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PROJECT ASSISTANCE COMPLETION REPORT  
SUMATRA AGRICULTURAL RESEARCH PROJECT  
AID Project No. 497-0263

I. BACKGROUND

This report assesses the accomplishments of the Sumatra Agricultural Research Project (SARP) based on project evaluations carried out in 1979, 1981, 1986 and 1987, and observations by the Mission's current project officer during the period of July 1986 to August 1987.

The SARP was initiated in 1979 with a USAID Grant of US\$ 2.5 million, a USAID Loan of US\$ 7.0 million, and a GOI Rupiah equivalent contribution of US\$ 7.5 million for disbursement over five years. The main objectives of the project were to increase agricultural production, rural employment and income levels in Sumatra through an upgraded and expanded agricultural research program and facilities.

The SARP consisted of three principal elements :

1. Technology Development and Transfer : 297 person-months of long-term assistance and 29 person-months of short-term consultancies were provided under the project to assist the GOI in upgrading and expanding agriculture development and extension programs.
2. Training of Indonesian Personnel : Seventy-four long-term training scholarships for advanced degrees; short-term training and travel grants to senior research and administrative staff to participate in international seminars and in observational visits to relevant research centers, were provided under the project.
3. The construction of offices, laboratories, buildings, facilities and housing at the institute center and the seven research stations and experimental farms; the development of land for experimental use at the research farms; and the provision of laboratory and farm equipment and vehicles.

The project was implemented by the Center Research Institute for Food Crops/Sukarami Research Institute for Food Crops (CRIFC/SARIF) with technical assistance by the International Agricultural Development Service (IADS), now a part of the Winrock International Institute for Agricultural Development. The original project completion date of 12 April 1984, was extended to 31 August 1987, to permit completion of farm development activities and to provide a bridging mechanism for the continued support to agricultural research in Sumatra under the Applied Agriculture Research Project (AARP).

## II. STATUS OF COMPLETION OF PROJECT ELEMENTS

Although there were some initial delays in the implementation of the project, i.e. (1) approximately 16 months between the signing of the grant agreement for technical assistance and the signing of a host country contract for providing this assistance, (2) a 9 month delay in the arrival of the IADS Chief of Party at post, (3) a further time lapse of about 15 months before a contract was signed for architectural and engineering services, (4) delays in the development of a master plan for site development, and (5) the lack of a clear understanding of USAID procedures concerning construction and off-shore procurement; all project elements were successfully completed under the extension.

Significant accomplishments include the following :

Technology Development and Transfer. By 1986, the SARP had established a highly efficient and effective extension outreach program and Center Headquarters meetings/visits with extension specialists were being held every three months. The frequency of these meetings/visits was increased in 1987.

The institutions involved were SARIF's headquarters in Sukarami and the research stations at Sitiung, Taman Bogo, Rambatan, and Bandar Buat.

The frequency of SARIF staff visits to farmers was also increased in 1986. This was accompanied by the introduction of technological packages in farmers' fields, and through demonstration plots which were set up by SARIF research workers together with the extension workers and the farmers concerned.

With the severe outbreak of brown planthopper in September - October 1986, new improved rice varieties (IR-46, Bahbolon, Klara, and Bahbutong) were made available through SARIF to rapidly replace the IR-36 and IR-42 varieties which were susceptible. Improvement was also made in the use and application of insecticides for controlling the insects. Simultaneous planting was introduced and widely used as a means to reduce the incidence of the insect.

Transfer of technologies from external sources to SARIF also progressed rapidly during 1986. Most notable was the land development technology which was transferred from the Farm Development Specialist of SARP/Winrock to the SARIF staff. Technology on simulation modeling was also successfully transferred from IRRI to SARIF staff.

SARIF initiated the study and introduction of homestead farming systems in the transmigration areas in collaboration with the Research Center for Agro-Economic Studies. Research and development of food crop components in several perennial crop plantations were also initiated in Aceh, Riau, and Jambi provinces in 1987.

