray and Mr. Meyer who concentrated on agricultural extension and communications and the second group being Mr. Collier, Mr. Sadikin, Ir. Sardjono and Mr. Juntermanns. The first group had a separate term of reference and prepared a separate report which has the recommendations included in this evaluation. The second group was thus primarily responsible for the detailed evaluation of the SCDP.

The first group of Ray and Meyer carried out their consultancy from March 30 to April 23, 1986. They met officials of USAID and the various GOI organizations related to extension during their first week, then had a one week field trip to East Java and South Sulawesi, had follow up interviews on their return and submitted their draft report on April 23, 1986. The persons contacted by this group is shown in their report. They were able to meet only once with the second group of experts carrying out the evaluation.

The second group of Collier, Sadikin, Sardjono, and Juntermans initiated the evaluation on April 14 and spent that week in Jakarta meeting GOI officials and USAID staff. In the second week Collier and Sadikin went to South Sulawesi Province to visit Bone Kabupaten and meet the officials involved in the SCDP in Bone and Ujung Pandang. Sarjono and Juntermans went to Lampung Province to visit North Lampung Kabupaten and meet the officials in this kabupaten and at the provincial level concerned with the SCDP. Then, in the third week after a meeting in Jakarta of the four member team, the team went to East Java Province to visit Ponorogo Kabupaten and meet with officials concerned with the SCDP in Ponorogo and Surabaya. The list of persons contacted by the Evaluation Team of four persons is shown in the Appendix.

Two resource persons who are experts with the SCDP traveled with the team. They were Mr. Steve Tabor stationed at the Project Office in Jakarta and Dr. William Ruscoe stationed at the Dinas Pertanian Office in Ujung Pandang.

Dr. Collier was given the assignment of preparing the overall report, reviewing and writing the section in this evaluation on Planning and Project Implementation component of the Project. Ir. Sadikin was given the assignment of reviewing and writing the section on the Cropping Systems Research component. Ir. Sardjono was given the assignment of reviewing and writing the section on Extension of Improved Technology component. Mr. Juntermanns was given the assignment of reviewing and writing the section on Social and Economic Studies component. These four components covered all of the activities in the SCDP.

This report will first review the secondary food crops situation in Indonesia, then provide information on the extension of information to the farmers, next give a description of the SCDP. The next four sections on the four components are each prepared by one of the Evaluation Team members and are on cropping systems research, extension of improved technology, social and economic studies, and planning and administration.

III. Secondary Food Crops Production in Indonesia

3.1. Trends in Area, Yield and Output

The production of paddy has climbed steadily from 32.7 MMT in 1981 to 38.2 MMT in 1985. The increase in production has been primarily due to an increase in productivity. Average yields have increased from 3.4 tons/hectare to nearly 4 tons/hectare

over the same period, an increase of 18% in five years. During the same period, the area allocated to rice production has varied between 9 to 9.7 million hectares, with pronounced drops in area experienced in 1982 and 1983. Rice yields are above national average in South Sulawesi and below average in Lampung, reflecting primarily differences in irrigation availability. Area allocated to rice has increased steadily in Lampung due to the expansion of irrigation facilities while in East Java and South Sulawesi the area allocated to rice has grown at a slower pace.

Corn area varies widely from year to year reflecting the sixteen month production cycle of corn production in East Java. Production has climbed from a low of 3.2 million MT in 1982 to a high of 5.39 million MT in 1984 and down to 4.81 million MT in 1985. Wide swings in production are related to wide swings in area harvested since yields have been generally rising. Corn yields in South Sulawesi and Lampung remain below national averages while yields in the major producing province of East Java are, on average twenty percent higher than yields in South Sulawesi and Lampung, reflecting the wider use of improved seeds and cultural practices in East Java.

Cassava production peaked in 1985 and is expected to decline in 1986 as more lands are allocated to grain legumes and corn. Cassava yields have increased by approximately 2 percent per year since 1981 and the erratic swings in production are primarily a result of changes in area allocated to cassava. Yields in East Java and South Sulawesi have tended to follow national average patterns while yields in Lampung have shown a tendency to decline since 1982.

Groundnut area has steadily increased from 461,000 hectares in 1982 to 552,000 hectares in 1985. Average yields have also increased, from 9.47 to 10.40 tons, but at a slower pace. Yields in East Java and South Sulawesi have increased but at an erratic pace while yields in Lampung have tended to decline. Area harvested has remained relatively stable in East Java.

Grain legumes production has increased dramatically from 703 thousand tons in 1981 to 867 thousand tons in 1985. Area harvested increased dramatically in 1984 in East Java, fell in 1985 and is expected to rise again in 1986. Grain legume yields have fallen in East Java between 1981 and 1985 reflecting expansion of production into marginal lands and outbreaks of pests and disease. Area expansion has been most dramatic in South Sulawesi, increasing from 11,025 hectares in 1984 to 32,000 hectares in 1985. A large share of this area advance was from the project kabupaten Bone. Area planted to grain legumes has nearly tripled in Lampung since the start of the SCDP project in 1982/1983.

Production of mungbeans has varied widely from year to year in the 1980's. Production reached a low of 123,000 tons in 1982 before rebounding to 189,000 tons in 1985. Yield figures suggest a high although erratic growth from 1982 onwards.

Area figures likewise show dramatic gains between 1982/1983 representing partly a substitution for cassava in major production areas. Production of mungbeans was estimated to have doubled between 1984 and 1985 in East Java, although this is difficult to explain. Macro-level statistics on mungbean production and yield are considered relatively weak because of the prevalence of mixed cropping with mungbeans.

3.2. Prices

Support prices are in effect for rice, corn, soybeans and mungbeans. These prices have remained set at the same level since 1985 and are as follows:

KUD Purchase Price (average)
Rp./Kg.

Paddy Rice:	175
Corn:	110
Grain Legumes:	300
Mungbeans:	325

The procurement program has been active primarily for rice and corn. The build-up of Bulog rice stocks to 2.7 million metric tons of rice has inhibited large-scale procurement of secondary food crops. This linked with difficulties in meeting minimum procurement quality specifications has limited the involvement of Bulog in secondary crop price stabilization.

Inter-Seasonal prices of corn, cassava, peanuts and mungbeans are highly variable compared to prices of rice and soybeans. This is a reflection of production patterns, high costs of inter-seasonal storage and limited public sector price stabilization effort. An example of monthly price patterns for corn is included in the appendix.

3.3. Production Costs and Returns

Increases in production and productivity of secondary food crops is a reflection of the absolute and relative profitability of those crops. A comparison of input costs and returns for the main food crops for 1985/1986 is presented in the table below:

1985/1986 Per Hectare Costs and Returns from
Major Production Areas of Indonesia
(Progressive Farmers)

Crop	Production Cost ('000 Rp)	Yield (tons)	Net Returns ('00 Rp)	Net/Month
Wet Rice	502	5.1	171	49
Dryland Rice	330	2.6	17	4
Corn	375	4.2	129	40
Soybean	349	1.1	117	40
Peanuts	525	1.2	258	73
Mungbeans	337	1.2	149	50

Cassava	347	24.7	381	42

Source : Agriculture Department Laporan Biaya Produksi dan Pendapatan Usaha tani Padi dan Palawija 1985/1986

As is clear from the above figures, net farmer returns, on a monthly adjusted basis are significantly higher for palawija crops than for dryland rice. This has encouraged farmers to shift from dryland rice production to secondary crop production. Returns are highest for peanuts, mungbeans, soybeans and corn, on a monthly adjusted basis. The cost of production for rice is more than fifty percent greater than that for the secondary crops (with the exception of peanuts). This is primarily a reflection of greater labor input for wetland rice and higher application of chemical inputs. Where this comparison made on average labor absorption levels in palawija production are well below that in wetland and dryland rice production.

3.4. Trade

Record levels of rice production in 1985 and 1986 assured the nation's self sufficiency in rice. In those two years, Indonesia built up large domestic stockpiles and became a net exporter of rice. Exports of rice are less than one percent of total production at a level considered adequate to meet domestic consumption requirements.

Rice

Year	Production	Imports	Export	Stocks
	(1,000 MT)			
1982	21,493	308	0	na
1983	24,005	1,165	0	na
1984	25,933	387	0	2,768
1985	26,300	34	400	2,773
1986	26,800	30	200	2,500

source: CBS; Bulog

Indonesia is both an importer and exporter of corn depending on the needs of the feed sector and the seasonal availability of corn. In 1985, 38,834 tons of corn were imported from the PRC and 10,500 tons from Thailand. Yet,49,000 tons of corn were exported to Singapore and Northern Africa during the same year.

Corn

Year	Production	Import	Export

(1,000 MT)

1982	3,234	77	1
1983	5,086	27	14
1984	5,359	59	160
1985	4,550	49	3
1985	5,500	30	100

source: CBS and Bulog

Indonesian exports of dried cassava have been steadily increasing since 1984 due to increases in domestic production. Indonesia's export quota to the EEC is 525,000 MT or approximately 2.47 MT on fresh root equivalent. Indonesia has been unable to meet it's quota in recent years due to high domestic production and processing costs; unsteady supplies of raw materials and insufficient processing capacity.

Cassava

Year	Production	Imports	Export
1982	12,987	53	na
1983	12,102	64	na
1984	14,205	0	1,050
1985	15,400	0	2,100
1986	16,600	90	2,500

Source : Dept.Agriculture, CBS

Indonesia imported 330,000 metric tons of grain legumes in 1985 and 178,000 tons of soybean meal. Eighteen percent of the imported grain legumes were from the United States with the balance from the PRC. Grain legume increased production will be accomplished by increasing the area planted to grain legumes by 400,000 ha and by raising average yields to over 1 metric to per hectare. Imports of grain legume meal will likely continue in the near term in order to supply the rapidly growing feed industry. The planned grain legume crushing plant is expected to come on line in 1987 with a capacity of approximately 240,000 MT per year, enough to supply near term requirements of the domestic feed industry. Grain Legume production is highly protected in Indonesia. C&F spot prices for PRC imports via Singapore averaged Rp. 200 /kg in September compared to Surabaya retail prices of Rp. 775.

3.5. Grain Legumes

Year	Production	Bean	Imports	Exports
1982			1	
1983			221	
1984	625		401	196
1985	743		330	178

Source: Department of Agriculture, CBS

Indonesia has been a net importer of peanuts since 1982. Peanut imports are controlled by the government are expected

to decline as production is increased. Imported peanuts are used to are used to supply processors and high-value retail sale outlets.

Peanuts

Year	Production	Imports	Exports
	(1,000 MT)		
1984	747	31	2
1985	755	30	3
1986	760	28	3

source : Department of Agriculture, CBS.

3.6. Government Policy Towards Secondary Crops

The general aim of government policy is to achieve self sufficiency in the production of food crops. Within the achievement of self-sufficiency in rice, the government has directed it's attention to secondary food crops. The aim of government policy markers is to reach self-sufficiency in corn and grain legumes (for human consumption) by the end of 1986. This will be achieved through a crash production program for grain legumes and corn. Under this program, farmers are instructed to shift land into grain legumes and corn in accordance with fixed area targets. Marginal rice lands and dryland suitable for secondary crop extensification and intensification has been selected for this program.

The target for 1985 production are as follows:

Commodity	Production 1985	Target 1986	Growth Rate %
1. Rice	26,315	26,867	2.1
2. Corn	4,556	5,993	32.0
3. Cassava	14,073	16,145	15.0
4. Grain Legumes	865	1,298*	50.0
5. Mungbeans	181	261	44.0
6. Peanuts	542	621	14.6

*note this represents an upward revision from the target of 1,003 as included in Repelita IV.
Source: Dir Jen Tanaman Pangan, Kebijakan Operasional Pembangunan Pertanian Subsektor Tanaman Pangan Tahun Anggaran 86/87.

The Bimas palawija credit program was halted in 1985 due to the high and rising level of defaults. A new program, Kredit Usaha Tani was initiated in 1986 and, as a new program, is only active to a very limited degree for palawija crops. Major subsidies are provided by the government for palawija production through the

form of subsidized fertilizer and pesticides. Controlled prices of fertilizer were increased by 25% and the controlled prices of pesticides were increased by an average of 75% in March 1986 although Bulog procurement prices remained unchanged. Although this price increase will reduce the incremental benefit cost ratio from chemical agricultural inputs, Indonesia's prices for these inputs are amongst the lowest in the world. Other assistance is provided to the farm sector through direct provision of lime, seeds and post harvest equipment in selected areas. Program measures concentrate on increasing palawija seed supply, improving extension ratios and demonstrating improved secondary crop technology.

In the preliminary agricultural plans for the 5th Repelita, raising production of palawija crops figures predominantly. The palawija crops are to be developed to reach self-sufficiency, to serve as an import substitute, to provide exports, and to fulfill the needs of processors and feed producers. The primary constraints which need to be overcome are inadequate seed supply, limited supply of new lands, insufficient post harvest equipment, insufficient farmer resources and ability, great price fluctuation and consequent high risk levels. The main efforts of the Agriculture Department will be concentrated on supplying high quality seeds and production packages and promoting integrated production/marketing arrangements to reduce price and market instability. (source: Dir Jen Tanaman Pangan. Pokok-pokok Pemikiran Pembangunan Tanaman Pangan Dalam Repelita V).

IV. Agricultural Extension in Indonesia

4.1. Historical Background

After the war of independence from the Netherlands, the extension facilities and system were mostly destroyed. The offices at the province and kabupaten levels, seed farms (balai benih), experimental farms (kebun percobaan), and the demonstration plots (kebun demonstrasi tetap) were badly damaged.

The Indonesian extension staff were only mid-level personnel from the period before the war. They were the staff of the extension service at the kabupaten level (peminpin dinas kabupaten dan peminpin kawedana dan kecamatan). Their highest level of education was the agricultural high school (Sekolah Pertanian Menegah Atas). In 1945 there were only 12 Indonesians who had university degrees in agriculture and they were immediately promoted to high administrative and policy making-levels in Jakarta.

However, this situation may have been a blessing-in-disguise because now an agricultural extension service could be created from the 'ground-up' by Indonesians, directed by Indonesians and for Indonesians. In the first official meeting (Rapat Kerja) of the Agricultural Service (Dinas Pertanian Rakyat) in Madiun, East Java in 1948 a number of decisions were made which form a basis for agricultural extension in Indonesia until the present time (May 1986). These decisions were the following:

1. To increase the standard of living of the rural villagers there must be education for the these rural people which is integrated and provides appropriate agricultural technology;

2. To provide this public education for the rural villagers it was necessary to have Rural Education Centers (Balai Pendidikan Masyarakat Desa (B.P.M.D.)) in each kecamatan, which would be used by all the government institutions promoting rural development. These centers (B.P.M.D.) have become the Agricultural Extension Institutes (Balai Penyuluhan Pertanian (B.P.P.)) and the Rural Extension Centers (R.E.C.);

3. Agricultural extension is made up of educational efforts for the entire farm family, so that they can improve their own lives. Since this time, the womens' educational program and the young farming people (pemuda tani) have always been an important part of the Indonesian extension program to the present day.

Then, in 1951 there was the formulation of the Special Welfare Plan I (Rencana Kesejahteraan Istimewa Yang Pertama) by the Department of Agriculture which was closely related to agricultural extension in the provinces, and among others was the following:

1. Establishment of the Agricultural Extension Centers (Balai Penyuluhan Pertanian) in each kecamatan. Between 1951 and 1969 approximately 470 Centers were set up through out Indonesia.

2. Establishment of test farms (kebun percobaan) and seed farms (kebun bibit) in many provinces for the provision of new and improved crop varieties to expand food production.

3. Establishment of dry land test farms (kebun percobaan pertanian tanah kering (PPTK)) in each kabupaten for determining the potential of crop production in non-irrigated areas. At the present time this effort to expand dry land crops has once again received national attention, especially the national crash soybeans and the crash corn programs.

In 1958 the Government initiated the rice intensification programs because it was felt that the food supply would not be sufficient and the import of rice would continue. These intensification efforts were applied to various activities. It was to strengthen the extension system with more staff and work materials. Other activities included the creation of programs for rice intensification, the first one was the Padi Sentra (1958-63) Scheme, then the Swa Sembada Beras (1960-62), the Swa Sembada Bahan Makanan (1962 -1970), Bimbingan Masal (Bimas) SSBM from 1964 to the present time.

These integrated programs above provided credit (by the Bank Rakyat Indonesia), extension information (by the Provincial Agricultural Service (Dinas Pertanian Provinsi)), production inputs (by the private suppliers or the cooperatives (Koperasi Unit Desa)), and assistance in milling and storage (by the KUD, farmer groups and private enterprise.

The first Bimas in 1964 was by the students of the Bogor Agricultural University who lived in the villages in Karawang Kabupaten in West Java, helped organize the farmers, arranged for inputs and provided extension advice to the farmers. The yields increased dramatically and thus the Bimas program was born. The next stage came in 1967 when the Government tried the Bimas Gotong Royong program in which private foreign companies (Ciba, Horsct, etc.) provided inputs, even sprayed insecticides from airplanes and helicopters. This Bimas G. R. began in South Sulawesi, then spread across Java, and to areas in Sumatra. It increased production but the Government was soon in a position to carry out the program itself and not rely on foreign expertise and financing.

The next phase of the rice intensification program was developed on a trial basis by Prof. Sudarsono and staff from Gajah Mada University. Their trial program was greatly expanded and spread through the country. It was called Bimas Yang Disempurnakan or the Perfected Bimas. This program was a combination of an input package and extension program. It proved to be very successful and the next phase was when it was felt the farmers could provide the necessary capital on their own for the intensification program.

This new Bimas system which recently has developed into the Sistem Intensifikasi Masal that depends on the farmers to supply their own capital and not receive credit from the Government. Thus, at the present time with these changes there is an opportunity to revise the extension system for supporting development in the Five Year Development Programs (Pelita).

In addition the Bimas coordinating board, which played a significant role at the national level in monitoring and guiding this intensification effort, has taken on more and more responsibilities which at the present time includes the extension agents and inputs for the test plots of the Dinas Pertanian. At each province there is a Bimas office which has a major role in the extension program.

During the 1969 to 1974 period the agricultural extension activities advanced at a rapid rate. Since 1969 the system has had the PPL (Penyuluhan Pertanian Lapangan) who is the extension field worker. These PPL are supported on a daily basis by the Penyuluhan Pertanian Madya (PPM) who are management staff located at the Balai Penyuluhan Pertanian (BPP) or the Agricultural Extension Center at the kecamatan or WKBPP level, and both the PPL and the PPM have technical backstopping by the Penyuluhan Pertanian Spesialis (PPS) who is an expert in specific fields and

stationed at the kabupaten level with the Dinas Pertanian Kabupaten. The PPS are also stationed at the karesidenan/wilayah, and province. At the province level they are at the Pusat Pengembangan Pertanian or Agricultural Development Centers.

Also, during this period of 1969 to 1974 there was the establishment of the Farm Broadcasting (Siaran Pedesaan) by the national radio system (Radio Republik Indonesia) and the regional studios of the RRI. In addition there were other types of materials such as films, newspapers and magazines which were used for agricultural extension. In addition the Agricultural Information Centers (Pusat Inform si Pertanian) were established in each province in order to supply extension materials to the PPL, PPM and the PPS.

During the period from 1970 to 1974 Agricultural Extension, within the Ministry of Agriculture, was conducted by each Directorate General (DG) based on specific commodities, for example, the Directorate General of Food Crops, the Directorate General of Livestock, Directorate General of Fisheries, and the Directorate General of Estate Crops. Several of the Directorate Generals had their own Directorates of Extension, while for the other Directorate Generals, the extension function was performed by their Directorate of Production. This was because there was no structured coordination of extension at the National, Provincial, Kabupaten and Field levels.

In a recent publication by the AAETE the following was described as recently occurring in the Indonesian extension system.A new development occurred in 1974, the Agency for Agricultural Education, Training and Extension (AAETE) was established within the Ministry of Agriculture, based on the Presidential Decree number 45/1974. This Agency's functions, responsibilities and authority of AAETE were stated in the Minister of Agriculture's Decree No. 190/Kpts/Org/5/1975 which transferred the Directorates' responsibilities and authorities in education, training and extension management to AAETE. The purpose of this reorganization was that with Agricultural Education, Training and Extension within the Ministry of Agriculture would be developed through an integrated approach with policy, management and implementation under AAETE. In order to enhance the organization and management of the Ministry of Agriculture, the Minister of Agriculture issued the Decree No: OT.210/706/Kpts/9/1983 on organization and procedure of the Ministry of Agriculture. For education and personnel training, AAETE managed to perform its functions and responsibilities in accordance with the decree after overcoming constraints in the early years. All of the education and most of the training institutes within the Ministry of Agriculture are responsible directly to the Director General of AAETE.

Since it is very important for the Directorates General to have a relationship with the extension units and extension workers in the field, provision was made so that these functions are closely related to the success of the production programs. In the province, agricultural extension is the responsibility of

Provincial Services for Food Crop, Livestock, Fisheries and Estate Crops. Each of these provincial agricultural services is closely related and responsible to the respective Directorates General to carry out agricultural production programs, and to AAETE for the implementation of agricultural extension.

Thus, AAETE has a direct authority over the Agricultural Information Centers in the Provinces for the production of extension materials, and functional authority to the Provincial Agricultural Services for agricultural education, training and extension.

In order to strengthen coordination and integration of agricultural extension, the Minister of Agriculture created the Agricultural Extension Advisory Working Group at national level headed by the Director General of AAETE. And, in the Provinces and Kabupatens, the Agricultural and Extension Coordinating Forums were also set up in each administrative units and the Heads of the four services (Dinas) are members of these forums. The functions of these Agricultural Extension Coordinating Forums, as specified in the Decree of Minister of Agriculture No. 664/Kpts/10/1978, are to coordinate the programs and to evaluate the implementation of Agricultural extension through regular meetings and consultations. Until the present time, most of the Coordinating Forums have not functioned as had been intended. In addition the Rural Extension Centers (REC) have not been used widely by all the Dinas at Kabupaten level because the RECs are controlled by the Food Crops Service and this causes the other Agricultural Service to be somewhat hesitant to use the centers. Thus, to improve the coordination of agricultural extension in conjunction with the progress of agricultural development, the Minister of Agriculture has revised the previous decree issuing the decree No. 482/Kpts/LP.120/7/1985 on agricultural extension coordination activities. It stated that extension should not only be oriented to production, but also to income, population education, and human resource development, especially the rural youth development programs.

Recognizing the need to strengthen and improve the management of agricultural extension at the national level, the Government's reorganization of agriculture, which was based on Presidential Decree No. 24/1983, created a Directorate of Extension in each Directorate General and retained the Bureau of Agricultural Extension in AAETE. The creation of these Directorates of Extension is intended to improve the capacity of the Directorate Generals in providing technical and operational guidance to the extension units in the provinces. Also, the Bureau of Agricultural Extension in AAETE is responsible for the formulation of extension policies and the conduct of studies for improving extension programs and methods. Finally, based on the Minister of Agriculture's Decree No. HK/050/227/Kpts/1/1984, the overall responsibility for coordinating agricultural extension was assigned to the Director General of AAETE. Based on this decree, the management of the National Agricultural Extension Project, which supports the agricultural extension of all subsectors, was transferred from Directorate General of Food

Crops to AAETE on April 16, 1984.

As was mentioned previously the Bimas program took on additional responsibilities. Recently, what occurred was the new reorganization of Bimas Control Body based on the Presidential Decree No. 62/1983. According to this decree, the Bimas Control Body is responsible for coordinating all the supporting services required for agricultural production of not only food crops but all agricultural commodities. In addition the Bimas Secretariats are established at the national, provincial and kabupaten levels. The Bimas Secretariats at all levels would also be assigned the responsibility for administering all the agricultural extension workers and specialists. Bimas Secretariats at all levels are responsible to coordinate agricultural extension programs and activities to fit the needs of specific commodity production programs for the provision of production inputs and credit, new technology development, marketing development and cooperative information.

4.2. Progress of Extension in Indonesia.

The GOI has implemented a number of programs to improve and strengthen the extension activities within the Ministry of Agriculture since the First Five Year Development Plan. These have included improvements such as qualitative aspects for upgrading the extension methodology and developing farmer's mental attitude, through consultation forums; improving native aspects such as increasing the number of extension workers, increasing the number of Rural Centers (BPP), audio visual aids, and transportation.

At the present time there are approximately 18,000 extension workers for Food Crops; 2,100 for Fisheries; 1,600 for Livestock; 6,000 for Estate Crops and about 1,300 Rural Extension Centers.

4.3. Coordination and Control of Extension in 1986.

In order to describe this coordination and control at the present time it was felt that the clearest exposition was in the Terms of Reference for study on extension organization and thus will be quoted in this evaluation.

Effective coordination of agricultural extension would be developed as follow:

a. At the national level through the establishment of agricultural extension committee, chaired by the Director General of Agricultural Education, Training and Extension, which meets regularly.

b. At provincial level, through better performance of the existing agricultural extension coordination forum (FKPP 1), chaired by the Head of the Kanwil.

c. At kabupaten level, through better performance of existing

agricultural extension coordination forum (FKPP 2).

d. At REC level, through better programming, supervision and coordination by Head of REC.

Administrative control, technical control and capacity of REC would be organized and expanded as follows:

a. Administrative control of REC at kabupaten level would eventually be the responsibility of Kandep which would be established within Ministry of Agriculture. Before the establishment of Kandep, Bimas Secretariats would be in charge of executing administrative control of REC.

b. The technical control would be carried out by all Dinas and coordinated by the Forum (FKPP 2).

c. The capacity of REC would be strengthened through the establishment of new RECs in areas where none exists and by increasing the number of PPLs at existing REC. The establishment of new RECs is based on the shortage of RECs to reach farm and fishermen families in diverse farming situations.

Administrative control, technical guidance and development of agricultural extension workers as stated in the Decree of the Ministry of Agriculture No. 143/Kpts/LP. 410/3/1985 would be carried out as follows :

a. Bimas is responsible for recruitment, salary, promotion, social security, discipline and retirement.

b. Directorates General are responsible for need identification technical guidance, work assignment, monitoring, performance development and appraisal.

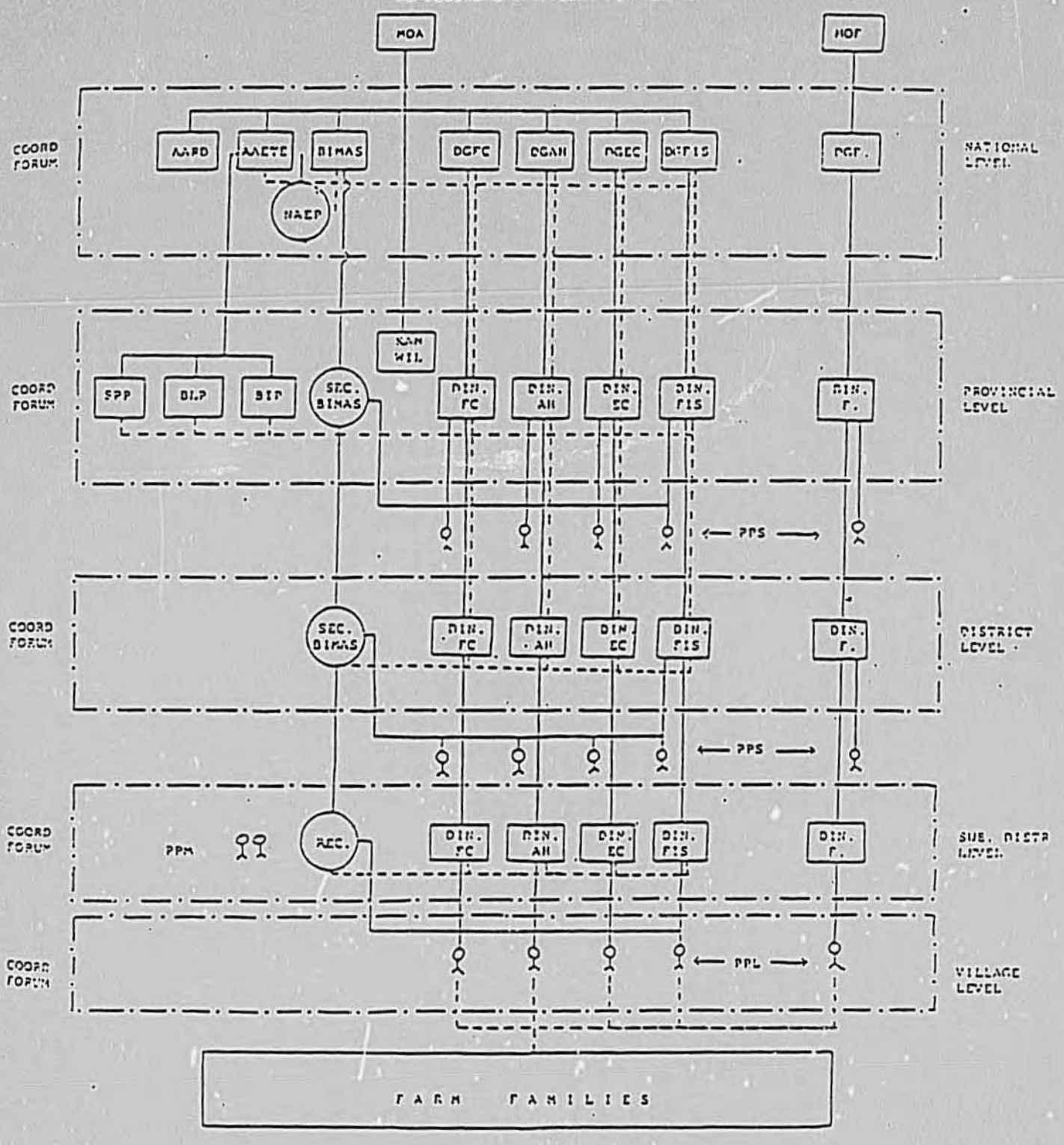
c. AAETE is responsible for setting standards of requirements and performance, developing esprit de crops, continuous flow of information and training.

4.4. Organizational Structure and Flow Chart for Extension

Diagram No. 1 gives the structure of the extension system in Indonesia at the national, provincial, kabupaten (district), kecamatan (sub-district) and village levels. It also shows the lines of command, function links and the coordinating groups at the different levels.

At the national level as shown in the Diagram are the Agency for Agricultural Research and Development (AARD), the Agency for Agricultural Education, Training and Extension, the Bimas Agency, the Directorate Generals of Food Crops, Animal Husbandry, Estate Crops, Fisheries and Forestry in the Ministry of Forestry. As is shown in the diagram all of these organizations and the NAEP are represented in the National Coordinating Forum and the lines of authority are illustrated.

AGRICULTURE EXTENSION FLOW CHART



LEGEND :

- line of command
- functional line
- coordination group
- structural unit
- non structural unit/ Project
- extension worker

NAEP - National Agric Extension Project
MOA - Ministry Of Agriculture
MOF - Ministry Of Forestry
AARD - Agency Of Agricultural Research & Development
AAETE - Agency Of Agricultural Education Training & Extension
BIMAS - Agency Of Bimas
DG - Directorate General
FC - Food Crops
AH - Animal Husbandry
EC - Estate Crops
FIS - Fishery
F - Forestry

KANWIL - Kantor Wilayah Dep. Pertanian
SPP - Sekolah Pertanian Pembangunan
BLP - Balai Latihan Pertanian
BIP - Balai Informasi Pertanian
SEC - Secretariat
DIN - Dinas
PPS - Penyuluh Pertanian Spesialis
PPM - Penyuluh Pertanian Madya
PPL - Penyuluh Pertanian Lapangan
REC - Rural Extension Center

At the provincial level is the Dinas Pertanian (Provincial Agricultural Service) and the Kanwil (Regional Office of Agriculture). In addition to the Sub-Directorates of Food Crops, Animal Husbandry, Estate Crops and Fisheries with direct lines of command from the Directorate Generals there are also the agricultural high schools, training centers and information centers. These are encompassed in the Coordinating Forum at the provincial level. Then, at the kabupaten level are the Bimas Agency coordinating the extension staff and the other officials from the line agencies. At the sub-district (kecamatan) level are the Rural Extension Centers and the other organizations as shown in the diagram with a Coordinating Forum. It also shows the locations of the PPL (field extension workers), the PPM (management extension workers) and the PPS (extension specialists).

4.5. Second and Third Agricultural Extension Projects

The World Bank's assistance to the extension services in Indonesia began with extension components in irrigation projects. The training and visit system was introduced into these projects at that time. Then, in 1976 the World Bank approved the National Food Crop Extension Project under the Directorate General of Food Crops Agriculture which was initially in nine provinces and then expanded to an additional four provinces. The establishment of the Rural Extension Centers was a basic part of this project as was the creation of the PPMs and provision of additional PPSs.

Based on the results of this project, the World Bank approved the Second National Agricultural Extension Project in 1980. In 1984 the NAEP II was transferred to AAETE from the DGFCA. The formulation and preparation of this proposed third NAEP has come out of the experiences of the NAEP II. In all of three of these projects there has been very limited use of technical assistance and limited work on specific extension issues in carefully defined areas for developing and improving the extension approaches to the farmers.

V. The Secondary Food Crops Development Project

5.1. Background

The Secondary Food Crops Development Project (SCDP) project was initiated in May 1983, with AID loan funding of $6.4. million and GOI funding of $6.3 million. In August, 1985, $1.0 million of grant funding was added to the project to support food policy studies, technical assistance and training. The project is a pilot effort which introduces and refines production and marketing of secondary crops in three project sites representing various agronomic and socio economic conditions in Indonesia. It has four components:

a) crop trials and demonstrations to test replicable cropping systems that can provide an empirical basis for the formulation of policies on prices, [illegible]

production, consumption and market development;

b) the introduction of improvements in the quality, storeability, and market acceptance of secondary crops;

c) promotion of appropriate and tested production technologies using improved varieties, commercial inputs (fertilizers, seeds, inoculm, pesticides), improved agronomic practices and site-specific cropping systems;

d) the identification of changes in extension and marketing to maximize the contribution of secondary crops to improved nutrition.

An important project element is the development of a planning and project implementation system which allocates increasing responsibilities to provincial and kabupaten agriculture staff to identify priority specific problems constraining production, to plan research activities to test technical solutions to these pressing problems, and to establish on-farm trials and demonstration plots to determine farm level acceptance of these new technologies. This requires improved coordination between provincial extension services and regional research institutes in the design, implementation and analysis of project supported field testing and the subsequent transfer of new technology to the intended beneficiaries.

A related complementary activity to be funded under the present Secondary Food Crops Project will consist of food policy research. This research, scheduled to commence in June, 1986, will assist in linking the project's ongoing field activities to macro-level policies of the GOI. The overall study will focus on the impact of price, technology, and macro-economic policies on rural incomes and employment. To provide the necessary national level of support for this study, the deputy head of the National Planning Agency (BAPPENAS) will chair a national food policy committee with participation from senior level representatives from the Ministries of Agriculture, Finance, Trade and BULOG (the National Logistics Bureau).

Senior U.S. policy analysts will assist in developing the research agenda and implementation of this research. For the first time a national level body of senior officials will collaborate on a study of this scope.

5.2 Project Status

After two and half years of field implementation, baseline studies for each project area have been completed, 110 (five hectare) demonstration plots over five cropping seasons have taken place; and an in-depth marketing assessment is being conducted in the three project provinces for marketing and post-harvest interventions. In addition, adaptive field trials of improved seed varieties have been carried out over the past three cropping seasons.

The project's strategy for promoting the adoption of palawija commodities through intensively cultivated, supervised demonstration farms has had mixed success. In East Java, the results to date have been excellent where a well functioning extension system and long established input and output markets exist. For East Java, the need is for fine-tuning of the dem-farm package and a sound strategy for expanding the project area.

The other project sites in the provinces of Lampung (Sumatra) and South Sulawesi face more basic obstacles to the technology testing and dissemination process. In South Sulawesi, the cooperation between the regional Food Crops research institute and provincial extension services in implementing project sponsored on-farm trials and demonstrations appears to function well in a limited number of sites. However, the lack of sufficient extension staff and infrastructure dictate a need for more innovative communication and extension mechanisms, which are less reliant on fully staffed extension services. Some initial work has been carried out on radio communication for a marketing information system to farmers. As in East Java, the Ministry of Agriculture (MOA) is keen to incorporate lessons learned to date on pilot project sites and to extend project activities to additional project areas within this province.

In Lampung, there are similar problems as in S. Sulawesi regarding the coverage of less-populated cultivable areas with inadequate extension staff. For Lampung, an extension/field trial strategy must be adapted and implemented which differs from the more intensely cultivated and densely populated island of Java.

Certain elements of the demonstration package appear to be of dubious economic importance. Certainly, the post harvest demonstration strategy and packet of technology requires adjustment and greater input from users and provincial staff. Issues regarding the appropriate subsidy levels for participating farmer groups requires more in-depth analysis followed by more systematic decision making for future planning and budgeting for cropping inputs for the dem-farms and on-farm trials.

Marketing assessments : A four phase marketing study is being carried out in each of three provinces. The objective is to determine the primary constraints to more efficient marketing which will provide better incentives to producers and a more stable, higher quality supply of commodities to consumers. It is projected that the major analysis and written recommendations will be completed by late 1986. The last phase will include the testing of recommended interventions in the provinces post-harvest or marketing systems and the promotion of policy changes based on the analyses.

The office of the Directorate General of food Crops, the Directorate of production and USAID are interested in making adjustments in the overall management of the project. During the

initial 2 1/2 years of project implementation, the planing and budget management processes within the project have delayed field implementation of activities. There is agreement structure and improved coordination and efficiency in delivering resources to the field and documentation processes for reimbursement.

5.3 Programs: Past, Present and Still Planned

In order to have an idea of what either has occurred, is occurring or is planned will show the extent of the planned SCDP. The following was taken from project information and does not reflect what has actually happened, rather what was planned to be carried out. In a following section what has actually occurred will be discussed. Thus, the plan was the following:

A. Production inputs to increase yields include fertilizer, lime, seeds, pesticides, rhyzobium inoculum, small tillage equipment and draft animals for lampung and Bone.

B. Marketing inputs include drying sheds, simple mechanical dryers, storage facilities, and simple harvesting and processing equipment

C. Proper application of the inputs will be accompanied by field level instruction and demonstration conducted by six Field Teams, each consisting of a Cropping Systems Agronomist, Marketing and Post Harvest Specialist and an Agricultural Economist working with the regular extension workers (PPS, PPM, PPL) on project sites.

D. In the demonstration areas consisting of 180 farms of 5 hectare units the Field Teams will encourage the farmers to adopt appropriate cropping systems, assist in procuring inputs, and teach farmers recommended agronomic and post harvest management practices.

E. In intensification areas they will assist farmers and KUDs develop farm plans and investment plans respectively as a basis for obtaining supervised credit.

F. In both demonstration and intensification areas, they will also encourage KUD/PUSKUD/INKUD and private dealers to procure secondary crops on a regular and contractual basis by offering attractive prices for products of superior quality.

G. Data for agro-economic research on cropping systems, costs and returns, production functions, fertilizer yield response, and variety trials will be obtained from demonstration farms.

H. Research on post harvest operations will be done at the BULOG Research and Training Center and cooperating KUD/DOLOG/BULOG facilities.

I. Demonstration on post harvest at farm level will be done in cooperation with KUD.

J. Cropping systems research will be done in areas of potential expansion.

K. Special studies relating to pricing, subsidies, import and export, market development, baseline and evaluation surveys will be done by Indonesian or U.S. institutions.

L. Specific topics will be developed by the technical assistance team in cooperation with the Indonesian counterparts.

M. A market basket type study will be included in the baseline survey to establish the present consumption and nutritional status of beneficiaries and establish a basis from which nutritional interventions can be formulated as the need arises.

N. All training will be short term designed to provide specific management and technical skills.

O. Three months training on production and marketing and post harvest operations will be given to the Field Teams in Jakarta before they are posted to the project sites. Organized by AAETE, support of AARD, DGFC and BULOG.

P. Two weeks training in production and post harvest management will be given to contact farmers and KUD staff as well as private dealers on project sites. This will be organized by the Field Teams with the support of the provincial and kabupaten extension services.

Q. Above activities under administration of Directorate of Food Crops Production Development, DGFC. A Palawija Project Office will be created to administer the project. PPO will be assisted by technical advisors consisting of Agricultural Economist/Marketing Specialist, Cropping Systems Agronomists and a Post Harvest Specialist. These experts will have counterparts from DGFC and will provide managerial, administrative and technical backstop services to the Field Teams.

R. Operational support services to the project will be accomplished through contractual arrangement:
   1. DGFC contract with CRIFC for research on cropping systems.
   2. AAETE and technical support from CRIFC, IPB DGFC and BULOG to organize production, marketing and post harvest training for the Field Teams.
   3. BRI provide supervised credit to farmers in intensification areas.
   4. GAMA or others will supply rhyzobium inoculum.
   5. Selected universities in South Sulawesi, Java and

Lampung will conduct the baseline, evaluation and monitoring studies.

6. Studies on agricultural and food policies, pricing, subsidies, market development, export and import will be contracted to local or US universities.
7. Provide limited assistance in the establishment of Food Policy Library as a principal repository of research materials for food policy studies.

S. A policy research component will link the project's ongoing activities to macro level price and monetary policy. Approximately $500,000 of the grant funds will be utilized for this policy research. It will:

1. explore and quantify the production and consumption relationships between rice, maize, cassava, soybeans and peanuts;
2. identify the regional comparative advantage associated with each commodity;
3. determine changes in production, consumption (both animal and human), employment and domestic processing that would result from changes in exchange rate policies, subsidies and price supports;
4. explore the impact of these changes on regional and international marketing and trade.

T. Policy research activities will result in a number of policy publications which will be utilized by GOI agencies responsible for policy affecting secondary crop production and consumption.

U. The policy research agenda and its implementation will be coordinated by a national food policy committee, anticipated to be chaired by a senior analyst from BAPPENAS with participation from Ministries of Ag., Finance, Trade and BULOG. Senior U.S. policy analysts are expected to assist in agenda development and implementation. Indonesian economists and analysts will participate in substantial parts of this work.

V. Project will be represented in the BIMAS coordinating committee at the national level by the Director of Food Crops Production Development.

W. The Project will be represented in the kabupaten BIMAS coordinating committee by the Kepala Dinas.

X. A steering committee will be created consisting of the Director, Directorate of Food Crops Production Development as Chairman; Director, Research and Development, BULOG; Dir Gen of Cooperative Business Development and other members of the Government.

VI. <u>Cropping Systems Research by the AARD Research Institutes for Food Crops</u>

6.1. Introduction

One of the components of the SCDP project is the Cropping System Research which has been and will be conducted by the AARD Research Institutes For Food Crops.
In relation to the goal of SCDP, the cropping system's research has the following objectives :

1. To test and to obtain an appropriate palawija cropping system which will be suitable for the regional agroclimatic and agroeconomic conditions for its development;

2. To increase both palawija production and farm income and to enlarge labor opportunity through the increase of palawija cropping intensities;

3. To study and identify obstacles in cropping system technology application by farmers which forms an input for extension workers and farmers to support palawija development

4. To stabilize the channel of technology transfer among researchers, extension workers and farmers

5. To extend the results of the cropping systems research to the dem-farms.

Along with the dem-farms, cropping system experiments will be conducted in the areas of potential expansion. They however have to be located in other sites than the dem-farms. Like the dem-farms, cropping system experiments will be conducted on dry land areas and in rain-fed rice fields.

Cropping system research has the following activities :

1. Cropping system per se

2. Super imposed treatments

3. Component technology

6.2. Research Activities

Research activities started in the budget year 1984/1985, thus one year later than the dem-farms. Three kabupatens were chosen for the first phase of the project. These are North Lampung, Lampung; Bone, South Sulawesi; and Ponorogo, East Java. Three Research Institutes are in charge of the SCDP research activities; The BALITAN Bogor for research in North Lampung, the BALITAN Malang for research in Ponorogo, and the BALITAN Maros for research in Bone.

Research programs are formulated by the " Team Pusat " which is made up of the Cropping system staff of the BALITAN Bogor, the PPO and others in charge for production and extension from the

Directorates of the DG for Food Crops, in consultation with the BALITAN Maros and the BALITAN Malang. The layout and treatments of the experiments are based on the result of cropping system research conducted prior to SCDP. Therefore the pattern or the " pola " may be similar, however, the crops grown sequentially whether as single or as mixed crop may vary from kabupaten to kabupaten. The following are the treatments :

1. Pattern A : pola petani
2. Pattern B : improved pola petani
3. Pattern C : Introduced pola I which can be classified in C1 and C2 depending on kind of crops involved
4. Pattern D : introduced pola II which also can be classified in D1 and D2

Super imposed treatments consist of varieties released by the Research Institutes. These varieties are inserted in cropping system experiments. Component technology experiments are similar to agronomic experiments, aiming to identify problems which might be encountered and at the same time to possibly increase the productivity. Component technology experiments are also using released varieties.

As applied research, the SCDP cropping system research is complementary to that conducted by the research institutes in the region concerned in the sense that duplication of activities can be avoided. In addition the participation of PPS and PPL in the experiments helps extend the results to the dem-farms and farmers groups as well .

In North Lampung the research was only conducted for one cycle (1984/1985). The research staff at the BALITAN Bogor felt that the cropping system itself had already been determined in North Lampung and only needs to have an expansion of its area. The research should now put emphasis on agronomic type of experiments.

In Bone and Ponorogo the whole set of cropping system experiments are still being conducted which are for the second year .

6.3. Implementation

A working group has been formed in order to effectively monitor the research activities. This group consists of cropping system staff of the BALITAN Bogor, the PPO and staff in charge of testing activities.

It is the therefore expected that the monitoring will be consistent in terms of time and personnel and that confusion can be avoided.

Funding of this research is implemented through a contract arrangement between the project manager in the Directorate of Food Crops Production in Jakarta and the Director of the Central Research Institute for Food Crops (CRIFC) in the first year (1984/1985) and the Director of the BALITAN Bogor in the

second year (1985/1986). It is expected that the funding will be on time for the effectiveness and success of the research. Late funding may result in late execution and even failure of the experiments. For this reason timely funding is important and needs special attention.

The ongoing research activities are based on the past research work with the emphasis of using promising crops. Provisional results can only be provided from the experiments conducted in 1984/1985, for those of 1985/1986 are still under way.

In Lampung utara, WKBPP (Extension Working Area) Blambangan Umpu and Sungkai Utara both are upland, pola D II with two times mixed crops of corn and food legumes which gave higher incomes. The income varied with crop combination. In these experiments it appeared that peanut could give higher income as compared to other crops involved in the pola.

From super imposed treatments it appeared that C - 22 for upland rice, Wilis for soybean, Pelanduk for peanut and VC 78146 for mungbean gave relatively higher yield as compared to other varieties of the same species involved in the experiments.

Component technology experiments have shown the following:

- Pioneer (hybrid corn) gave higher yield per unit area as well as per unit area per day compared to Arjuna;

- Concerning grain legumes it appeared that the yield of varieties tested was related to population densities;

- Orba gave the highest yield at 333,000 plants/ha;

- Galunggung at 571,000 plants/ha; and

- Wilis at 428,600 plants/ha

The yields are 1.78 tons for ORBA; 1.93 ton for Galunggung and 1.74 tons for Wilis.

In Bone the following provisional results are as follows:

a. <u>Cropping system</u> : On upland area as well as in rain-fed sawah fields it appeared that the introduced pola was superior to both of " pola tani " and "improved pola tani. The higher net income of the introduced pola is attributed to the intensive use of land.

b. <u>Component technology</u>: Experiments have shown that fertilizer NPK gave quadruple yields of peanut as compared to that of unfertilized plots (1.2 t against 0.3 t/Ha). By addition of lime the yield increased to 1.7 t/Ha with 0.2 t/Ha of lime and up to 2.0 t/Ha with 2t/Ha of lime.

In other experiment it also appeared that the

yield of peanut increased with population density up to 500000 plants/Ha. Higher fertilizer application with the above density could still raise the yield. The yield increment however was unbalanced with the additional input.

In Ponorogo the provisional results are the following:

a. Cropping systems: In upland areas, improved pola tani, as well as introduced pola II (D1 and D2) can rightly be practiced. The introduced pola II could be properly recommended, for they have higher net B/C, R/C ratios, the returns to the inputs as well as to labor. In rain fed rice field, even though the pola A, B, C2 and D can be practiced, however pola B could be properly recommended as it has a higher net B/C ratio.

It is worth mentioning that the results obtained from rainfed rice field were only that of the second season because the gogo ranca in the first season failed to grow and in the third season it was too dry to grow the crop . The analysis was primarily done on grain legume with the addition of corn, sweet potatoes and mungbean related to the pola.

From the superimposed treatments it could be mentioned that:

a. In upland areas, Sentani (upland rice), pool 4 (hybrid corn) yield higher than other varieties of the species concerned,included in the experiment in the wet season.

b. In rainfed rice fields, the peanut variety Pelanduk gave higher yield as compared to those included in the experiment in the wet season. It also should be mentioned that the dry season experiment for peanut, soybean, mungbean and corn on upland as well as in rain-fed fields generally gave lower yields than expected.

c. Component technology experiments. The dry season experiments in rain-fed rice field and the wet season experiments on upland area could be recorded as follows.

   - Soybean yield in rain-fed rice field in the dry season was as high as 0.9 t/Ha. with the density of 571000 plants/Ha.

   - Corn variety Arjuna on upland area in the wet season 1984/1985, yielded as high as 4.1 t/Ha. with N.P.K of 90; 67.5; and 22.5 kg/Ha.

   It should also be mentioned that the yields of the crops in cropping system plots, superimposed treatments as well as in the component technology experiments especially for food legumes were lower than expected. It still requires proper crop

management, and a determination of the obstacles related to it. Nevertheless some of these cropping system (patterns) will be useful for the extension personnel to transfer to the farmers.

6.4. Optimum Input Level

The BALITAN Maros and Malang have analyzed the input and output of each pola in the cropping system with the B/C ratio, MCI and CII at BALITAN Maros, and net B/C, RC ratios, the values of "pengembalian saprodi" (return to inputs) and "pengembalian tenaga kerja" (return to labor) at BALITAN Malang.

6.5. Utilization of the Results

The on going dem-farm activities are primarily based on the results of the experiments conducted by the research institute prior to SCDP. This means that various types of research had been conducted by the research institute, and cropping systems was one of those types. Some of the pola of the on-going experiments could properly be recommended, while that of North Lampung has already been adopted. In this connection participation of PPS and PPL needs to be encouraged. For that reason the BALITAN Maros has established a team of PPS and PPL in addition to the research team from the BALITAN.

The BALITAN Malang has 3 staff from the research institute at the location of the experiment. They are working in cooperation with the PPS and PPL at the location. In addition to that the experiments are being handled by specific staff of the existing research discipline at the BALITAN .

In principle conducting research in the WKPP's outside those having dem-farms could provide advice for the extension personnel to extend the results to the existing dem-farms as well as to the new dem-farms.

6.6. Constraints

Several constraints have been encountered in conducting the experiments. In addition to the funding which is not on time, other constraints which are technical may be recorded as the followings.

1. The variety of soil fertility levels;
2. Pests and diseases;
3. Varietal adaptability;
4. Weed infestation.

6.7. Results and Impact

Provisional results achieved through the first cycle of the

"pola" have been mentioned above. These can be utilized for the dem-farms. To effectively utilize the result, a good communications are necessary and this is being improved through the formation of the local teams consisting of the PPS and PPL.

One important thing worth noting is that a number of farmers have paid serious attention to the experiments because they like their land to be used for the experiments after having observed the productivity of the trials.

6.8. Physical and Final Implementation by April 1.1986

The BALITAN Maros and the BALITAN Malang still have ongoing experiments, while the funds have only been received once.Malang even has already harvested the second planting, while Maros has complained that they cannot monitor the experiment properly because of a lack of promised funds.

They have not yet been informed about the 1986/87 budget. The team suggested they should make a proposal to Bogor/Jakarta for further experiments rather than waiting for the information from the center team.

6.9. Project Plans for the 1986/1987 Year

It is likely that the researchers will put more emphasis on agronomic experiments in addition to cropping system per se, This is attributed to the production constraints encountered in the trails in the farmers' fields.

The BALITAN Malang is planning to confirm the ongoing cropping system with the emphasis on component technology such as pests and diseases, plant density, soil fertility and micro element on upland as well as in the rain-fed rice fields. Concerning the rain-fed rice fields it is now likely to be suitable for growing third crops or even fourth crops by changing with short duration crops with the availability of "water pumps" owned by farmers. The method of field irrigation through these pumps is called "pengairan terbatas" (limited irrigation).

The BALITAN Maros will likely have the following activites :

WKBPP Selli

1. Doses NPKS/micro element on soybean;

2. Insect monitoring by using pesticides on soybean, peanut and mungbean;

3. Disease monitoring on soybean;

4. Fertilizer on Corn and legumes inter-crop;

5. Plant population on soybean.

WK BPP Palattae :

1. Fertilizer on corn and legumes mixed cropping.

WK BPP Binatani

1. Fertilizer doses on sawah rice - corn + soybean;

2. Fertilizer and Corn intercropped with legumes

The Maros researchers felt that the research in Bone should be intensified. The results of the work in Bone is expected to be extrapolated to kabupaten Wajo, Sidrap and Sinjai. It is also very important to continue this type of research, for South Sulawesi has a very large unplanted area, while this province is a big exporter of livestock.

The BALITAN Bogor is likely to have the following experiments.

1. Efficient fertilizer application in the cropping system;

2. Pests and disease management in the cropping system;

3. Increase and stabilize the yield of palawija;

6.10. Responsibility for the Research and Communication.

The BALITANs are responsible for the research activities. In order to supervise the trails the PPS and PPL carry out daily supervision with or without the research staff. The communication among the researchers, the PPS, PPL and the Kepala Dinas Kabupaten where the experiments are located is good. The communication does not only happen in the rapat bulanan (monthly meeting) but also in field day occasion. The aim of the SCDP however is to certain extent, as quick as possible, to disseminate the research results. For that reason stronger and closer cooperation in managing the crop and supervising the experiment are expected.

6.11. Conclusions and Recommendations

1. Cropping system research of SCDP started in 1984/1985 year. Except in North Lampung, the research in Bone and Ponorogo is still under way for the second year.

2. The nature of the experiments only enables us to draw conclusion after one cropping cycle period if it is considered in relation to cropping intensities per unit area per year. Results of the first cycle suggested that some of the introduced pola (patterns) could be introduced to the farmers, not withstanding the fact that the yield of some crops grown in the system was low.

3. The low yield of those crops might be attributed partly to unsuitable season and other technical problems which need research attention, but also to improper crop management.

4. Related to the problems encountered, it appears a good approach to put emphasis on agronomic type of research rather than solely on cropping-systems research. This is understandable because technically this cropping system research has a dual purpose, which are to provide improved patterns for the farmers and to introduce the patterns to new areas of expansion, and to confirm the pola as well as to increase the yield of the crops grown within the system (pola).

5. Implementation of the research does not only need inputs but also needs timely funding, which appears very important for the success of the experiment.

6. As the research should provide technology transfer to extension personnels and farmers, the result should not only show significant differences among treatments, but the yield of the crops included should also be attractive to the farmers. Therefore good supervision, crop management and consistent monitoring are to be carried out at the research sites.

7. Cropping system research seems to form one package so that superimposed treatments which are similar to varietal experiments, and component technology which is similar to "agronomic type" of experiments, are hard to be separated, probably in the budget system. It is applied research and related to dem-farm development. Therefore, it is important to change the name to applied farm research, which consist of cropping system experiments and agronomic types of experiment such as variety and fertilizer trials.

8. For the ongoing project it is recommendable to have:

    a. Cropping system experiment
    b. Pest control experiment/monitoring
    c. Fertilizer experiment
    d. Varietal experiment

9. Cropping system and pest control experiments should be located in WKBPP which will be used for the coming dem-farms, while fertilizer experiments will be located in the WKBPP for the new dem-farms and in the WKBPP with the dem-farms adjacent to the dem-farms. Varietal experiment should also be located in WKBPP for the new dem-farms. Plant population density should be in the varietal experiments.

10. Concerning the number of sites the following may be possible for each Kabupaten which would have:

    a. Cropping system experiments; 2 WKBPP a' 4 sites each year.

b. Insect control/monitoring : 2 WKBPP a' 4 sites each year at the same site as a).

c. Varietal experiments : 2 WK BPP a' 4 sites each year, the same site as a) with 3 kind of crops (corn,soybean and peanut), 3 population densities, two varieties, 20 m2 plotsize for soybean, 24 m2 plot size for corn.

d. Fertilizer experiments; 12 treatment, 3 replications, with 3 kind of crops (corn, soybean, peanut) plotsize as in c): 2 WK BPP a' 4 sites, the same as a) and 2 WK BPP 3 sites adjacent to dem-farm. This type of experiment can be called an adjacent dem-farm experiment (See figure).

11. Adjacent to these dem - farms there should be a "saung meeting place " or an exchange of information among researchers and extension staff, who are included in the supervision team, and the contact farmers.

12. Experiments in points a,b,c and a part of d are as " precursor " for dem - farm development. For that reason PPS and PPL should also be members of the supervision team in these experiments.

13. The applied farm research should also be managed by CRIFC and not the BALITAN Bogor in order to more equitably manage the funds.

14. The budgets for research plots should cover primarily the actual costs of the research and not include large amounts for travel between islands and some of the other non essential expenses.

15. As to the incentive for personnels involved in the applied farm research, there should be a budget item to the BALITAN to pay the PPL / PPS fee for the service.

16. The BALITAN Maros should be in charge of the applied farm research in South Sulawesi. The BALITAN Malang should be in charge of the applied farm research in East Java. The BALITAN Bogor should cooperate with BPT and the Substation of BALITAN Sukarami in the applied farm research in Lampung.

17. The research carried out by Food Crops Research Institutes in relation to this SCDP should be applied farm research and not just cropping system research. This would promote more work on component technology, intermediate technology, pest management, studies of costs, returns and economic levels of input use.

18. The Agricultural Economics Departments of the BALITANs should be more deeply involved in the research

on the experimental plots. They should initiate farm management analysis to determine the optimum farming systems and the potential returns to the farmers.

19. In mixed cropping trials, attention has to be given so that the primary crop constitutes a greater part of it.

20. Grain legumes and corn have to become the first priority crops in the cropping system, in accordance with Government policy.

21. Concerning grain legumes, attention has to be given to seed production in the dem-farm, while for corn emphasis has to be put on dry season corn in order to overcome the shortfall of production during this season which results in the importation of this commodity.

    Dry season corn is grown in the sawah which is harvested in July-August, and only covers 20% of the corn area in the country.

VII. Transfer of Technology

The second major component of the Secondary Food Crops Development Project is the transfer of technology from the cropping systems research to the farmers. This is primarily done by using the dem-farms which are run by the Agricultural Services (Dinas Pertanian Provinsi) in each province. These dem-farms supported by the SCDP are located in the already mentioned three kabupatens.

7.1. Lampung Province Dem-Farms.

The team has visited 5 demfarms in the North Lampung Kabupaten, of which two are located in WKBPP (Extension Work Area) Abung Timur and three are located in WKBPP Bahuga. Those dem-farms were set up each year in 983/1984;1984/1985 and 1985/1986. Following the field extension workers' advise only 10 farmers could participate in the 5 Ha dem-farms.

Based on general extension policy, one field extension worker (PPL) could only manage one dem-farm to still give him the opportunity to control his 10 to 15 extension areas (WILKEL).

7.2 The Location of the Dem-Farms in Lampung.

The provincial Working Group made a comprehensive questionnaire including questions on soil fertility, cropping patterns and agronomy, on farmers' group and its role in adoption of new technology for pre and post harvest, on the potential of the farmers' groups to manage the group's economic activities, and on the possible supporting factors to the project. This questionnaire was used by PPM and PPL to nominate the plots. Based on the score and checking on the spot, the sites were then approved by the working group, and a "surat keputusan" of the Kepala Dinas (head, Agricultural Service) could be issued.

The dem-farms are mostly located on village roadsides, in the middle of palawija area. A sign board is placed on each dem-farm which clearly shows data of the farmers group, the cropping pattern and the input treatment.

It is quite difficult to select a plot of 5 Ha managed by 10 - 20 farmers because of large land ownership (more than 2 Ha). Adjustment has been made by exchanging the land to be cultivated by another group's members, until at least 10 farmers are associated in the dem-farm. Such cases occur especially in the transmigration areas.

The recommended cropping patterns in North Lampung are based on the results of trials in 1983/1984 in the upland areas. On the dem-farms visited by the team, they will be converted to irrigated fields within the next 2-3 years. There is some doubt about adjusting the cropping pattern to the new condition.

The Dinas Pertanian Lampung has given priority to transmigration areas for expanding secondary crops cultivation through multiple cropping.It is still questioned what is the most useful recommendation and package of technology that should be used in the dem-farms, especially those in the target areas.

The WKBPP and the number of dem-farms in each one are the following:

WKBPP	1983/1984	1984/1985	1985/1986
1. Abung Timur	3	4	
2. Banjit	2	1	
3. Tl. Bawang Tengah	1	3	3
4. Bahuga		4	9
5. Blamb. Umpu			4
6. Sungkai Utara			4

7.3 <u>The Farmer Groups in Lampung</u>.

The selected dem-farms are lead by the head of the dem-farm's group, and they are also the chairmen of the farmer groups. The PPL in charge already had lose contact with the head since he has been selected as the "contact farmer" for some years before the project. There is a case of a double function for the contact farmers, or even triple. They are also members of the KUD committee and or member of the village government.

The contact farmer is experienced in conducting trials and demonstration plots under supervision of the PPL. Some have conducted demonstrations in cooperation with private companies. Those exercises make contact farmers familiar with and able to apply the new technologies. The significant difference between the crops grown inside and outside of the dem-farms is dependent on the leadership of the contact farmer.

The members of the farmer groups have cooperated in land preparation, planting, pest control and harvesting. This is shown by the good condition of the standing crop, the same height, the same color and the same age. After almost three years (dem-farms of 1983/1984), most of the members of the bigger group still do not copy the practices of the dem-farm.

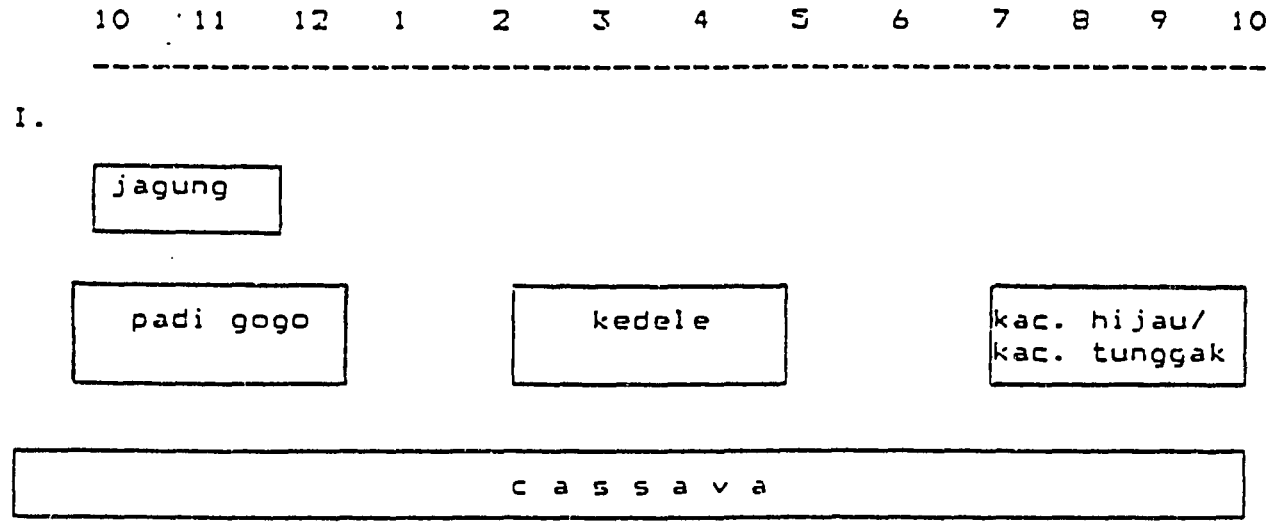
7.4 The Demonstration Farms in Lampung

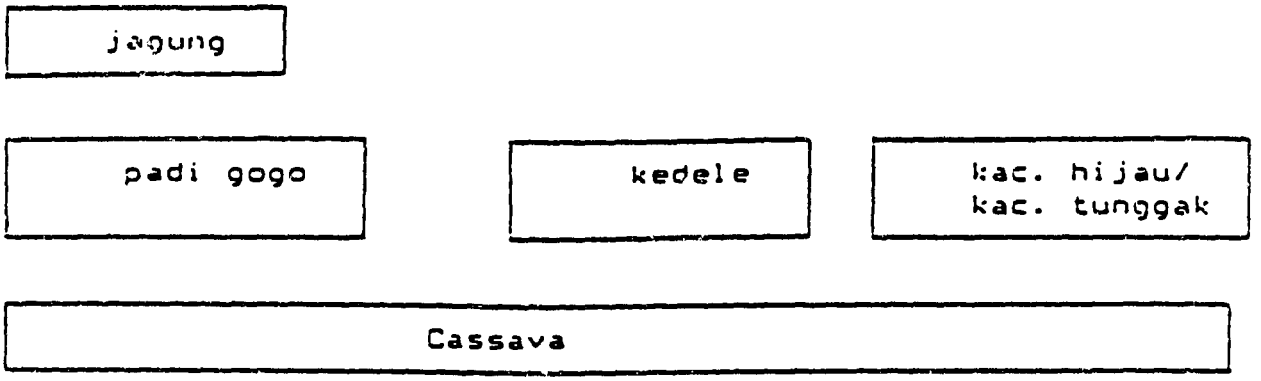
All demfarms are located in upland areas where multiple cropping system were practiced before the project. It is mostly inter-cropping and "tumpang gilir", which includes paddy rice. Palawija crop such as corn and cassava is partly used for food, and partly sold. While grain legumes, peanuts and mungbean are commercial crops.

Recommendations on new cropping systems which give priority to palawija are easily adopted. Introduction of better land preparation plus liming, planting in rows instead of broadcasting, and use of new varieties, are at the beginning considered more time consuming. On the other hand, members of the group work together under the leadership of the chairman. This is one of the goals of the dem-farm approach.

Almost all of the dem-farms visited by the team had good farms. One dem-farm had to switch from grain legumes to peanuts to avoid a virus disease. Another dem-farm once did not succeed with grain legumes because of late planting and lack of rain. All contact farmers and members met during the visit of the team reported that they had to be careful with the planting time to avoid crop failures.

The recommended cropping systems are as follows:





The dem-farms are an accepted and successful extension system in Indonesia as was seen by the team members. They also have a definite demonstration effect on the surrounding farmers. The new cropping system and technology are firstly adopted by other members of the farmer group in the dem-farm.

Cassava growing has been reduced since the price has declined during the last couple of years. The current village price for cassava root is Rp. 75.-/kg. This is shown by the reduction of cassava rows in the dem-farms. Grain legumes (kedele) is at the moment more attractive because the price is Rp. 500.-/kg. This high price supports and encourages the adoption of the new cropping system.

In the case of Lampung there has been only one year (1984/1985) of research carried out by the Balitán. The results of the FAO trials are not used since these trials were not conducted in North Lampung. The recommendation for fertilizer is based on the Agricultural Services (Dinas Pertanian) own trials conducted by the BPJ Provincial Institute For Trials.

Liming and inoculum are new inputs for these farmers. The dem-farms in the fiscal years of 1983/1984 and 1984/1985 already succeeded with grain legume production increase (crop cutting of 1,2 ton/Ha). Only liming is considered too expensive (3-5ton/Ha) of an input especially by the farmers outside the SCDP project.

7.5 <u>The Revolving Fund Concept and Management</u>.

The PPL, PPM and PPS at the dem-farms arranged extensive meetings with every farmers group to explain how to manage the SCDP's inputs and equipments. There are two members appointed, a secretary and a treasurer, to do the administration and book keeping for the dem-farm.

A dem-farm which already has succeeded and its produce has been sold, starts to collect money from it's members equivalent to the price of inputs and an additional amount. This additional sum is called savings, although it will be directly borrowed by the same farmers in the group to buy inputs for the next crop. It is planned that other farmers of the bigger group could make use of these savings.

There is no problem on seed supply because farmers can make their own seed with the supervision of the PPL and PPM or the farmers can buy from local dealers. The organized seed flow by the Agricultural Service (Dinas Pertanian) is an exchange between grain legume areas which is caused by the short life span of this seed. The price is quite reasonable. The increased price of pesticides and fertilizer may cause adjustments of the dosage if farmers can not buy the additional amount from their own money. This may cause the other neighboring farmers not to copy the recommended practices.

One of the contact farmers met during the visit suggested that he plans to charge for the use of the post harvest equipment. The drying sheet seems to be the most useful because it is easy to move, while a drying floor is expensive to build and inefficient for personal use.

The financial administration of the dem-farm is done by a treasurer. He is regularly assisted by the PPL, since this activity is new for the farmer groups.

7.6. Supporting Factors and Agencies in Lampung.

Chemical inputs and seeds are available in the villages, which are sold by local dealers, permanent shops or mobile traders. PT PERTANI for fertilizer and Sanghiang Seri for seeds are well known among the farmers.

The number of BRI (National People's Bank) in North Lampung still can not cover the whole Kabupaten. Some branches of the Post Office especially in transmigration areas can assist farmers for savings through TABANAS which is a postal savings association.

Many buyers come to the village market in the production areas such as in Bahuga. This is most helpful, but farmers should be well informed about the prices. Small trucks of 1.5 Ton can reach the dem-farm villages.

Market information is already broadcasted by the Tanjung Karang radio station, but dem-farm participants do not yet follow the broadcasts.

7.7. East Java Dem-Farms

The review team visited 4 dem-farms in Kabupaten Ponorogo, East Java. These were dem-farms set up in the fiscal year 1983/1984 in the WKPP Kauman I and dem-farms in 1984/1985 in WKPP Kauman III, dem-farms in 1985/1986 in Galak village and dem-farms in 1985/1986 in Pager, representing rainfed and upland areas.

All dem-farm are plots of 5 Ha run by 16 - 27 members. Each farmer has less than 0.25 Ha of rainfed and upland area of which a part is in the dem-farms.

7.8. Location of the Dem-Farms in East Java.

The PPM and PPL in Ponorogo did not use questionnaires as was the case in Lampung because the demplot - dem-farm - dem-area system and contact farmers and farmer groups already existed for more than one decade in this area, and are still being monitored. The selected dem-farms meet the location and potential farmer groups requirements.

All dem-farms are located on a village roadside or even near a kabupaten road, in a potential palawija area. A sign board is placed in each dem-farm which has data on the dem-farm and there is also a shelter for meetings among the extension staff and members of the farmer group.

All of the dem-farms began in October because the release of the DIP funds did not match up with the planting season. On the other hand the dem-farm s had to wait until the standing crop was harvested.

It was decided that each PPL should manage only one SCDP dem-farm. But still the Kepala Dinas Kabupaten considers that the more dem-farms in the area then the faster he can meet the targets for area and production of secondary crops, especially grain legume. Therefore, the Dinas Kabupaten also conducts other dem-farms on potential areas. There are more than 20.000 Ha of potential grain legume areas in Ponorogo covering dryland and irrigated land as well.

7.9. <u>The Farmer Groups in East Java</u>.

The farmer groups visited by the team were experienced in conducting demonstration trials . Besides, the group's head as a contact farmer gave him an opportunity to participate in training programs, meetings and other events conducted by the dinas kabupaten, or province (sometimes also at the national level).

The more advanced condition of these farmer groups in Ponorogo compared to that of North Lampung is an advantage for the introduction of new technology. During interviews with members of the groups, the team had the impression that adoption of new technology happens practically automatically.

These farmer groups have done the administration of the groups very well, by using books which record the following:

- data of crop cuttings
- data of activities and labor
- list of members and their land
- data of goods and the distribution
- TABANAS. (this book is kept by PPM)

Interviews with members of the group were quite open and fluent, where suggestions were raised to improve the dem-farm's activities. One member asked for a television set in order to follow programs on agriculture and village development, although he also mentioned the expensive cost to maintain a TV using car batteries.

Equipment and stocks are stored in the house of one of the members who has enough space. Cows are kept by a member who does not have cows yet, although he is not paid but gets the manure and calf.

After harvest time each member pays their loan back to the treasurer as much as he has borrowed (in kind from the donated inputs). Besides, every member also of the bigger group, can save money in the TABANAS. (TABANAS of the dem-farm group is separated from the savings of the other members outside of the dem-farm).

7.10. The Demonstration Farms in East Java

In the Agricultural Service (Dinas Pertanian) of Ponorogo there is a field team consisting of 5 persons each specializing in plant protection, agronomy, agro-economics, and production. Each team member has to supervise an area which has 4 demfarms.

The SCDP gives the Agricultural Service the opportunity to support the national grain legume (kedele) program. This is the reason why the dem-farm is given priority to apply cropping systems with grain legume (kedele) as the major commodity. The highest kedele production in the dem-farms was 1.2 ton/Ha in an intercropping system (2.27 ton/Ha per plot).

The recommended cropping system for the rainfed areas is:

paddy - kedele - kedele, with an intercropping of corn. For this system attention should be given to the right planting time of each commodity of high yielding variety and improvement of the cultivation techniques.

For upland areas the recommended cropping system is:

cassava intercrop corn - kedele - green beans (intercrop kacang tunggak).

During the last few years cassava is not grown as much as before due to low prices. This recommendation is accepted but still need some seasons to exercise new tilling methods and other activities concerned.

Fertilizer, pesticides, legine and lime for upland have been distributed to all the dem-farms. High yielding variety seeds of kedele and corn, and peanut seeds are distributed by the Dinas, while cassava stumps are provided by the farmers.

In the upland areas cassava is still one of the crops besides

rice, and most palawija crops are for the market. Corn is an additional food in most upland areas. Before the project the dem-farm members mostly grew upland rice, which took 4 - 5 month giving a yield of 2.1 ton/Ha and a price of Rp. 150.-/kg; while kedele in the dem-farm takes 3 month, a yield of 1.4 ton and a price of Rp. 675.-/kg.

The dem-farms have also the function of seed producer, and support the "seed flow system" among production areas. This is especially useful for kedele.

est and disease in the dem-farm area is not serious so far (virus and deficiency), thanks to appropriate application of recommended technology/techniques, and regular supervision by field extension workers.

7.11. Concept of the Revolving Fund in East Java.

Every farmer in the dem-farm group knows that the inputs, equipment and cows, distributed to the dem-farm is given once. There fore, the PPM/PPL assisted the group to prepare the essential steps for better management of the group and its resources.

The team had the chance to look into the books. It was clear that a simple but appropriate book keeping was being practiced by the members. The first saving of the dem-farm group in TABANAS was instructed to be same amount for every group, that is Rp. 100,000.-. One group has already saved an additional Rp. 200,000,- after harvest time. Additional individual saving is not planned yet, and still stay with the amount to be repaid for the loan (donated inputs considered as loan) without interest.

TABANAS is also planned for other group members outside the dem-farm. Even though, other members already apply the same cropping system, also using inputs bought by themselves (most of them always use inputs), are not supported yet by the group.

7.12. Supporting Factors and Agencies in East Java.

Ponorogo has already a road system which can reach almost every village, asphalted or at least strengthen with stone layers. Transport between the villages and the city of Ponorogo is easy by private bus companies; small trucks can easily go to these villages.

Kiosks selling fertilizers, pesticides, seeds, sometimes also tools,are mostly available in the kecamatan. The KUD has also its kiosk, which is also a dealer of commodities like PERTANI, Sanghyang Seri, CIBA and others.

The village unit of the BRI (National People's Bank) is spread throughout the Kabupaten. This makes borrowing and saving easier for the farmers. If it is necessary, the farmers can also make use of the nearest Post Office branch.

Officials of the local government, from the kabupaten to the village level, are aware of the agricultural programs for their areas. This is due to their membership in the BIMAS committee. These offices of different levels are well staffed.

Extension workers in Ponorogo have more opportunities to improve their knowledge through training, visits and exercises in the field as compared to their colleagues from the other islands.

Farmer who are qualified as contact farmers reach already a ratio of 1 among 15 farmers. In fact, this makes the transfer of technology much faster.

VIII. Social and Economic Studies

8.1. Background

A third component of the Secondary Food Crops Development Project were social and economic studies to be conducted at the Kabupaten, the Provincial and the National level. The Policy Study represents the national scope, whereas the Supply and Demand Study as well as the Marketing Studies viewed the provincial aspects of secondary food crops development. Baseline Studies and the Technology Impact Study served the project itself, the former as the basis for monitoring and evaluating the project's achievements and the latter to assess the impact of the technologies introduced by the project.

The Mid-Term Evaluation looked at the project's achievements accomplished by March 31, 1986. Within this period only the Baseline Studies have been finalized whereas the Marketing Studies have proceeded to their third phase. The Technology Impact Study, the National Policy Study, the Supply and Demand Study and the various marketing appraisals are still under consideration or the implementation has not started within the evaluation period. Hence, this evaluation report on the social and economic studies report will concentrate on the Baseline Studies and the Marketing Studies.

During the team's field trip only the provinces of Lampung and East Java had been visited by the assessors of the project's Socio-Economic activities. However, it is the opinion of the assessors that the results stated for these two provinces are in principle valid for the province of South Sulawesi too.

The following will therefore focus of the Baseline Study and the Marketing Studies and will discuss:

a. objectives of the studies and how those objectives are linked to the project's objectives;

b. the planning of the studies and operational consensus between the implementing agency and the project management as well as guidance given to the implementing party during operation;

c. the results achieved and how the results have been used within the project.

8.2. Baseline Studies

8.2.1. The objectives of the Baseline Studies and How these Objective are Linked to the Project's Objectives.

The baseline studies are stated in the project paper (page 66) as the means of verification for indicators on the goal as well as the purpose level. In this way the Baseline Studies were supposed to provide the basis for a monitoring system which should serve the project management to direct and monitor the project operation and to take corrective actions when necessary. Based on a report prepared by Kyaw Mint, P. Foster and W. Biddier (An Approach to the Baseline Survey, Indonesia Secondary Food Crops Development Project by Kyaw Mint,. Foster, W. Biddier, Bethesda, 1982) the baseline studies were proposed to achieve the following goals:

- provide basic information for benchmark purposes, as well as a framework for detailed studies of the project area;
- provide a quantitative and, to a lesser degree, a qualitative basis for project analysis and monitoring activities;
- Assist delineating the beneficiaries (active participants) and the intended beneficiaries of the project over time.
- Provide a basis for the quantitative evaluation of changes in the indicators of the project's impact.

The yardstick to measure whether the Baseline Studies have achieved their objectives are the goals stated above as well as the higher level objectives of the project to which achievement of the successfully accomplished Baseline Studies should have contributed.

Assuming that the Logical Framework comprises the project planning, the baseline studies form a essential part of it and indicators assessed by these studies should be in line with the logical framework.

As an example the project's purpose is given as:

Objectives	Indicators
1. To introduce improved cropping systems	About 50% of farmers in the six WKBPP's and about 30% of farmers in Kabupaten Bone, Ponorogo and North Lampung will adopt improved cropping systems.

2. To increase use of commercial inputs, and improve agronomic practices.	About 50-70% of farmers in six WKBPP's have adopted improved agronomic practices; about 50-70% increased in their use of commercial inputs.

Because the objectives of SCDP have been unrealistic and not clear the baseline survey did not identify simple and practicable indicators for the project management.

As strategic indicators the extension situation within the survey area was listed, but the SCDP did not aim to change the number of field extension workers in the project area. In addition the baseline study of Lampung University assessed farmers' responsiveness with regard to extension, though it was already clear that SCDP would use the well-known and successful channel PPL - Ketua kelompok-kelompok.

8.2.2 Planning of the Baseline Study and the operational consensus between implementing agency and project management

The Universities in Malang, Lampung and Ujung Pandang had been contracted by the project management for the Baseline Studies. In the case of the Brawijaya University one year was spent for negotiations prior to the signing of the the contract. Due to this long time spent and the prevailing insecure situation the Brawijaya University team changed considerably. In addition delayed payments hampered the scheduled accomplishment of the studies.

Based on the Terms of Reference and the guidelines which included a master survey design the Universities developed a questionnaire, which was then subject to discussion with the palawija project office and USAID program officer. However, it can be concluded from the discussion with the teams of the Universities of Lampung and Brawijaya that the discussion with the PPO stressed the formal procedures of the survey instead of initiating and encouraging the research work. It is very likely that the lack of discussion on questions such as:

- should SCDP provide credit?
- how to provide credit to the farmers?
- should SCDP provide post-harvest equipment?

lead to the direction the baseline studies had taken. In particular the Brawijaya team mentioned that there had been no technical advice on how to apply the Baseline Survey Guidelines and meetings which took place concentrated on financial issues instead. As a result the Baseline Studies comprise an impressive amount of data but no new ideas or workable indicators had been put together. After completion the survey report was sent to the

PPO and the first discussion on the report started in the 1984 project meeting at Madiun where the results had been confronted with the expectations of the steering committee members.

The study results have only been discussed at the yearly SCDP meeting in Madiun. For the Brawijaya team it was unknown how the results have been used within the SCDP. No clear picture of SCDP existed and because of that it was obvious that Brawijaya could not comment of the project performance. It seemed that the Universities served only as contractor and there had been almost no coordination between the various components of the projects.

The design and terms of reference for the baseline study had been developed by USAID taking the guidelines already mentioned by K. Mint, P. Foster and W. Biddier as guidance. The University of Lampung was contracted to implement the baseline study in Lampung. Survey areas both for the expected project site and the control area to measure the project's achievement were selected by the Dinas Pertanian Lampung.

Receiving the TOR's from the PPO, the Lampung University team formulated questionnaires and discussed their survey proposal with the PPO and the responsible USAID program officer.

It seemed to be a mistake to provide a master survey design and a standard questionnaire to the University team-members and then negotiate modifications of the questionnaire where there was no common understanding of what had to be achieved .

At the time the survey was conducted the Lampung University team had no further communication with the project management. First interactions of the parties involved started with the sending of the preliminary survey report.

In a project meeting in Madiun in 1984 the baseline survey results had been confronted with the expectations of the different agencies participating in the steering team and technical team. It soon became obvious that due to the time spent to coordinate this activity the results could not meet the demand of the respective parties.

One year of discussion went on prior to the signing of the contract in the case of the East Java Baseline Study. During this period a meeting took place at the Directorate of Food Crops Production in Pasar Minggu discussing the financial frame of the study.

Technical advice to adopt the guidelines prepared by Mint, Foster and Biddier had not been provided by the project management according to the University of Brawijaya team members. Nevertheless, the team tried to follow the terms of reference.

8.2.3. Results achieved and how the results of the baseline studies have been used.

After the SCDP meeting in Madiun there has been no follow-up to the baseline study.

The baseline study prepared by the University of Lampung comprises an impressive amount of data which shows the diligence with which the entire team had been engaged in the work. Due to non-specific objectives not all data seemed to be of importance for further project implementation.

Very detailed data had been collected about the situation of the farmers' family, the condition of crop and livestock production as well as some consumption data and basic marketing patterns. The data itself give isolated specific and scattered information about the existing situation within the rural area of North Lampung. But not the same effort had been put on the analysis of the data. Data have not been analyzed in much detail and also the linkage to the objectives of the study has not been discussed to a greater extent.

Hence a huge amount of unworkable data found its way into the report and did not achieve the study's purpose.

8.3. Marketing studies

Marketing Studies under the Secondary Food Crops Development Project aimed to assist policy makers in recommending programs to strengthen the role of secondary food crops for production and consumption respectively. Since marketing links production and consumption the Secondary Food Crop Development Project had necessarily to include the marketing aspects to ensure that the development of these crops is not hampered by this sector. In addition 'Marketing' was expected to be an important prerequisite for the success of the secondary food crops support programs and SCDP demanded a type of marketing study which intended to provide results available for immediate action rather than producing reports for the bookshelf.

8.3.1. The Objectives of the Marketing Studies and how those Objectives have been Linked to the Project's Objectives.

The market research technique used by the Washington based USAID "Small Farmer Marketing Assessment Project" offered the kind of marketing study needed by the SCDP. Logically the SFMA-Project was asked SCDP to assist in transferring this research approach to Indonesia.

The methodology of this research approach is derived from the structure - conduct - performance paradigm developed by the Michigan State University in the early seventies. The Small Farmers Marketing Assessment Project provided the research guidelines and technical assistance for implementation. A phase - concept had been used covering a period of fifteen months to introduce this new methodology carefully and one province had been selected to serve as a pilot province. The study started with University of Hasanuddin in South Sulawesi to gain experience with this approach in Indonesia, to adjust the concept

to the existing economic and cultural environment and in order to prepare a smooth adaptation of the approach in the provinces of Lampung and East Java thus reducing the need for backstopping.

Marketing assessment has been understood as an inter-disciplinary approach to analyze the organization, operation, and performance of agricultural commodity system, to diagnose the system's performance, and to predict likely consequences of implementing those alternative recommendations.

Institution building was one objective of the marketing studies too. SCDP expected that the Universities would be interested in working with the marketing assessment because of this new research methodology. Altogether three marketing consultants assisted the University teams in the transfer of this technology. They spent time for training and explaining the guidelines, executed field trips and assisted in preparing the research reports. However, it can be concluded that the Universities behaved more as a contractor than an institution receiving technical assistance.

8.3.2. The Planning of the Studies and the Operational Consensus between the Implementing Agency and the Project Management as well as the Guidance given to the Implementing Party during Operation.

The research heads at the contracted universities functioned more as a research manager being responsible for signing the contract, allocating the funds as well as managing and supervising the research team. In Lampung Dr. Mintarsih's role was obviously limited to the research administration, whereas Dr. Kustiah and Dr. Iksan for South Sulawesi and East Java respectively guided and assisted their teams also in the research questions.

The work of the universities were often hampered by the information flow from USAID, PPO to the research teams and the coordination problems created by the various parties involved and their respective administrative procedures. Research work which was scheduled to coincide with harvest peaks were missed and the research had been delayed by an entire season.

This type of action research was very new to the universities and it faced difficulties in both the methodology itself and the existing administrative procedures which are not compatible with action research.

The research methodology of the marketing assessment studies favors the qualitative statement by a specific expert observation rather than a questionnaire type of quantitative research. Though it was assumed that the high ranking university teachers were prepared to perform long field visits and discuss specific marketing problems with farmers and traders. Certainly, the type of experienced researcher was needed to conduct this study successfully. But it turned out that the qualified research team members had too many conflicting responsibilities and obligations

to commit sufficient time and effort to the assessment studies.

The universities had surprisingly some difficulties with the English guidelines. The assessors still registered some confusion about the understanding of the research approach.

Research team members thought it was just too simple to collect secondary data, to interview some key persons, to write about this specific encounter and to label this approach 'scientific'.

We have also to admit that training and guidance for the assessment studies was not adequate to convey the objectives. Besides the consultants engaged in the studies, we found limited knowledge with regard to the assessment approach, though the PPO and the technical team members were not yet capable to assist in guiding the universities either, because of time restrictions or insufficient experience with this type of research.

The budget regulations were not supportive to the assessment concept. Days spent in the field, travel funds etc. had to be planned in advance and this is not in line with the understanding of action-research.

8.3.3. What are the Results of the Studies and how have They been used within the SCDP.

To identify what kind of barriers are hampering the increase of palawija production and trade was part of the expected output of the marketing studies. The studies did answer these questions to some extent and provided starting points for further investigations in these areas. The available results have not been used by the Palawija Project Office.

At the time of the evaluation, the marketing studies were already in their third phase. The teams from the Universities of Brawijaya and Lampung were proposing a research outline for phase II and the South Sulawesi team had almost accomplished phase III.

The prepared phase I and II reports showed an impressive amount of collected data and it has to be said that for the time being these studies are the most comprehensive ones with respect to palawija marketing in the provinces of Lampung, East Java and South Sulawesi. Especially the phase II reports and in particular the descriptive analysis of the observed marketing system prove the diligence of the teams.

However, the analysis is lopsided in the way that it concentrates on description on isolated facts. The production data for instance are described and next to it price data are presented, but very seldom the analysis and the comments lead to a comparison of different data sets.

Researchers in Indonesia seem to have sufficient experience and are very confident in interviewing farmers. Therefore, the farm management part of the studies is always better than the part discussing the trade aspects. This is probably caused by the fact

that the majority of palawija traders are chinese and the Javanese researchers might have hesitated to interview these traders or these traders may have been reluctant to provide insights into palawija marketing.

8.4. Recommendations.

In the first three Repelitas (five year plans) Indonesia's agricultural policy concentrated on the production of rice and resulted in a dramatic production increase of Indonesia's major staple. Support and research programs contributed to the increase in the area available for wet rice production and under the BIMAS scheme farmers enjoyed subsidized inputs plus credit and last but not least a floor price policy assured farmers of a fair reward for their efforts.

Aiming at reducing this dependency on rice which accounts for 65% of the average daily calorie intake in Indonesia, the priority is now given to secondary food crops. These crops in Indonesia are those which are second to rice in terms of consumption and also second to rice within the traditional crop rotation. Unlike rice where the production potential is almost coinciding with the distribution of the population and concentrates on the island of Java, the production potential for secondary food crops are also on the sparsely settled islands outside Java. Hence, along with the strengthening of secondary food crops development the national goals of food security and equity are gaining importance.

Food security and equity are more than just self-sufficiency for the major staple in terms of the national import/export balance. All social classes should be able to enjoy their demanded quantity and quality of food. Not to mention the great problem of food distribution in a country with 165 million people scattered over 13,000 islands stretching out over a distance of more than 5000 km. It is a challenge for Indonesian agricultural policy to tackle these national goals, but it has been understood already that these goals call for a different type of policy. A more efficient allocation of national resources to achieve a more diversified and cost-efficient production of food crops.

Since SCOP is covering a range of activities involving several Directorates within the Directorate General for Food Crops as well as the various Research Institutions the social and economic studies should be located in the responsible government agency for these types of activities. The Directorate for Food Crop Economics has the mandate for the economics of the food crops sector.

8.5. Proposal For A Market Information System.

8.5.1. Goals and Objectives

Development of palawija Crops in Indonesia is dependent on the effective flow of market information to all those involved in food production and distribution. Timely and accurate market

information is required in order to frame effective policies, design appropriate programs and to make the myriad of allocation decisions required in the day to day practice of producing and distributing palawija foodstuffs.

The Marketing Sub-directorate of the Economics Directorate has ongoing activities which form the nucleus of a market information system. These are the price information service and the newly initiated Supply and Demand study. The price information service collects and disseminates daily spot price quotes from major palawija producing provinces. The price Information service has been in operation since 1977/1978 and is in need of expanded supervision and more effective message targeting. The supply and Demand study combines macro-modelling, international market assessment and market appraisal activities in an effort to identify marketing policy and program options for the near to medium-term planning future. This activity will involve the Inter-Ministerial cooperation between Binus, Bulog and the Director General of Trade. This activity will directly support the ongoing floor price policy analysis program and trade policy analysis activities conducted by the marketing sub-directorate.

The aim of the market information system should be to supply needed information, on a timely basis, to policy markers, planners, farmers, traders and processors. The information services provided should meet the needs of the market participants and should be transmitted effectively and efficiently. The information provided should increase market awareness and lead to more efficient formulation of policies and programs, and greater efficiency in production and distribution of secondary foodstuffs.

8.5.2 The Market Information System

The Market information System would consist of a set of information collection, analysis and dissemination services. At the center, this would be based upon (1) improvement of the price information service, (2) establishment of a price and trade policy analysis group, and (3) regularization of market assessments. In selected SCDP project provinces, the market intelligence system would expand upon the price reporting service by developing and disseminating regular situation and outlook reports. Each of these activities is described in more detail below.

The improvement of the price information service would involve instituting greater supervision and performance monitoring activities to improve the quality of the information supplied. Changes would be made to concentrate the system on secondary crops and gradually transfer obligations for horticultural crops to the newly created horticulture directorate. Efforts would be made to increase the cost-efficiency of collecting and disseminating price information by concentrating collecting efforts in key Provinces, substituting telex for telephone communication links and identifying alternative sources of

ORGANIZATIONAL STRUCTURE OF THE SUBDIRECTORATE FOR MARKET INFORMATION

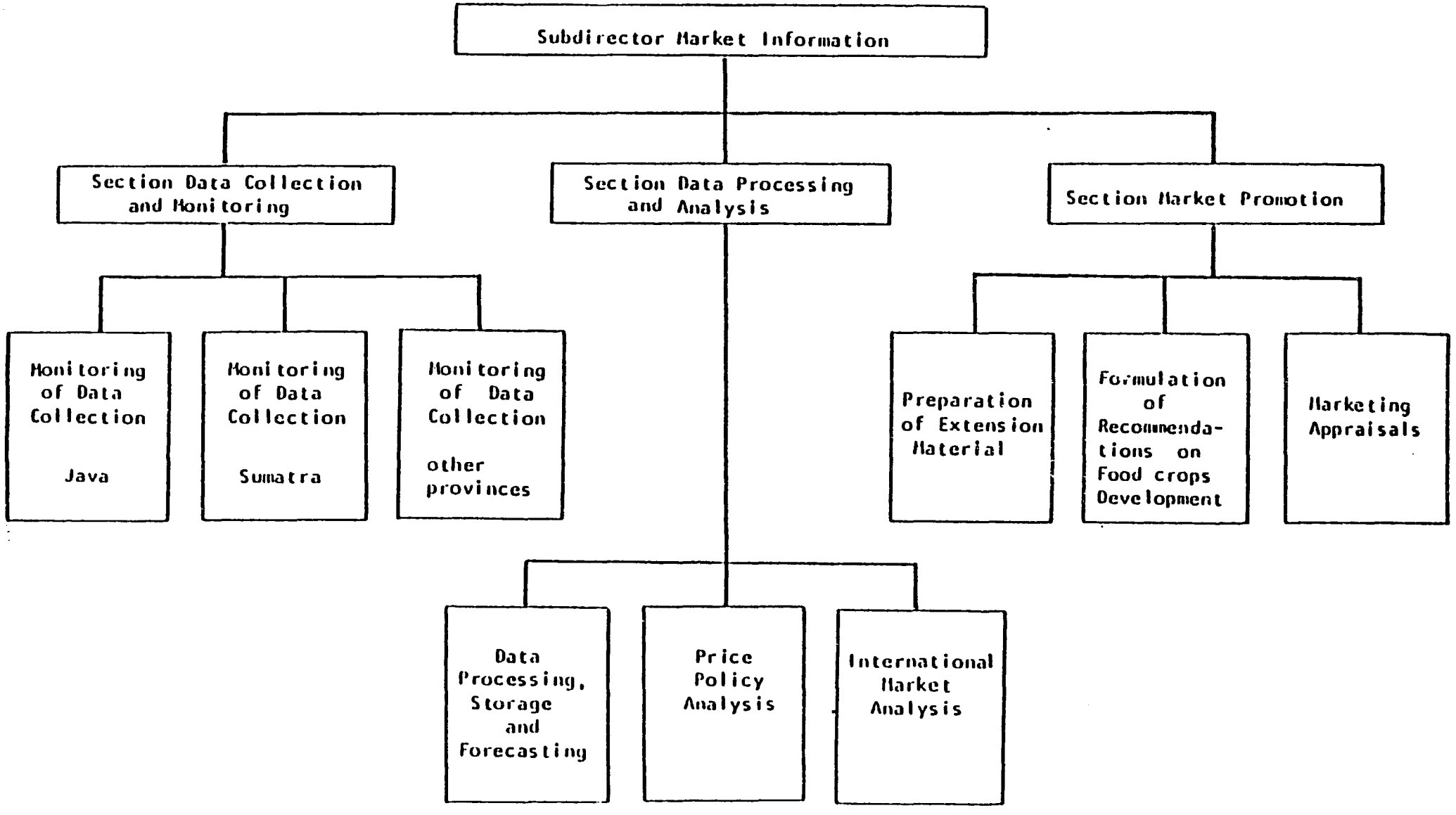


DIAGRAM - 2

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financing (or public support) for radio broadcasts. For the project Provinces, a system of near-term price forecasting will be developed. These price forecasting will be used for central level policy analysis as well as for local (eg. Provincial) dissemination to the target audience.

A price and trade policy analysis group will be established to provide on-going model based analysis support for the floor price, subsidy and trade policy reports provided by the Directorate. Limited-scale models of food crop supply and demand will be linked to different international market scenarios. The trade policy group will analyze the prospects for increasing competitiveness of food crop production and will propose trade policies commensurate with that goal. The group will establish a regular food policy report linked to the analysis requirements for the floor price program.

The Marketing Sub-Directorate would conduct a series of special marketing assessment studies on a regular basis as part of the market information system. These studies would be used, in the first instance, to locate Provinces, and areas within Provinces, suitable for SCDP project expansion. These studies would also be used to examine specific marketing bottlenecks or sub-systems and to suggest means of improving those sub-systems. A series of reports based upon these marketing appraisals will be made available to relevant policy-markers, program managers and concerned members of the private sector. The marketing appraisals will be conducted by a special task force involving members of the central and provincial Binus staff plus officials from other concerned Ministries.

In the project provinces, a pilot effort at broadening the quantity of market information provided to farmers and traders would be developed. This would be implemented first in East Java and then, based on the lessons learned there, transferred to other project Provinces. The market information would include the price reporting system plus a biweekly market situation and outlook report. This report would include a discussion of likely outcomes in supply of secondary food crops and forecasts of prices and market demand conditions for the relevant foodstuffs. The situation and outlook report would also include an analysis of other information that could influence Provincial supply and demand for secondary crops such as trade reports, comments from leading traders, changes in laws and legislation affecting trade, costs and returns from producing or processing palawija and capsule reviews of ongoing projects and programs effecting palawija development. This information would be disseminated to the farm and trade community through radio/tv spots and targeted newsletters.

8.5.3. Assistance Required

The assistance required for the market information system can be divided into technical assistance, training, commodities and operational support. An estimated breakdown of these requirement is as follows :

ACTIVITIES AND OUTPUTS OF A MARKET INFORMATION SERVICE

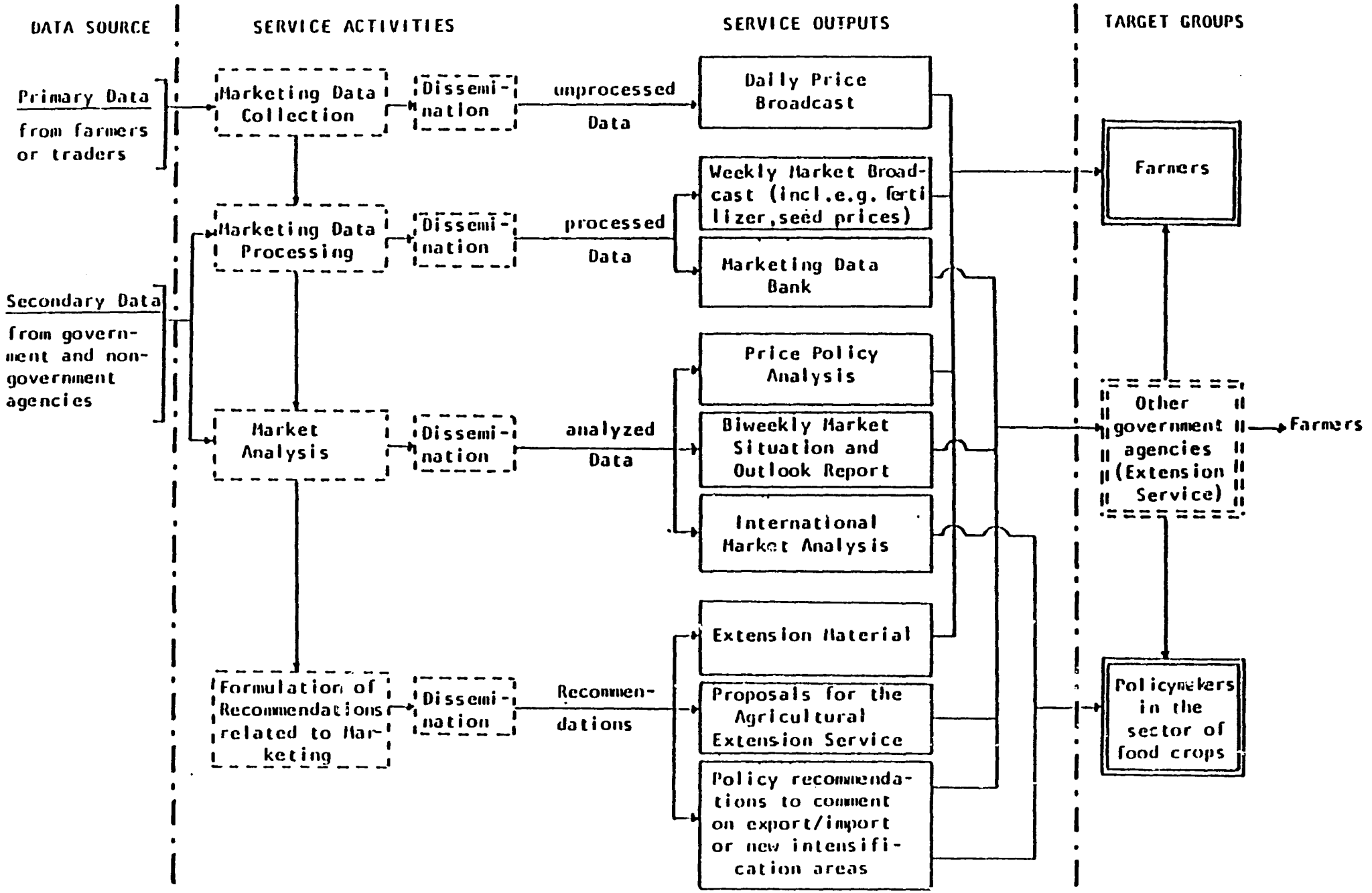
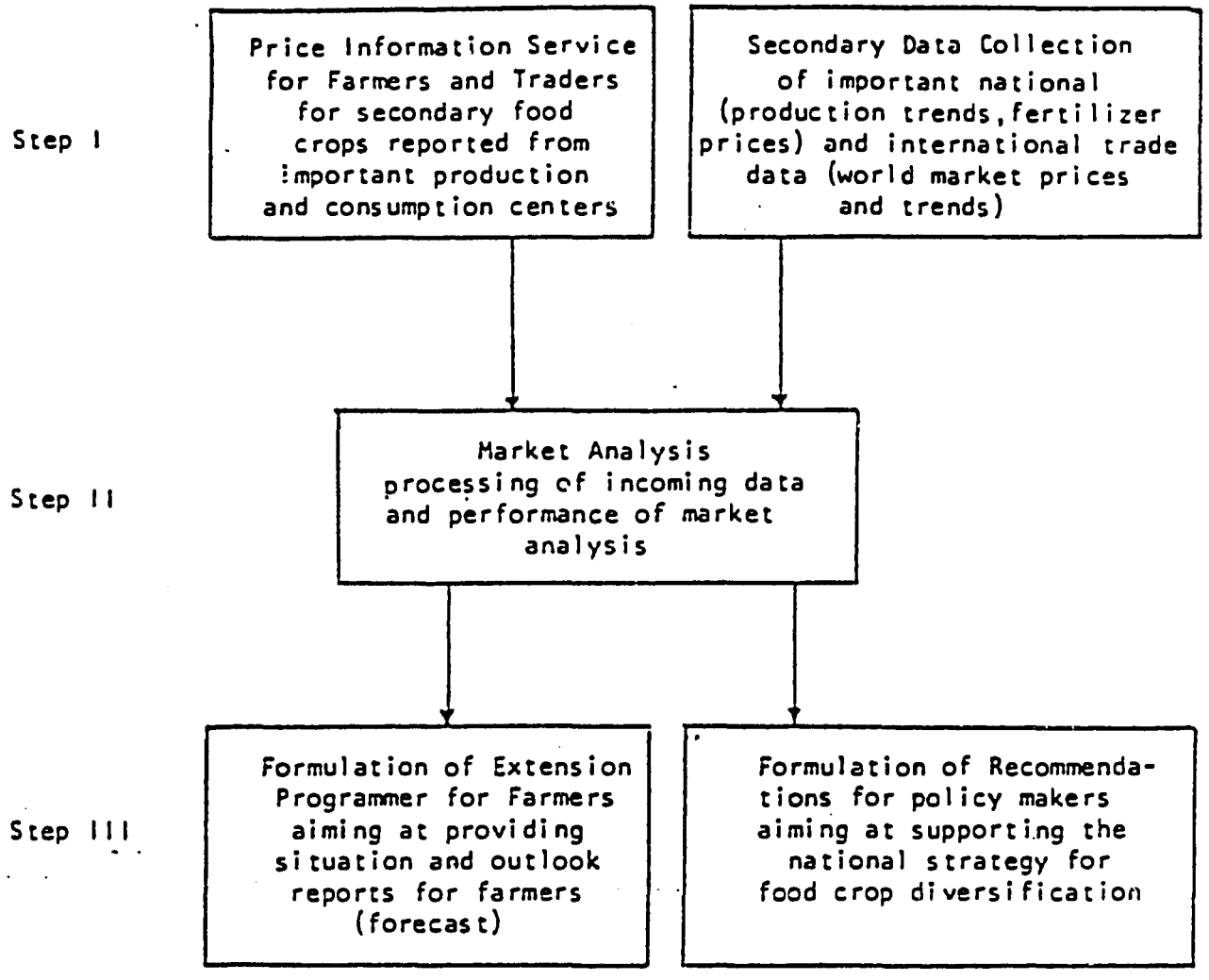


DIAGRAM - 5

MARKET INFORMATION SERVICE



1. Technical Assistance : an economist to assist in the supply/demand trade policy modeling. That individual would also develop and implement price forecasting techniques and would support the price information system. The economist would also assist in the marketing appraisals. An economist/extension specialist who would assist in the marketing appraisals and who would guide the development of the Provincial situation and outlook reporting service.

2. Training : short-term training is required in model building, trade policy analysis and market survey techniques. Overseas training at the Masters level in marketing or economics should be supported under this activity. Annual staff training and review sessions should be financed.

3. Commodities : vehicles should be provided to the project consultants and motorcycles provided to central and provincial level Binus staff. Micro-computer systems should be upgraded at the central level and installed at the Provincial level.

4. Operational : Financing is required to support the monitoring and supervision of the price reporting system; model building activities and rapid marketing appraisals. Special funds should be provided for data collection, analysis and reporting required for the situation and outlook reports.

The Directorate for Food Crops Economics has concentrated on step I and step II of the concept while the most variable step III has not yet been addressed. It is obvious that only by accomplishing the entire concept can the information collected be of value if these are transformed into recommendations and extension programs as outlined in step III.

8.5.3. Outputs of the Market Information Service

The final objective of a market information service will only be achieved if we are able to reach the target groups. Impressive amounts of data are useless, if they are piled up in agricultural offices hidden from farmers and policy makers. Systematically and continuously collected information has to be available for the user. However, before starting a market information service we

have to identify what kind of information is relevant and needed by our target group.

To answer these questions we may look at some essential requirements the information has to fulfill to meet the need of the target groups.

The information has to be:

a. Relevant, i.e., its content must be related to the specific framework conditions in which the target group have to decide on their marketing related actions. These conditions may be different at the various locations, for the different products and the different target groups;

b. Meaningful, i.e., specifying precisely to which quality, location, time and trade level a certain information, such as a price quotation is related;

c. Reliable and impartial, i.e., accurately and regularly collected, analyzed and transmitted;

d. Promptly Available, i.e., published within a few hours of being collected, so that the target groups can base decisions on up-to-date information;

e. Easily Accessible, i.e., published through media, which are conveniently and with no extra cost available to the target groups.

Based on these requirements market information service in close cooperation with the agricultural extension service has to select the appropriate media, form, content and language for the different information provided for the various target groups.

8.5.4. Integration and Activities of the Market Information Service

The Market Information Service will be an integrated part of the existing structure of the Directorate General for Food Crops and the Provincial Agricultural Services. At the central level the Market Information Service will be located with the Sub-directorate for Market Information, Directorate for Food Crop Economics. At the provincial level the activities of the Market Information Service will be under the Marketing Section, Division for Food Crops Economics.

8.6. Technology Impact Studies by the Agro Economic Survey.

8.6.1. Background.

The development of effective strategies for food crop diversification will require the collective efforts of many specialties. Agronomists will be called upon to develop technology packages suited to the varying agro-climatic conditions in the countryside. Entomologists will be called on to

devise means of protecting the crops from pest and disease outbreaks. In that same vein, economists and sociologists will be asked to evaluate the new technologies to determine the socio-economic suitability and impact of the induced innovations.

Under the Secondary Food Crops Development Program, a multi-disciplinary approach is being used to promote food crop diversification in selected provinces. Within the Project, new cropping patterns and extension approaches are being introduced in order to increase farmer's income, employment opportunities and nutrition levels. It is important that the process of technological transformation be carefully monitored and adjusted so that the most effective system for diversifying food crop technology is utilized.

The Agro-Economic Survey is an established institution with the proven ability to conduct detailed socio-economic surveys in rural areas. In 1986 the Agro-Economic Survey was first invited to conduct a technology impact study under the auspices of the Secondary Food Crops Development Project. The aim of that study is to evaluate the impact of the secondary food crop technology packages of the farm community. This will involve assessing the suitability of the technology packages in the target farm communities and assessing the extent to which the induced technological change is sustainable after project interventions are removed. The study will also identify the constraints to technological diffusion in the target community and suggest means by which those constraints can be overcome within the context of the SCDP project. In addition, the study will produce a locally adaptable methodology for evaluating the impact of newly introduced technology packages. It is expected that this methodology can be employed by the agricultural extension service in the project kabupatens so that they can conduct on-going impact monitoring programs.

8.6.2. Proposed Work Program.

It is proposed that the Agro-Economic Survey actively participate in evaluating the impact of new technology packages introduced at the farm level and that the Survey provide training for extension agents in methods and techniques appropriate for technology impact monitoring. The aim of these studies is twofold. The first aim is to provide a rigorous source of impact monitoring information that can be used by the SCDP steering committee to alter or correct the technology diffusion systems utilized in the project. The second aim is to develop the indigenous capability to conduct socio-economic impact evaluations on the part of the Provincial extension service and to demonstrate the usefulness of this form of work to the local extension agents.

The Agro-Economic Survey will conduct a technology impact study in each of the three or proposed four project provinces. These studies would be aimed at (1) identifying the impact of project induced innovations on the ongoing demonstration farm participants: former demonstration farm participants and impact areas farmers, (2) identifying constraints to adoption of

The cost of the proposed work plan for the Agro-Economic Survey is based on a proposed cycle of (1) Survey, (2) training, (3) Follow up Control Surveys in each of the project provinces. It is estimated that a total of two months of field work and training per year would be required. In addition to this, one month of field training and control activities would be needed to catalyze impact-monitoring activities in the SCDP provinces. A proposed schedule and indicative budget is in the appendix.

IX. Planning and Project Implementation

9.1. Structure of the project, both formal and actual

As was described in the Project Paper of April 1983, the formal structure of the SCDP includes a large number of organizations. These are the following along with their planned activities:

1. Directorate General for Food Crops

    1. Lead organization for the SCDP
    2. Budgeting and Management

2. Directorate of Food Crops Production Development

    1. SCDP assigned to this Directorate
    2. Management of the SCDP
    3. Personnel to staff the Palawija Project Office
    4. SCDP Experts in Jakarta assigned to this Directorate

3. SCDP Steering Committee

    1. Determine policies of the SCDP
    2. Ten members from organizations assisting SCDP

4. SCDP Technical Team

    1. Provide technical assistance to the SCDP
    2. Thirteen members from organizations assisting SCDP

5. Palawija Project Office

    1. Administration of the SCDP
    2. Financial control and monitoring
    3. Planning of SCDP activities
    4. Requesting reimbursements
    5. Prepare and submit DUP and DIP

6. Directorate of Food Crops Economics

    1. Supervise the marketing studies
    2. Member of the Steering Committee
    3. Member of the Technical Team

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7. Provincial Agricultural Service of East Java

1. Establish and administer the dem-farms
2. Financial management of the dem-farms
3. Provide support for SCDP in East Java
4. Staff are members of the Field Team

8. Kabupaten Agricultural Service of Ponorogo

1. Establish and manage the dem-farms in Ponorogo
2. Staff are members of the Kabupaten Field Team

9. Provincial Agricultural Service of South Sulawesi

1. Establish and administer the dem-farms
2. Financial management of the dem-farms
2. Financial management of the dem-farms
3. Provide support for SCDP in South Sulawesi
4. Staff are members of the Field Team

10. Kabupaten Agricultural Service of Bone

1. Establish and manage the dem-farms in Bone
2. Staff are members of the Kabupaten Field Team

11. Provincial Agricultural Service of Lampung

1. Establish and administer the dem-farms
2. Financial management of the dem-farms
3. Provide support for SCDP in Lampung
4. Staff are members of the Field Team

12. Kabupaten Agricultural Service of North Lampung

1. Establish and manage the dem-farms in North Lampung
2. Staff are members of the Kabupaten Field Team

13. Directorate of Food Crops Extension

1. Training

14. Bimas Secretariat

1. Administration of extension staff (PPS, PPL, PPM)
2. Synchronizing provision of inputs, credits, marketing and cooperative development

15. Agency for Agricultural Education, Training and Extension

1. In-country training for field teams
2. Administration and management of the rural extension centers
3. Management of National Agricultural Extension Project

16. Agency for Agricultural Research and Development

1. Cropping systems research
2. Assistance in training

17. Maros Research Institute for Food Crops

1. Cropping systems research in Bone Kabupaten
2. Advice to extension staff on component technologies
3. Assistance in training

18. Bogor Research Institute for Food Crops

1. Cropping systems research in North Lampung Kabupaten
2. Advice to extension staff on component technologies
3. Assistance in training

19. Malang Research Institute for Food Crops

1. Cropping systems research in Ponorogo Kabupaten
2. Advice to extension staff on component technologies
3. Assistance in training

20. National Logistics Bureau (BULOG)

1. Post harvest management training
2. Member of the Steering Committee
3. Member of the Technical Team
4. Research on post harvest operations

21. Directorate General of Cooperatives

1. Demonstration on post harvest at the farm level in cooperation with KUD (Kooperasi Unit Desa)
2. Assist in development of farm plans and investment plans in both demonstration and intensification areas.
3. Procure secondary crops on a regular and contractual basis
4. Member of the Steering Committee
5. Member of the Technical Team

22. Bank Rakyat Indonesia (BRI)

1. Provide supervised credit to the farmers in the intensification schemes.
2. Member of the Steering Committee
3. Member of the Technical Team

23. Gajah Mada University

1. Supply rhyzobium inoculum

24. Hasanuddin University

1. Carry out the Baseline Study in Bone
2. Carry out the Marketing Study in Bone

25. Lampung University

1. Carry out the Baseline Study in North Lampung
2. Carry out the Marketing Study in North Lampung

26. Brawijaya University

1. Carry out the Baseline Study in Ponorogo
2. Carry out the Marketing Study in Ponorogo

27. Private Traders

1. Procure secondary crops on a regular and contractual basis by offering attractive prices for products of superior quality

28. Private Enterprise

1. Provide training on appropriate component technologies
2. Provide extension materials to Agricultural Service
3. Supply inputs to the farmers

As can be seen from this list of organizations involved in the SCDP and their roles, the project is too complex and very difficult to manage and develop a reasonable plan. Implementation when there are so many organizations, ministries and directorates involved is very difficult and monitoring is even more complex. This is shown by the major problems of providing funds to the various organizations on time. Almost all of them complained of late arrival of funds causing problems in implementation. This is caused by the complexity of the Project with many institutions and the lack of full-time Project Leader in the Palawija Project Office.

This problem of many institutions creates budgeting problems and how to ensure that funds budgeted for one of the organizations arrives on time, especially if in a different ministry or even directorate general. It is very important in the DUP and DIP process to earmark the funds for each organization in order to have a smooth and rapid transfer. If these funds are not clearly earmarked then it requires various meetings and discussions before the amounts and the organization recieving the funds are clearly determined. This greatly slows down the transfer of funds.

9.2. Physical Implementation by April 1, 1986.

As is shown in the following Gantt Chart Report of the SCDP, the activities already implemented by April 1, 1986 are a small portion of the planned activities. Most are planned after April 1 but this is primarily what is hoped and the chances of actually accomplishing them are rather remote. Most should have already been initiated according to the Project Paper.

GANTT CHART REPORT - Current Date: 01-01-00

ALL PROJECTS

CODE	JOB NAME
	Secondary Food Crops
1000	ESTABLISHMENT OF THE SCRP
2	Loan Signed on Nov 23, 1983
3	Palawija Project Office formed
4	Steering Committee appointed
5	Staff appointed to the PPO.
6	Dana Prudenti in charge PPO
7	Additional staff appointed PPO
8	Formation of Technical Team
9	Tender Committee for Experts
10	Field Team in Lampung formed
11	Field Team in Sulawesi formed
12	Field Team in East Java formed
13	Revision of RIP 1983/84
14	
2000	TECHNICAL ASSISTANCE FOR SCRP
16	Library Expert at BULBS
17	Expert in Agronomy S.Sulawesi
18	Expert in Agronomy for Lampung
19	Expert in Economics at BIMAS
20	Expert in Cropping Systems
21	Expert in Post Harvest
22	Expert in Ag. Economists
23	Expert in Storage & Quality C.
24	
3000	TRAINING PROGRAM OF THE SCRP
26	Contact Farmer TrainingLampung
27	ContactFarmer TrainingSulawesi
28	Contact Farmer Training E.Java
29	Training Staff KUD in Lampung
30	Training Staff of KUD EastJava
31	Training Staff KUD S. Sulawesi
32	Training of Traders in Lampung
33	Training of Traders in E. Java
34	Training of Traders S.Sulawesi
35	Training in Ag Econs Lampung
36	Training in Ag Econs in E.Java
37	Training Integrated Pest Manag
38	Cropping Systems (3months)
39	Post Harvest Processing (3mo)
40	Grain Storage & Marketing-1mo
41	Ag. Research Results (1mo)
42	Project Implementation (3 mon)
43	Small Farmer Credit (1 persons)
44	Management Conservation (4 mon)
45	Computer Training-InCountry 6m
46	Contact Farmer Train. Lampung
47	Contact Farmer Train. S.Sulaw
48	Contact Farmer Train. E. Java
49	
4000	EXTENSION OF TECHNOLOGY
51	Dem-Farms (6 units) Lampung
52	Dem-Farm (12 units) in Lampung
53	Dem-Farms (18 units) Lampung
54	Dem-Farms (6 units) in E. Java
55	Dem-Farm (12 units) in E. Java
56	Dem-Farms (29 units) in E.Java
57	Dem-Farms (18 units) E. Java
58	Dem-Farms (6 units) S.Sulawesi
59	Dem-Farms(12 units) S.Sulawesi
60	Dem-Farms(29 units) S.Sulawesi
61	Dem-Farms (18 units)S.Sulawesi
62	Post Harvest Dem. in Lampung
63	Post Harvest Dem. S. Sulawesi
64	Post Harvest Dem. in Lampung
65	Post harvest Dem in S.Sulawesi
66	Post harvest Dem. in E. Java
67	Workshop Palawija Development
68	Library Workshop at BULBS
69	Palawija Development Workshop
70	
5000	CROPPING SYSTEMS RESEARCH AGRO
72	Cropping Systems Res. BORIF
73	Cropping Systems Res.by MARIF
74	Cropping Systems Res. by MORIF
75	Cropping Systems Res. by MARIF
76	Cropping Systems Res. by MORIF
77	
6000	SOCIAL AND ECONOMIC STUDIES
79	Base Line Survey in Lampung
80	Base Line Survey in East Java
81	Base Line Survey in S.Sulawesi
82	Marketing Study by UNIBRAW
83	Marketing Study by UNILA
84	Marketing Studies by UNHAS
85	Sec-Farm Data Analysis(Illustr.
86	Supply & Demand Palawija Study
87	Technology Impact Study
88	Mid-term Evaluation
89	Marketing of Palawija Phase II
90	Policy Research
91	
7000	PALAWIJA DEVELOPMENT
93	Palawija Dev(90 units) Lampung
94	Palawija Dev(90units)S.Sulawesi
95	Palawija Dev(90 units) E. Java

SYMBOL DEFINITIONS:

- 0 PROJECT START
- $ DATE DEPENDENCY
- E TERMINATOR
- M MILESTONE

- ----) CRITICAL
- ----) NON-CRITICAL
- ....) SLACK
- ----) FINISHED

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This Gantt Chart also indicates part of the reason for the delays. It took from May 1983 to April 1984 to set up the project and to get the first DIP funds. Unfortunately, USAID is unrealistic in planning of a project. If a project begins in May, then the Project Leader can only begin developing his DUP budget request and get his DIP budget approved in January, then the funds can be released in the new fiscal year beginning in April. This occurred with the SCDP as the project began in May 1983 but the actual activities could not really begin until the DIP funds arrived in April 1984. Therefore, one should assume the SCDP began in April 1984.

Also, the Gantt Chart shows that the main activities in the SCDP are the dem-farms in each of the three kabupatens and the cropping systems research, primarily in Bone and Ponorogo Kabupantens. This was confirmed by the field visits of the evaluation team.

The training program has essentially not yet begun, though there have been some staff and farmer training programs for a week or two. Only one person has actually gone abroad for training.

The technical assistance is only 50% of what was planned to have happened by April 1986. Partly, this is due to the one year late start although the librarian was one of the SCDP's first activities. Based on the field visits, the technical assistance in South Sulawesi and East Java has been quite successful. The agronomy expert has made a major contribution to the program and has been deeply involved in the production expansion in Bone.

The problem with the technical assistance is that the Palawija Project Office has substantial difficulty managing this technical assistance. They are not set up for the types of management, financial control and reporting required by USAID for technical assistance.

Because of the problems involved in administering both the technical assistance and the implementation of the other activities, it is strongly suggested that any future activities in the extension have the assistance of a 'professionally qualified' technical assistance contractor. This company would minister the technical assistance and provide assistance to the entire project in administering and reporting on the SCDP to USAID. Only in this way can the conflicting regulations between the GOI and USAID be overcome and the requirements for reporting be satisfied. However, the technical assistance should only be grant funds because of the cost of this assistance and the difficulties associated with the use of loan funds for technical assistance.

In addition the cost of supporting the experts should not be borne by the Indonesian Government. Due to the recent decline in Government revenues in the last couple of years there is not sufficient funds in the DIP budget for supporting foreign experts. Thus, the contract for technical assistance should be a direct contract with USAID and not a host country contract. This

type of direct contract has recently been used for several other USAID projects and should also be used in the SCDP.

9.3. Recommendations for Implementation until April 1986 and for an extension until April 1991.

9.3.1. Extension of the SCDP. Although The Secondary Crops Development Project should be extended for an additional five year period which would extend until 1993 when the two remaining years of the project are added to this time frame.

The project has clearly been successful in its activities in the provinces, especially the extension program utilizing the dem-farms. In order to assist the Indonesian Government in the development of new extension concepts and implementation of these programs it is very important to continue the SCDP until 1991. Only in this way can the results be proven conclusively and the methoo of extending the improved technologies shown to be effective.

THe main reason that USAID should be providing support for the dem-farms is the importance of the concept that the dem-farms are the logical meeting place of the researchers, extension personnel, farmers and local government officials. At this meeting place the researchers can learn about the problems of the farmers and extension personnel and incorporate their production problems into the Balitans' research program. The researchers can inform and demonstrate the appropriate technologies being developed at the Institutes. Ideas among these three groups can be exchanged for mutual benefit. The extension personnel and the researchers can develop close working relationships based on this experience at the dem-farms. The local government personnel can learn about the progress of the programs for the local villagers. The researchers and extension personnel can learn about how to help the local government. It is extremely important to put as many resources from the SCDP as possible into encouraging these dem-farm meetings on a frequent, both planned and spontaneous, basis.

USAID should provide continued support to the SCDP because it is supporting the extension philosophy in Indonesia. This is the following:

1. Development of appropriate technologies at the Research Institutes;

2. Testing of these technologies by the Research Institutes at sites in the farmers fields;

3. Transferring the technologies to the Provincial Agricultural Service's extension personnel to be applied on dem-plots and dem-farms.

4. Expanding the dem-farms to a larger area to become dem-areas in cooperation with the BRI.

5. Adding the cooperative movement and creating KUDs from the dem-areas.

It is important for USAID to assist the GOI to move from the dem-farm concept to the dem-areas and then the KUDs. This requires more intensive use of the dem-farms in the original three kabupatens so that these can be demonstration kabupatens for the government. This also requires a medium long period (5 to 7 years) of support to adequately assist in the development of the dem-areas, dem-kabupatens and the KUDs.

An important aspect of this is the support that will be given to the very important national crash production programs for secondary crops. This has not yet been emphasized but should play an important part in the USAID assistance to the GOI.

By assisting this expansion and intensification, the USAID can provide support to the cooperative movement, assist the banks in their farmer credit programs, and support the crash kedele and crash jagung production expansion programs.

Although the cropping system with grain legumes has been very successful, it does not mean the time has arrived to discontinue support for the dem-farms. They have only begun to work on integrated pest management and appropriate responses to varied soil conditions. The crops will change depending on the prices. Improved technologies will be developed and need to be demonstrated. The meeting place will need to be encouraged until it has a sound foundation in the extension philosophy.

Private industry is only just beginning to have extension programs for agents and contact farmers and it is very important for USAID to continue supporting this effort.

In order to provide more support to the post harvest processing, storage and marketing of these secondary food crops, USAID needs to continue and intensify their support.

If the project is extended and there is more technical assistance, then it should be put out for bid so that the contractor can handle the many problems associated with the provision of experts to the project. It was felt they are still needed until more Indonesians are available for these technical positions.

Long term and short term technical assistance would be provided by a combination of an Indonesian consulting company and a U.S. consulting company. They would also on behalf of the SCDP manage the training program and assist the financial management of the SCDP which would include the past activities as well as the future program. The funding for the long and short term technical assistance would be USAID grant funds and the contract would be a direct USAID to the consulting companies in order to reduce the local cost of the technical assistance.

9.3.2. <u>Expansion of the SCDP.</u> The SCDP should be expanded in the

three provinces of Lampung, South Sulawesi and East Java to include from 1 to 3 additional kabupatens in each province. The SCDP should expand to at least one more province which should be NTT. The extension would make it possible to expand by an additional kabupaten each year and to initiate the work in the additional province.

The results of the dem farms in the three provinces are substantial and thus the momentum should be maintained by adding one to three more kabupatens to the SCDP in East Java, Lampung and South Sulawesi. In order to expand the coverage of the SCDP an additional province in Eastern Indonesia should be included in the program after the initiation of the expansion in South Sulawesi, East Java and Lampung. This province would be either NTB or NTT.

The program would be separated into two phases. Phase I would be for the new kabupatens in the SCDP which would be Ngawi, Madiun and Magetan in East Java; Wadjo and Soppeng in South Sulawesi; possibly one more in Lampung and one kabupaten in NTT or NTB. For this phase, as was planned in the beginning for the SCDP, twenty dem-farms per year for a three year period, would be established and then would possibly move into a Phase II in some of these kabupatens. In Phase II in Ponorogo, Bone and North Lampung the number of dem-farms would be increased by 20 each year until all of the desa have been included in the program.

The dem-farms should be for a one year period and depending on the recommendation by the Dinas Pertanian in each province in the SCDP would provide inputs for the entire cropping system in the demonstration. The East Java program would probably be for a one year full input program and thereafter only limited inputs. The South Sulawesi program would depend on the Dinas Pertanian if they feel it should be for a three year period of full inputs support for the dem-farms or a one year support program as in the other provinces. If it should be a three year period, then the numbers should be reduced by an appropriate number.

The inputs in the technology package should be seed, fertilizer, pesticides, and herbicides. Seed and innoculum only should be provided for the second and third years of the dem-farms. Power threshers and water pumps should be considered for the technology package and would depend on the decision of the Dinas Pertanian at the Province level. The inclusion of cattle and post harvest tools should be flexible and decided by the Dinas Pertanian in each province. Guidelines should be prepared by each Dinas Pertanian for the management of the revolving fund for each Kelompok that has a dem-farm. Training of the PPLs and farmers should be continued and field days held at each dem-farm.

In Ponorogo a few selected successful dem-farms should be encouraged to become dem-kelompoks. To accomplish this a few limited inputs would be provided to the kelompoks. This would be a test of a concept for a possible Phase III where the dem-farms expand to dem-kelompoks.

A number of extension approaches shbuld be tested for their effectiveness in each province. They should be sponsoring more than just the dem-farms. It is important to give assistance to the Balai Informasi Pertanian in preparing appropriate audio-visual extension support materials; pretested, well-designed pamphlets, flip-charts, posters, and slide materials; local radio and television spots and programs in the regional languages; and incentives and promotions through private sector networks. In addition they should have more field days for farmers to observe the results of the dem-farms. Funds should be made available for production of materials. Trips among the provinces for the contact farmers should be sponsored.

9.3.3. Revision of the Goals of the SCDP. The original goals of the SCDP were "(a) to increase the production of secondary crops by about 15% - 30%, (b) to improve the marketing system of secondary crops, (c) to increase household consumption by 10% - 15% and improve nutritional status of target groups, (d) to increase employment by 20% - 30%, and (e) to increase farm income by 20%. In the extension of the SCDP the goals should be more realistic and more achievable. The revised goal would be the development of appropriate strategies for the transfer of improved technologies from the research institutions using an integrated extension approach to the farmers for food crop diversification.

9.3.4. Major Responsibilities (if SCDP is Extended) of Each Organization Working with the SCDP. The Directorate of Production is responsible for the Palawija Development (Pengembangan Palawija) Program which has been included in the SCDP's DIP for the first time in the 1986/87 fiscal year. This is a major portion of the SCDP's program, is the primary source of counterpart funds from the BRI, and is not part of the loan funds from USAID. As shown in the revised goals this program is the next logical step after the testing and extension activities in the SCDP.

The Directorate of Food Crop Economics would have major programs on (1) a market information service, (2) supply and demand studies, (3) marketing studies, and (4) quick studies for assisting immediate policy issues.

The Directorate of Extension in cooperation with the Dinas Pertanian in the three provinces would be jointly responsible for the SCDP's dem-farms and for the development of various extension approaches to be tried by the SCDP.

The Dinas Pertanian in each of the provinces would be directly responsible for dem-farms in each province and the provision of the inputs to these dem-farms.

The Bogor, Malang and Maros Research Institutes for Food Crops would be responsible for the applied farm research on or adjacent to some of the Dem-Farms. They would continue their research program at the present sites in the three kabupatens, would set-up research sites at some of the dem-farms in cooperation with

the Dinas Pertanian and extend the technologies to similar agroecosystems in the new kabupatens in the extended SCDP.

9.3.5. Strengthening the Project Implementation Unit. The SCDP has been hampered by the lack of a full time head of the PIU and a full time staff. An experienced Indonesian official should be appointed to be the full-time head of the SCDP. He should be assisted by a full-time staff, including officials, secretaries and other staff members. They should be provided with sufficient incentives that they can in reality allocate their full time only to the SCDP. If there is not a full time staff, then USAID should consider discontinuing the project.

9.3.6. Location of the Project Implementation Unit. The Palawija Project Office (PIU) of the SCDP is located at the Directorate Bina Produksi. At the time of the formation of the SCDP the Directorate of Extension did not yet exist. Therefore, the Directorate of Production was made responsible for the demonstration farms which were a major part of the SCDP. However, the Directorate of Extension was created in 1983 and was assigned the responsibility for extension programs which includes the dem-farm concept.

Since extension is the primary role of the Directorate of Extension and the goals of the SCDP have been changed, the Directorate of Extension should be more deeply involved in the SCDP.

The entire evaluation team of six members believes that the Directorate responsible for the SCDP should be reviewed to determine if the Palawija Project Office is best located at Directorate of Production or some other location within the Directorate General of Food Crop Agriculture. This would be a joint decision by the Director General of Food Crop Agriculture and USAID.

9.3.7. Long Term Technical Assistance. The long term technical assistance team would be composed of the following positions, be either expatriate or Indonesian and located at the specified institutions.

Project Implementation Unit

1. Planner and Management Expert with advanced degree in extension, economics or public administration who would be the Technical Team Coordinator.

2. Administrative specialist with experience on USAID projects and knowledge of the reimbursement requirements of the GOI and USAID.

3. Monitoring and Evaluation Expert with advanced degree in agricultural economics who would assist the analysis of the dem-farms and the applied on-farm research.

BINUS

4. Economist with research experience in supply and demand analysis and policy oriented research.

5. Marketing Information Systems Specialist .

Directorate of Extension

6. Agricultural Extension/Communications Specialist.

Dinas Pertanian Province

7. Extension Specialist with advanced degree in agricultural communications and training, stationed in Lampung, with the Dinas and traveling on a regular basis to the other three provinces.

8. Extension Specialist with advanced degrees in entomology and plant pathology and experience in pest management extension systems stationed in East Java with the Dinas and traveling on a regular basis to the other three provinces.

9. Extension Specialist with advanced degrees in agronomy and soil science and who would be stationed in South Sulawesi and have a joint appointment with the Balitan Maros and the Dinas.

10. Extension Specialist with advanced degree in agronomy, who would be stationed in NTT or NTB.

9.3.8. Short Term Technical Assistance. Short term (Indonesian) technical assistance would include experts in entomology, plant pathology, agronomy, farming systems, macro economics, computer science, farm management economics, rural sociologists, extension, communications, marketing economists, project administration, accounting and bookkeeping. This would be provided by the joint Indonesian and Foreign consulting companies and would be to assist the applied agricultural research, the dem-farms, social and economic studies, extension of improved technologies, and project administration. The funds for the short term Indonesian experts would be grant funds paid directly by USAID to provide assistance to various aspects of the SCDP. They would be consultants from AARD, the Universities and other sources.

9.3.9. Project Management. A yearly workshop in September of each year attended by all relevant participants would be held to design the detailed program for the direct USAID funded programs. This plan would be prepared each year and submitted to USAID for their concurrence. USAID would issue a single PIL covering this program. A bank account for each program would be setup and funds for 90 days of operation deposited by USAID and renewed at the submission of the expenditures for that period. The contractor consulting companies would assist the management

of these funds.

At the above yearly workshop in September a detailed plan for all of the prefinanced/reimburseable programs and the direct GOI funded programs would be prepared and submitted to the PPO for the DUP and DIP budgeting process and the sub-projects would be clearly specified, the head of the sub-project designated as the responsible officer for the funds and these funds would be earmarked for each specific project. The ROP would be prepared based on these detailed plans and the DIP and funds would be clearly earmarked in this document.

In order to bridge the gap between the present technical assistance and the technical assistance in the extension of the project, William Ruscoe should be extended for a six month period beyond his present contract.

The head of the SCDP must immediately take steps to reconcile the reimbursement of the past prefinanced activities and to determine what funds have and have not been used by the SCDP. An accounting of the financial and administrative status of the SCDP should be made as soon as possible. The administrative specialist in the long term technical assistance would assist in the reconciliation of the reimburseable and direct USAID funds of the past and provide assistance in the future.

The specific components of the SCDP and the institution responsible for the components would be the following:

a. Applied On-Farm Research and Farm Management/ Farming Systems economic research by the AARD;

b. Dem-Farms by the Dinas Pertanian in each province in cooperation with the Directorate of Extension;

c. Palawija Development (Pengembangan Palawija) Program by the Directorate of Production

d. Extension programs by the Directorate of Extension;

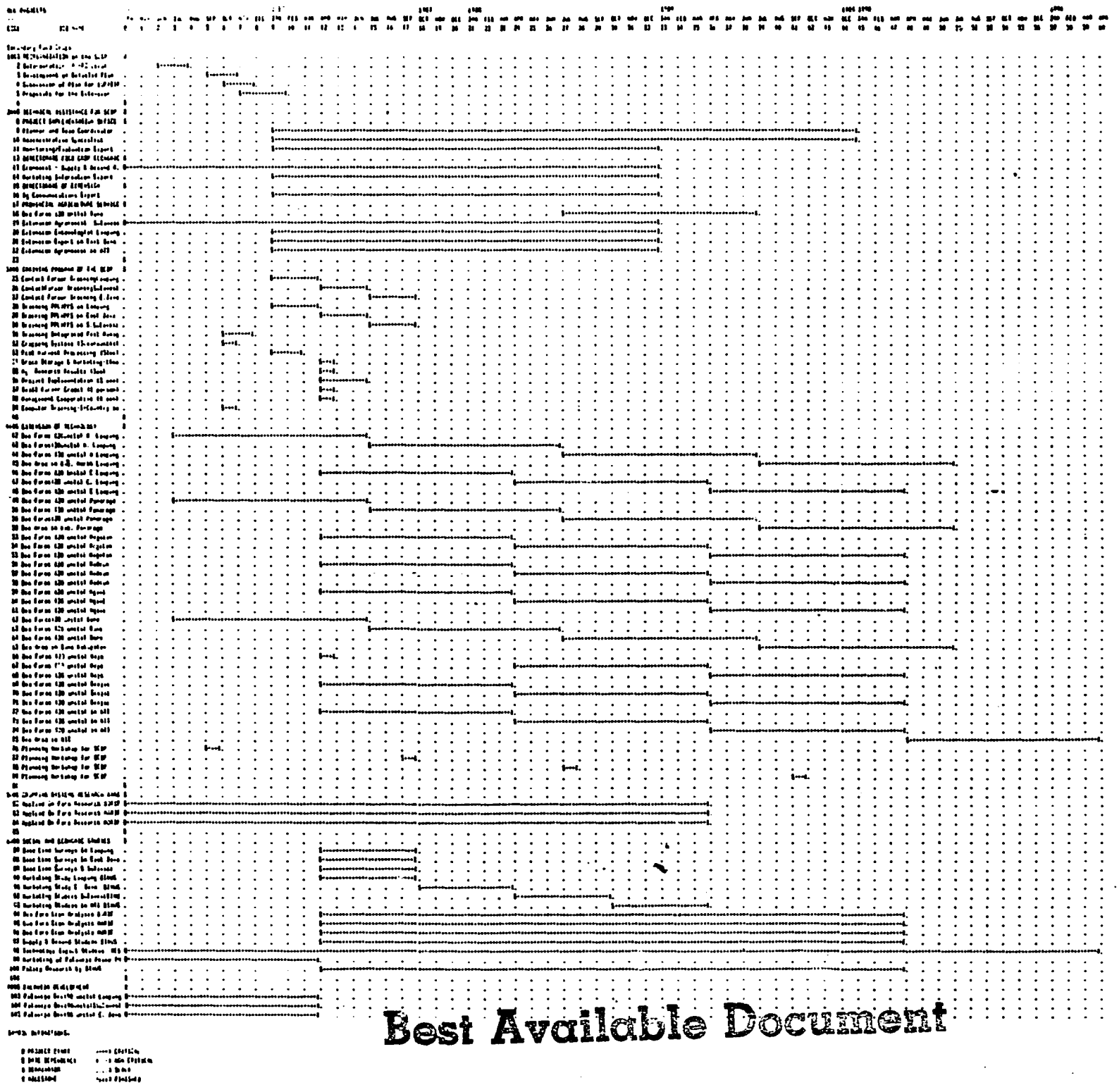
e. Training of the PPS and PPM by AAETE;

f. Technology impact studies by the Agro Economic Survey Foundation.

g. Supply and demand studies, marketing studies, and the marketing information service by BINUS;

h. Project planning, budgeting, monitoring, administration and bookkeeping by the PIU.

i. Long term and short term technical assistance and training in-country and abroad by the joint Indonesian and Foreign Consulting Companies.



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The administration of the project should be the following:

a. locate the project in the Directorate General of Food Crops.

b. Dem-Farm funds directly to Dinas Pertanian in the province, then to Dinas Kabupaten.

c. Applied research funds direct from USAID to the Director of CRIFC.

d. Earmarked DIP funds.

e. Expert in each province but on-call to others.

f. Dem-farms and test plot on same site. Meeting grounds of the researchers and extension personnel.

g. USAID funds direct to BINUS and the AES Foundation.

9.4. Financial implementation by April 1, 1986

In order to have an understanding of what has occurred in the project the best picture is one of the financial budgets and expenditures for the project and compare this with the financial plan in the original Project Paper. This section will attempt to provide a financial analysis of these topics. However it should be noted that after a close inspection of the available information to the Evaluation Team it was realized that understanding the financial situation would be impossible. After discussions with USAID, it was decided that only a very rough look at the financial situation would be attempted.

As the financial record keeping was examined, it became very clear that nobody really knew how much were the expenditures, how much was not expended but planned, and how much of the reimburseable expenditures had been processed, submitted and actually reimbursed. The problem is a lack of understanding on the part of the Palawija Project Office about the types of reporting required by USAID. A lack of understanding by USAID on how to assist the Project Office in financial management and reporting, and a lack of understanding by both the Project Office and USAID in the process of reimbursement. This must be cleared up very quickly before everyone loses control of the financial accounting of the SCDP.

Table No. 6.1. DIP Budgets by Years ($)

Item	83/84 (970)	1984/85 (1000)	1985/86 (1100)	1986/87 (1100)	TOTAL

Prefinancing	185,812	440,493	472,509	494,391	1,593,205
Direct pay.	135,521	398,566	1,013,896	1,648,775	3,196,758
Direct Credit BRI					
GOI					
TOTAL					4,789,963

Table No. 6.2. Planned Expenditures in the Project Paper ($'000)
1983 - 1987

Items	AID			GOI	Total
	FX	LC	Total		
Tech. Assist.	1,756	-	1,756	-	1,756
Training	343	399	742	641	1,383
Personnel	-	-	-	582	582
Operational Support	864	1,908	2,772	-	2,772
Commodities	-	-	-	4,036	4,036
Contingency & Inflation	680	450	1,130	1,032	2,162
TOTAL	3,643	2,757	6,400	6,291	12,691

Table No. 6.3. Planned Expenditures in the Project Paper ($'000)
From March 1983 to December 31, 1985

Items	AID			GOI	Total
	FX	LC	Total		(1983 to 86)
Tech. Assist.	1,027	-	1,027	-	1,027
Training	343	399	742	641	1,383
Personnel	-	-	-	349	349

Operational Support	533	890	1,423	-	1,423
Commodities	-	-	-	1,337	1,337
Contingency & Inflation	457	248	705	457	1,162
TOTAL	2,360	1,537	3,897	2,784	6,681

Table No. 6.4. Actual Expenditures by the SCDP by Years ($)

Item	1983/84 (970)	1984/85 (1000)	1985/86 (1100)
Tech. Assist.	50,591		
Training	31,443		
Personnel (project admin.)	12,954	8,192	
Operational Support	143,138		
Commodities	-		
Contingency & Inflation	-		
TOTAL	238,126		

The head of the SCDP must immediately take steps to reconcile the reimbursement of the past prefinanced activities and to determine what funds have and have not been used by the SCDP. An accounting of the financial and administrative status of the SCDP should be made as soon as possible. The administrative specialist in the long term technical assistance would assist in the reconciliation of the reimburseable and direct USAID funds of the past and provide assistance in the future.

Incentives of some type should be given to the persons doing the work at the kabupaten, province and national levels for SCDP supported programs.

The Steering Committee for advising on policy of the SCDP would be made up of the Directors of the various institutions in the Project and the Committee would be provided with sufficient funds to meet on a regular basis. The Technical Team would be eliminated since the PIU would have sufficient staff to take over this function.

Based on the available information the funds promised by the GOI

as their share of the SCDP is much below the planned amount. However, the total did not take into consideration the in-kind items provided to the SCDP by the GOI. Since it was impossible to determine the amount already provided by the GOI and the amount planned in the present fiscal year, it is very highly recommended that an accounting by the GOI of its provision of funds and in-kind support be made as quickly as possible.

9.5. Planning and Policy Making Apparatus

The Steering Committee for advising on policy of the SCDP would be made up of the Directors of the various institutions in the Project and the Committee would be provided with sufficient funds to meet on a regular basis. The Technical Team would be eliminated since the PIU would have sufficient staff to take over this function.

USAID would train the staff of the various institutions in the SCDP on how to report on expenditures for direct payments and how to request reimbursement. USAID creates part of the problem because they do not give adequate assistance on how to carry out the reimbursement.

A coordinating body would be established at the provincial level to manage the cooperation between the Dinas Pertanian and Balitan Maros. Their actual budgets must be separate and earmarked for their use, but the coordinating body could approve the joint program.

A coordinating body would be established at the provincial level to manage the cooperation between the Dinas Pertanian and Balitan Maros. Their actual budgets must be separate and earmarked for their use, but the coordinating body could approve the joint program.

9.6. Training Program Management (in-country and abroad)

The training program should be clearly specified for the seven year period and specialized courses given by staff of the Balitans. Priority should be given to the training of the PPS and PPL.

A Training Center for PPLs and Contact Farmers should be set up in Ponorogo at the Agricultural High School funded by the World Bank. This training center would provide instruction to the PPLs and contact farmers in the new kabupatens in the SCDP in East Java and perhaps the other provinces. Funds would be provided for preparation of materials, design of the program, incentives for the teachers and travel and per diem for the PPLs and Contact Farmers.

9.7. Monitoring of project activities

The Palawija Project Office has not been adequately monitoring the progress of the SCDP. It is very important to know what has occured, is occuring and will occur in both the physical

activites and the financial expenditures. One of the technical experts stationed in Jakarta along with a staff member of the Project Office should initiate a careful accounting of all the SCDPs past activities and begin to immediately monitor the present activities. This information should be in a data base on the micro computer at the Project Office for rapid reporting on the project.

APPENDIX A
PERSONS CONTACTED BY THE EVALUATION TEAM

USAID Jakarta

Mr. Richard Cobb	Chief, Agriculture and Rural Develop[illegible]
Mr. Jo[illegible]	
Ms. Joanne Hale	Project Officer, Agriculture and Rural Development
Mr. James [illegible]	
Mr. James Gingerich	Agriculture & Rural Development
Dr. [illegible]	Agriculture & Rural Development
Dr. Tim Mahoney	Program Office

Mr. Roely Lekahena	Agriculture & Rural Development

Ministry of Agriculture in Jakarta

Dr. Sjarifuddin Baharsja	Secretary General
Ir. Suhaedi Wiraalmaja	Director General, Directorate General of Food Crops Agriculture
Ir. D. A. Sihombing	Director, Directorate of Production Development, Directorate General of Food Crops Agriculture
Ir. Korsi Sebayang	Head, Palawija (SCDP) Project Office
Ir. Dady Ganda Sukaryo	Director, National Food Crops Extension Project, Directorate for Extension, Directorate General of Food Crops Agriculture
Ir. Soegianto	Director, Directorate for Food Crops Economics
Ir. Soelbiati	Director, Directorate of Program Development, Directorate General of Food Crops Agriculture
Dr. Budiman	Staff, Directorate of Program Development
Ir. Soepani	Subdirector, Market Information, Directorate for Food Crops Economics
Ir. Bambang Adimigroho	Section Head, Directorate for Food Crops Economics
Ir. Djidji	Subdirector, Directorate for Program Planning, Directorate of Program Development (Bina Program)
Ir. Sam Pakpahan	Staff, Directorate for Food Crops Economics, and ex-team leader of SCDP

Bogor and Jakarta

Dr. Soedrajat	Senior Staff, Agency for Agricultural Training, Education and Extension, and

	Member, Steering Committee of the SCDP
Drs. Fauzi	Senior Staff, Department of Cooperatives and, member of the Steering Committee of the SCDP
Ir. Soeciptadi Sutarman	Senior Staff, Directorate of Extension, and member of the Steering Committee of the SCDP
Ir. Kasmo	Senior Staff, Directorate of Plant Protection and member of the Steering Committee of the SCDP
Dr. B. H. Siwi	Director, Central Research Institute for Food Crops
Dr. Sridodo	Staff, Central Research Instiute for Food Crops
Dr. Sutjipto	Head, Agronomics Section, Bogor Research Institute for Food Crops
Mr. Inu Gandanu, B.Sc.	Researcher, Farming Systems, Bogor Research Institute for Food Crops
Ir. Chrisman Silitonga M.Sc.	Director, Agency for Research, National Logistics Bureau (Bulog)
Mr. Bert van den Bergh	Country Manager Indonesia, Eli Lilly Canada Inc.
Dr. Rudolf Sinaga	Bogor Agriculture University, and Director, Agro-Economic Survey
Ir. Gunawan Wiradi	Senior Researcher, Agro-Economic Survey
Dr. S. Lampe	FAO Project Manager, Secondary Food Crops Project
Mr. Alain Voes	FAO Secondary Food Crops Project
Mr. D. Trenker	German Agency for Technical Cooperation, Project Manager for Seeds II.

<u>Lampung Province</u>

Ir. Thamrin Bastari	Head, Provincial Agricultural Service
Ir. Maramis	Section Head, Production of Secondary Food Crops, Provincial Agricultural Service
Mr. Haryadi	Production of Secondary Food Crops Section
Ir. Marlian	Section Head, Guidance of Farmer Groups
Ir. Rita	Guidance of Farmer Groups Section
Mr. Senggono	Production Matter Specialist, (PPS) Kabupaten Lampung Utara
Ir. Djoko	Head, Provincial Research, Center for Food Crops (BPT), Pekalongan, Lampung
Ir. Soekirno	Division Head, Food Crops Economics, Provincial Agricultural Service

<u>East Java Province</u>

Ir. S. Kadiono	Head, Provincial Agricultural Service of East Java
Ir. Imam Muslim	Head, Production of Secondary Food Crops Section, Provincial Agricultural Service, and Coordinator of SCDP in East Java
Ir. Soeginato	Provincial Agricultural Service of East Java
Drs. Wagiono	Head, Marketing Section for Food Crops, Provincial Agricultural Service
Ir. Maruf Quribian	Marketing Section
Ir. Iman Soejarwo	Head, Kabupaten Agricultural Service in Ponorogo Kabupaten
Dr. Sutaryo Brotonegoro	Director, Malang Research Institute for Food Crops
Ir. Marwoto, M.Sc.	Malang Research Institute for Food Crops
Drs. Achmad Ghozi Manshuri	Malang Research Institute for

	Food Crops
Dr. Iksan Semaoen	Head, Research Center, Brawijaya University
Ir. Moch. Muslich Mustadjab	Staff, Brawijaya University
Ir. Masrofie	Staff, Brawijaya University
Ir. Budi Setiawan	Staff, Brawijaya University
<u>South Sulawesi Province</u>	
Ir. Radjagaoe A. Basir	Head, Provincial Agricultural Service of South Sulawesi
Dr. Farid Bahar	Director, Maros Research Institute for Food Crops
Dr. Halide	Director, Research Institute Hasanuddin University
Ir. Saleh Pandan	Head, Agronomy Section, Maros Research Institute for Food Crops
Dr. Mansur Lande	Senior Staff, Maros Research Institute for Food Crops
Dr. Rudi Gani	Senior Staff, Hasanuddin University
Mr. Nur Usman	Head, Kabupaten Agricultural Service in Bone Kabupaten
Mr. Asikin	Extension Subject Matter Specialist, Bone Agricultural Service

APPENDIX B

SCHEDULE FOR THE EVALUATION TEAM

Monday, April 14: Jakarta

10:00 - Meeting with Dick Cobb at USAID

14:00 - Meeting with Ir. Hidayat, Director, Directorate Penyuluhan, DG Tanaman Pangan

Tuesday, April 15: Jakarta

11:00 - Meeting with Dr. Sjarifuddin Baharsjah, Secretary General, Ministry of Agriculture

- Meeting with FAO/Vaes & Lanpre

- Meeting with staff at Seeds II

- Meeting with PPO Staff

Wednesday, April 16: Jakarta

- Meeting of the Team for determining list of questions for officials and farmers in the three provinces

Thursday, April 17: Jakarta

- Meeting with Bina Program (Ir. Sulbiati, Dr. Budiman)

- Meeting with staff of BINUS (Soegianto, Soepani Sam Pakpahan)

- Meeting at Sub-dit Pasca Panen (Dr. Soedjamiko)

Friday, April 18: Jakarta

- Meeting at BULOG with Dr. Krisman Silitonga and Ir. Anas Rachman.

- Meeting at BPLPP with Dr. Soedradjat & Ir. Miriam

Saturday, April 19: Bogor

- Meeting with Dr. B. H. Siwi, Director, Central Research Institute for Food Crops

- Meeting with Dr. Ismunadji, Director, Bogor Research Institue for Food Crops

- Meeting at Yayasan SAE with Dr. Rudolf Sinaga and Ir. Gunawan Wiradi

- Meeting at ESCAPE with Dr. Irlan Soejono

Sunday, April 20: Team separates into two groups. Collier and Sadikin to Ujung Pandang. Reksodinmuljo, Juntermanns and Tabor to Lampung.

	South Sulawesi Team	Lampung Team
Monday, April 21:	Meet with Dinas, Balitan Maros, UNHAS	Meetings in North Lampung
Tuesday, April 22:	Travel to Bone Meet with Pak Nur Usman	Meetings in North Lampung
Wednesday, April 23:	Meetings in Bone	Travel to Tanjung Karung

Thursday, April 24:	Travel to Ujung Pandang	Travel to Jakarta
Friday, April 25:	Meetings in Ujung Pandang	Meetings in Jakarta
Saturday, April 26:	Return to Jakarta	Meetings with officials

Monday, April 28: Review of visits in Lampung and South Sulawesi Team joined by Tabor and Ruscoe.

Tuesday, April 29: Travel to Surabaya. Meetings with Dinas Pertaninan, others involved with the Project.

Wednesday, April 30: Team separates. Collier, Reksodimuljo and Ruscoe to Ponorogo. Juntermanns, Sadikin and Tabor to Malang. Meetings at UNIBRAW with Dr. Iksan to reveiw research.

Thursday, May 1: Ponorogo Team visits sites and meets farmers and officials. Malang Team has meetings at Balitan Malang.

Friday, May 2: In the morning have meetings in Surabaya and Malang. Afternoon flight to Jakarta.

Saturday, May 3: Discussions on the East Java visit. Team members, Tabor and Ruscoe.

Monday, May 5 to Sunday May 10: Analysis and Report Writing.

Monday, May 12: Meeting with Directorate of Food Crops Production and the PPO on the Draft Report.

Tuesday, May 13: Meeting with USAID and other interested persons on the results of the evaluation.

Wednesday, May 14: Meeting of the Team to discuss meetings at Directorate, PPO and USAID. Final decisions on changes.

Thrusday, May 15: Final Report Writing.

Friday, May 16: Team is finished. Collier spends one week editing final draft

APPENDIX C

PROPOSED PLAN FOR THE IMPACT MONITORING BY THE AGRO-ECONOMIC SURVEY

APPENDIX C

YPSAE/RSS/GWR/5/86

PROPOSED LONG-TERM WORK PLAN FOR THE AGRO ECONOMIC SURVEY UNDER THE GOI/USAID SECONDARY FOOD CROPS DEVELOPMENT PROJECT

PROPOSED LONG-TERM WORK PLAN FOR THE AGRO-ECONOMIC SURVEY UNDER THE GOI/USAID SECONDARY FOOD CROPS DEVELOPMENT PROJECT

BACKGROUND

The development of effective strategies for food crop diversification will require the collective efforts of many specialties. Agronomists will be called upon to develop technology packages suited to the varying agro-climatic conditions in the countryside. Entomologists will be called on to devise means of protecting the crips from pest and disease outbreaks. In that same vein, economists and sociologists will be asked to evaluate the new technologies to determine the socio-economic suitability and impact of the induced innovations.

Under the Secondary Food Crops Development Programme, a multi-disciplinary approach is being used to promote food crop diversification in selected Provinces. Within the project, new cropping patterns and extension approaches are being introduced in oder to increase farmer's income, employment opportunities and nutrition levels. It is important that the process of technological transformation be carefully monitored and adjusted so that the most effective system for diversifying food crop technology is utilized.

The Agro-Economic Survey is an established institution with the proven ability to conduct detailed socio-economic surveys in rural areas. In 1986 the Agro-Economic Survey was first invited to conduct a technology impact study under the auspices of the Secondary Food Crops Development Project. The aim of that study is to evaluated the impact of the secondary food crop technology packages on the farm community. This will involve assessing the suitability of the technology packages in the target farm communities and assessing the extent to which the induced technological change is suistainable after project interventions are removed. The study will also identify the constraints to technological diffusion in the target community and suggest means by which those constraints can be overcome within the context of the SCDP project. In addition, the study will produce a locally adoptable methodology for evaluating the impact of newly introduced technology packages. It is expected that this methodology can be employed by the agricultural extension service in the project kabupatens so that they can conduct ongoing impact monitoring programs.

PROPOSED WORK PROGRAMME

It is proposed that the Agro-Economic Survey actively participate in evaluating the impact of new technology packages introduced at the farm level and that the Survey provide training for extension agents in methods and techniques appropriate for technology impact monitoring.

The aim of these studies is twofold. The first aim is to provide a rigourous source of impact monitoring information that can be used by the SCDP steering committee to alter or correct the technology diffusion systems utilized in the project. The second aim is to develop the indigenuous capability to conduct socio-economic impact evaluations on the part of the Provincial extension service and to demonstrate the unsefullness of this form of work to the local extension agents.

The Agro-Economic Survey will conduct a technology impact study in each of the three or proposed four project provinces. These studies would be aimed at (1) identifying the impact of project induced innovations on ongoing demonstration farm participants: former demonstration farm participants and impact area farmers (2) identifying constraints to adoption of improved secondary crop technology and (3) providing recommendations for means of overcoming those constraints and means of improving the diffusion process so as to conform to conditions prevailing in project areas. Following each of these studies, a seminar would be held with representatives from the Provinces and the SCDP Steering Committee. The aim of this seminar would be to discuss the study findings in the context of identifying measures to improve project implementation and in the context of identifying policy matters that require national level attention.

After a survey has been completed in the Province, the Agro-economic Survey staff will conduct a training course for Provincial extension agents in technology impact assesment methodology. The following year, the ectension agents will be expected to conduct a technology impact assesment of their own, under the guidance and supervision of staff from the Agro-Economic Survey. The findings from the survey conducted by the extension service will be reviewed at the annual SCDP project meeting. This will provide a useful forum for comparing results from the previous year's assesment and for making management improvements based on the survey findings. In subsequent year's, small-scale impact evaluation surveys will be conducted by the Provincial extension service and the results from these surveys will be reported on as part of the annual SCDP project review meeting.

This cycle of impact studies followed by training followed by supervision of locally conducted impact studies will continue until each Project Province has developed the indigenuous ability to execute these assesments. After each individual study, a meeting of Provincial officials and SCDP steering committee members will be held, as suggested above. In addition, after each Province is autonomously conducting the impact studies, a major review meeting will be held. At this review meeting, the findings from the impact studies in each Province will be compared.

The primary purpose of the major review meeting will be to indentify means of perfecting the use of the technology impact assesment as a management information tool for technology diffussion programs.

The Agro-Economic Survey will maintain an office and full time staff in Bogor for the duration of this research program. It is expected that this work will be closely supervised by a group of leading Indonesian socio-economic experts. In addition, it is expected that the SCDP project will provide technical guidance and assistance to this research activity. The Agro-Economic Survey will work closely with the Directorate of Extension, Directorate General of Food Crops, to ensure a close linkage between the research effort and the development of appropriate tools for ongoing project management.

PROPOSED BUDGET

The cost of the proposed work plan for the Agro-Economic Survey is based on a proposed cycle of (1) Survey, (2) Training, (3) Followup Control Surveys in each of the project Provinces. It is estimated that a total of two months of field work and training per year would be required. In addition to this, one month of field training and control activities would be beeded to catalyze impact-monitoring activities in the SCDP Provinces. A proposed schedule and indicative budget is as follows :

	ACTIVITY	COST ($ '000)
YEAR I :	Technology Impact Survey (TIS) in East Java	55
	Impact Survey Training (IST) in East Java.....	75*
YEAR II :	Impact Survey by Extension Service Pilot Test and Control, in East-Java (Follow-up Control Survey = FCS).....	20**
	TIS in South Sulawesi	55
YEAR III :	IST is South Sulawesi	75*
	FCS in South Sulawesi	20**
YEAR IV :	TIS in Lampung	55
	IST in Lampung	75*
YEAR V :	FCS in Lampung ....,.....	20**
	Major External Review and Evaluation of Impact Survey Findings....	50
	Total Estimated Cost .....$ 500,000	

A detailed plan of operation will be prepared upon formal request of the SCDP project management.

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* Trainees' expenses included

** Trainees' expenses not yet included.

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APPENDIX D
KEY QUESTIONS PREPARED BY THE EVALUATION TEAM AT THE BEGINNING OF THE ASSIGNMENT

KEY QUESTIONS FOR EACH COMPONENT
(Developed in Discussions on April 16)

I. Cropping Systems Research component

1. How is the cropping systems research formulated to examine the issues in the relevant agroecosystems.

    a. Should this applied research be in the cropping systems section at the Balitans. Does this limit the types of research carried out by the researchers.

b. How can more research be done on insect and disease problems which would be conducted by scientists in different sections at the Balitans.

2. Is the management (financial and administrative) system performing adequately to effectively carry out the cropping systems research.

   a. Directing the research.

   b. Funding the research.

   c. Planning for future research.

   d. Using the results of past research.

3. Is the cropping systems research adequately examining the economically optimum input levels for the various agroecosystems in each of the three kabupatens.

4. Are the results of the cropping systems research being used in the dem-farms.

5. Do the researchers receive sufficient funds in a timely manner to do the cropping systems research. Have the Balitans been paid for their past research.

6. What are the major constraints on palawija crop production in each kabupaten. What applied research should be supported by the SCDP in the future to examine these constraints. Who should do this research.

7. Do the researchers and extension personnel cooperate on the dem farms and the test plots at the farm level. Is there adequate communication between the two groups for the design of relevant applied research at the Balitans.

8. Who at the kabupaten level is responsible for, who is managing and who is doing the work on the research trials (percobaan) and the dem farms. Who actually handles the funds to pay for these activities.

II. Extension of Improved Technology

1. What are the linkages (forward and backward) between the research trials (percobaan) and the dem-farms; and what are the linkages (forward and backward) between the dem farms and development programs (crash soybeans, KUD, Bimas, etc). How can these linkages and the system be improved. Should the SCDP support this activity in the future.

2. What are the most suitable extension systems and the most productive methods for transfering the research results to the farmers What are the most appropriate systems and methods for SCDP support in the future?

3. How are the dem farms managed (planning, administration, actual operation, monitoring and evaluation) in each kabupaten. What constraints do these dem farms face in each kabupaten. How and by whom should the SCDP supported dem farms be managed in the future.

4. What has been the impact of the dem farms on the farmers (in the dem farm and outside the dem farm) incomes and production in each kabupaten.

5. Do the dem-farms receive too much funds for an appropriate level of inputs and does the revolving credit program function properly.

6. What type of post harvest activities have been in the past and should be sponsored in the future by the SCDP in the kabupatens. Who should manage these programs.

III. Social and Economic Studies

1. Who formulated the research questions, objectives and methodology in these social and economic studies and how do these studies fit into the overall goals of the SCDP.

2. Have basic scientific procedures been adequately followed to ensure a reasonable degree of reliable results in these studies.

3. How have the results of these studies been used in the SCDP, the Directorate, and other institutions.

4. How are the researchable questions identified and by whom and at what levels in the project?

5. Have the university staff members doing these studies spent an adequate amount of time conducting the research. How long were they in the field and how much effort put into data analysis.

6. Is the direct payment for this research a useful model for the other components in the SCDP.

7. What topics should be researched in the future, who should do the work and how should it be funded.

IV. Planning and Project Implementation

1. Is it possible to implement an inter-ministeral (six ministeries, 3 universities, and many directorates) project or should the project be in only one institution?

2. How can the experience of the project in the three kabupatens be used in decision making at the central office of the project in Jakarta?

3. How can the project be assisted in processing of the requests reimbursement for activities during the last three years? Can several persons be hired on a short term basis to work on the reimbursement?

4. Can a full time project implementation unit be set up to manage the project?

5. What incentives can be provided to the PIU staff to work full time on this project?

6. Has the situation of 4 Team Leaders in three years affected project management and activities?

7. Should the activities of the project be expanded and who (directorates) should carry out these new or expanded activities?

8. How can the administrative and financial management of the project be improved?

9. How can coordination between the project and USAID be improved?

10. Do USAID regulations make management of the project more difficult?

11. Should major activities be directly funded by USAID and not channeled through the Project Office?

12. How can training needs be identified based on the experiences in the provinces and with the various activities outside the Project offfice?

13. Would it be possible to plan, in cooperation with those persons in the three provinces assisting the project, the training program on a yearly basis so that it is not necessary to have a PIL for each activity?

14. What new training programs should be undertaken by this Project?

15. How much of the promised GOI local funding has been used for this Project? What percentage of the USAID and the GOI funds have been expended and what was planned in the beginning and how much has actually

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been used?

16. Is it possible to carry out a complicated project like this one without a full time, motivated Project Implementation Unit? Although the funds are not as large as the AARP it is designed in such a way to be very complicated and needs some leadership?

17. Have the following inputs been achieved on schedule:
    1. technical assistance (171 person months)
    2. training (98 person months abroad and 580 person months in-country)
    3. personnel (1200 person months)
    4. other operational support (cropping systems research, special studies, baseline and evaluation surveys, monitoring, credit by BRI, inputs from GAMA of rhyzoboium inoculum, fertilizer, seeds).
    5. commodities.

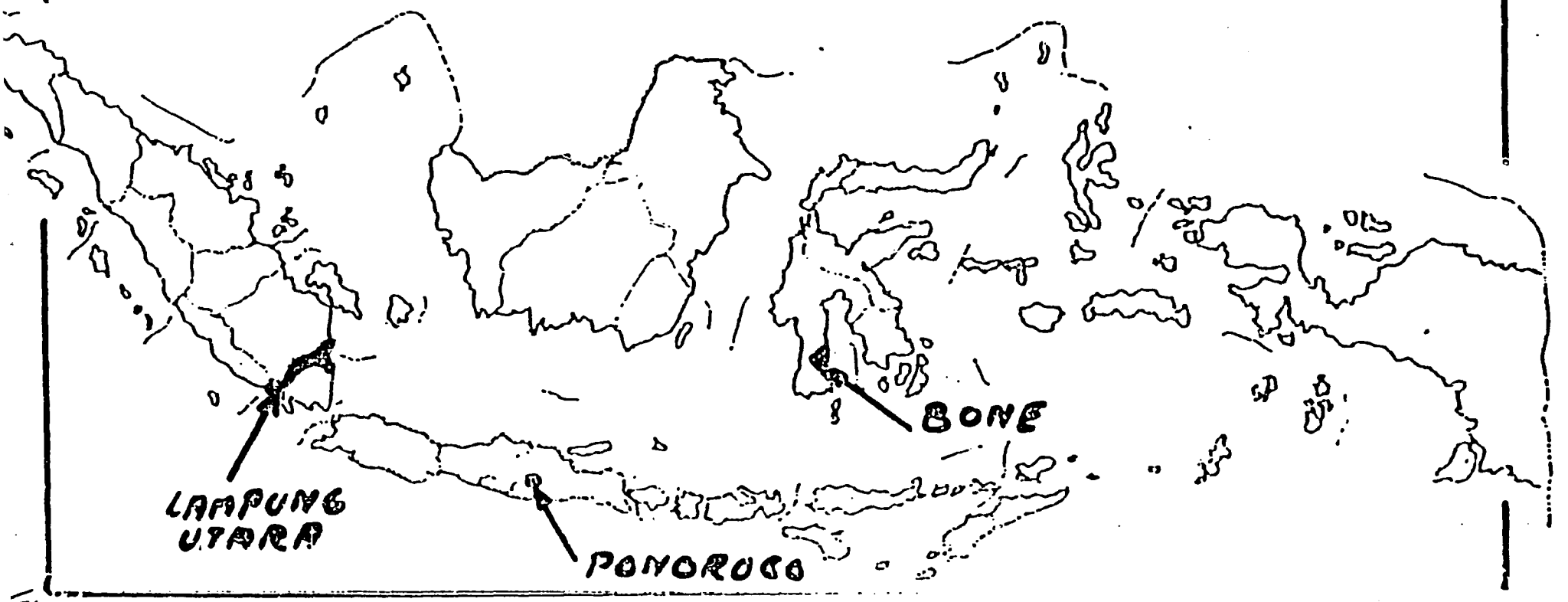
18. How much of the planned outputs have been achieved:
    1. Palawija Project Office;
    2. Six Field Teams;
    3. trial demonstration farms (162) and intensification farms;
    4. trained extension and KUD staff, private dealers and contact farmers;
    5. Special studies;
    6. Commodities, and
    7. Experiments and trials.

19. USAID is interested in NTB and Lombok. Should the Palawija Project be extended to these Provinces?

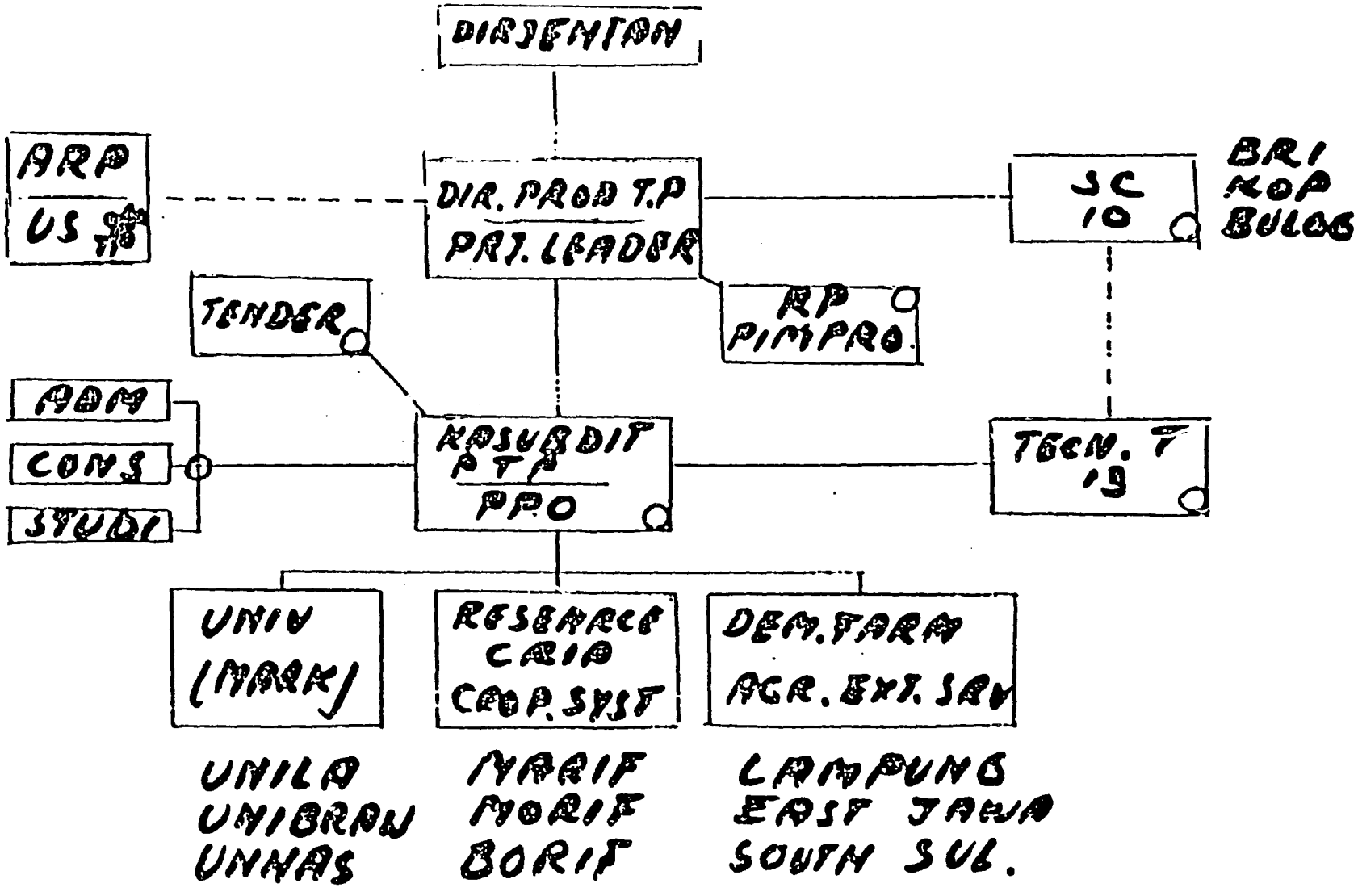
APPENDIX D

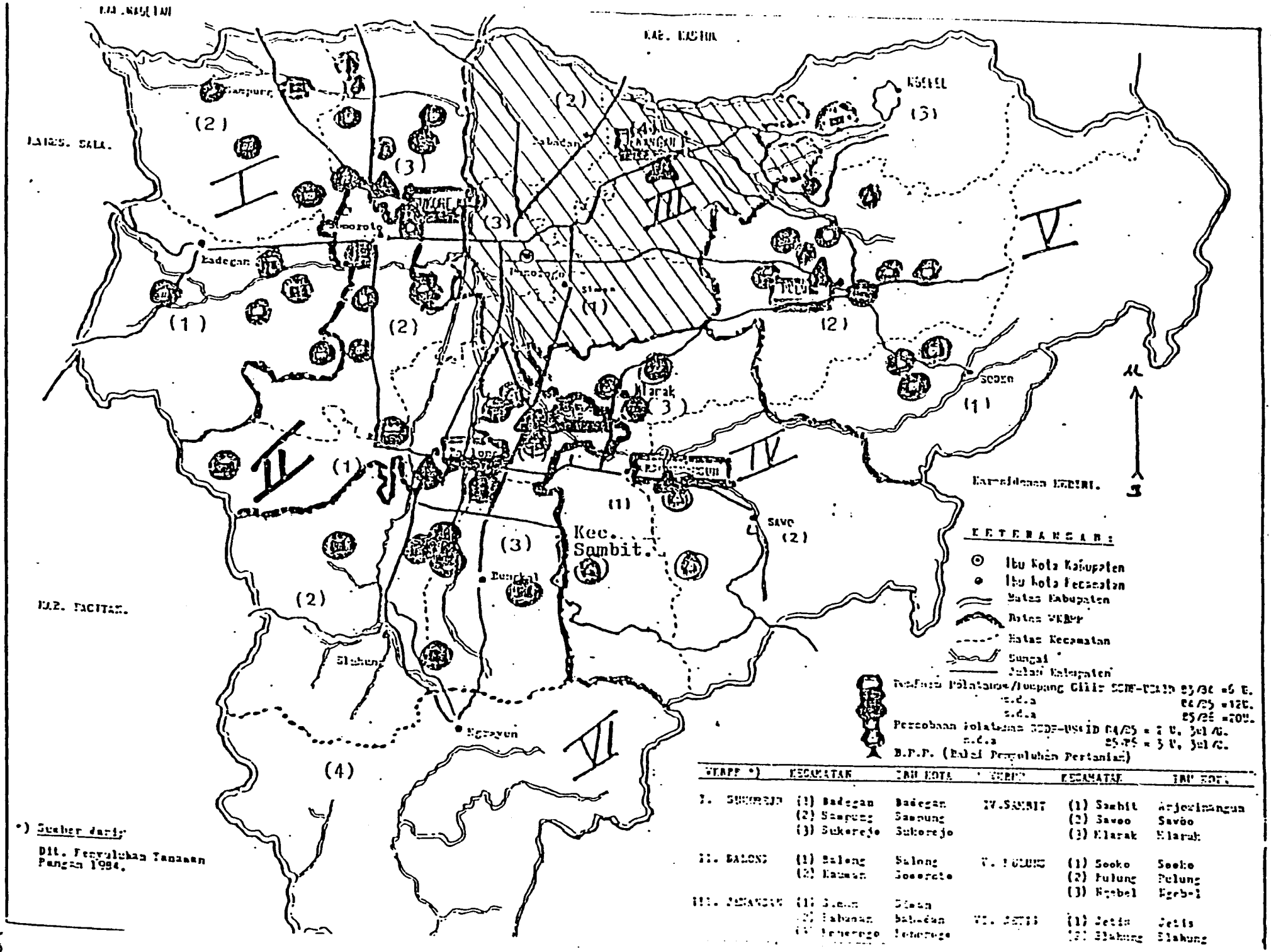
LOKASI KABUPATEN

PROYEK SCDP - USAID



" ORGANIZATION "





WERPP *)	KECAMATAN	IBU KOTA	WERPP	KECAMATAN	IBU KOTA
I. SUKOREJO	(1) Badegan	Badegan	IV. SAMBIT	(1) Sambit	Arjosimangun
	(2) Sampung	Sampung		(2) Sawoo	Sawoo
	(3) Sukorejo	Sukorejo		(3) Klarak	Klarak
II. PALONG	(1) Palong	Palong	V. PULUNG	(1) Sooko	Sooko
	(2) Kauman	Josenoto		(2) Pulung	Pulung
				(3) Ngebel	Ngebel
III. JENANGAN	(1) Slahung	Slahung	VI. JETIS	(1) Jetis	Jetis
	(2) Babadan	Babadan		(2) Slahung	Slahung
	(3) Ponorogo	Ponorogo			

*) Sumber dari:

Dit. Perlindungan Tanaman Pangan 1984.

BUDGET ALLOCATION (Rp.Million)

T.A.	PUSAT			DAERAH					
	D.P.	P.F.	G.O.I.	Lampung		Jawa Timur		Sulawesi Sel.	
				P.F.	GOI	P.F.	GOI	P.F.	GOI
1983/1984	132.973	180.238	12.565	-	-	-	-	-	-
1984/1985	398.566	170.000	12.500	91.024	-	87.032	7.020	92.437	.420
1985/1986	1,175.480	51.600	9.311	154.600	-	146.200	-	154.100	-
1986/1987	1,944.65	108.380	16.800	138.4	25 + 314.720*	138.4	25 + 314.720*	138.4	25 + 314.720*

Keterangan : D.P. : Direct Payment
P.F. : Prefinancing
GOI : Goverment Of Indonesia.
* : Kredit BRI.

LOGICAL FRAMEWORK ANALYSIS
(PURPOSE)

NARRATIVE SUMMARY	VARIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
I. TO INTRODUCE IMPROVED CROPPING SYSTEMS.	I. ABOUT 50% OF FARMERS IN THE SIX WKBPPs AND ABOUT 30 % OF FARMERS IN KABUPATEN BONE, PONOROGO AND NORTH LAMPUNG WILL ADOPT IMPROVED CROPPING SYSTEMS	I. EVALUATION AND BASELINE SURVEY FARM RECORDS AND ACCOUNTS	I. APPROPRIATE CROPPING SYSTEMS HAVE ALREADY BEEN TRIED AND PROVEN SUCCESSFUL IN PROJECT AREAS.
II. TO INCREASE USE OF COMMERCIAL INPUTS, AND IMPROVE AGRONOMIC PRACTICES.	II. ABOUT 50 % - 75 % OF FARMERS IN SIX WKBPPs HAVE ADOPTED IMPROVED AGRONOMIC PRACTICES; ABOUT 50-75 % INCREASED IN THEIR USE OF COMMERCIAL INPUTS.	II. FARM RECORDS AND ACCOUNTS; EVALUATION AND BASELINE SURVEY.	II. IMPROVED AGRONOMIC HAVE BEEN RECOMMENDED; ADEQUATE AMOUNT OF INPUTS ARE AVAILABLE ON TIMELY BASIS.
III. IMPROVED SYSTEMS OF POST HARVEST MANAGEMENT	III. IMPROVED PRODUCT QUALITY FOR HOME CONSUMPTION AND FOR THE MARKET; REDUCED FOOD LOSSES.	III. FARM RECORDS AND ACCOUNT. RECORD OF PRIVATE DEALERS AND KUDs.	III. PREMIUM PRICES PAID FOR IMPROVED QUALITY. GOVERNMENT PROCURES PRODUCTS ONLY PRODUCTS OF ACCEPTABLE QUALITY.

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ANNEX C

LOGICAL FRAMEWORK ANALYSIS
(GOAL)

Narrative Summary	Verifiable Indications	Means Of Verification	Assumptions
I. Increased production of secondary crops.	I. Production Increased by 50% in demonstration farms, 30% in six WKBPPs and 15%-20% in kabupaten.	I. Baseline and evaluation studies;crop statistic report of KOA; farm records and accounts.	I. Normal weather prevails during the period of the project.
II. Increased marketing system of secondary crops.	II. Increase volume of supply by 30%; improved quality of supply, more even temporal and spatial distribution of supply; reduce marketing spoilage.	II. Baseline and evaluation studies from records of KUD and private dealers. Farm records and accounts.	II. Incentive prices prevail during life of the project.
III. Increased volume of comsumption	III. Increased household consumption by about 10%-15% for all families in six WKBPPs and in kabupaten.	III. Baseleine and evaluation survey; farm records and accounts.	III. Increased subtitution of rice for secondary crops in the diet of the poor. Increased family income.
IV. Increased in employment in production and post harvest handling.	IV. Increased cropping intensity by 50%. Increased labor requirement in production, harvesting, drying, milling, prosessing and grading by 30%.	IV. Baseline and evaluation survey; farm records accounts.	IV. Farm wages continue to increase with productivity.
V. Increased Farm Income.	V. Increased farm income by 15%-20%.	V. Baseline and evaluation survey; farm records and accounts.	V. Increase farm productivity, farm princes, and wages.