### Research Highlights

Upland rice. The improved upland rice varieties, Batang Agam and Batang Ombilin, were demonstrated to have a greater cold tolerance than any other improved varieties now available. Batang Ombilin was also found to be tolerant to iron toxicity which is a problem in newly opened irrigated Sumatra lowlands with oxisol, ultisol, and inceptisol soils. The evaluation of two promising upland rice lines, B3906f and Napa 40 krad, was initiated by SARP with the National Seed Board.

These varieties have been found to be adaptable to dry, acid soil conditions, and tolerant to blast disease.

Peanut. Three promising high yielding (1-1.6 Ton/Ha) lines of peanut have been chosen and prepared for release. All lines are tolerant to acid soils and drought. One of the three lines is tolerant to *Cercospora* fungus which is a serious problem in high humidity climate zones.

Pest control. The seedling fly *Atherigona exigua* is a main pest of upland rice and the control of this pest relies on the use of pesticides. Trials on the effectiveness of several granular pesticides such as Furadan 36, Mipcin 6/46, Basudin 10C, Larvia 755T, Corbofuran 36 have yielded promising results. This technology is being extended to the farmers.

An experiment to test the relationship between the development stage of upland rice and the attack by the seedling fly was also conducted during the 1984/85 wet season. This research indicated that the highest incidence of attack by the seedling fly was 1-2 weeks after seeding. Continued studies along these research lines will be carried out to determine the potential for biological management/control of the seedling fly.

Blast disease. A modeling system for monitoring blast disease in rice was developed. The results of this research have shown that a reduction in application of nitrogen fertilizer (45 kg/ha) is likely to reduce the intensity of blast attack. Also the application of 600 kg  $\text{SiO}_2$ /ha and 130 kg  $\text{K}_2\text{O}$ /ha was shown to reduce blast disease incidence. The use of Hinosan fungicide also showed good control for rice neck blast attack.

Liming. Millions of hectares of rainfed land in Indonesia are made up of acid soils (PH lower than 5.5). These soils also have low cation exchanges capacity (CEC), low base saturation, low nutrient availability, and low microbial activities. On the other hand, aluminium saturation, phosphate fixation capacity, and iron and magnesium content of these soils are high and can be toxic to plants.

The results of the liming research showed that the application of 1 to 2 tons of lime/hectare can increase the average production of crops in the acid soils in Sitiung up to 135 % compared with treatments without liming. However, liming is not always economical. In such cases it is more advantageous to select crop varieties which have high adaptability to acid soil conditions. Some experimentation with several resistant lines to Aluminium toxicity, based on both screening of plants in the field and in nutrient solutions have yielded successful results.

Farm equipment. Preliminary studies were conducted on a prototype corn hulling machine in the transmigran area of Sitiung. A prototype machine built by the farmers using locally available material had a capacity of 60 kg corn/hour/person or 4 times the capacity of the hand-hulling method. Results are promising, but the machine needs to be further developed.

A rack-type drier using solar energy was also developed and tested. The percentage of head rice was 73 % compared to 65 % with the traditional farmers' method of using mats on the ground.

Cropping system. The introduced cropping system for dry land in Sitiung II/E in 1979 was : corn + upland rice/cassava -- soybean -- cowpea. Input/output analysis of the introduced system showed a B/C ratio of 1.7 while the farmers' traditional system showed a B/C ratio average of 1.08. This cropping system has now been adopted by approximately 500 farmers in Sitiung transmigration areas.

Land conservation. Terracing, mulching, and use of ground cover plants tested in the Sitiung area also has had positive effects on soil conservation. These practices have now been adopted by approximately 100 Sitiung farmers.

Agro-Ecology of Sumatra. Through the collaboration and contributions of several researchers and administrators an agro-ecology study was carried out under the project, which resulted in the development of a long range program for the development of food crops in Sumatra. SARIF, in collaboration with the Central Soil Research (CSR) and the Tropsoils project is carrying out research to improve the food crop system based on the plan.

### II.1. Technical Assistance

After a slow start in recruitment, IADS/Winrock was able to provide and maintain a full complement of long-term specialists on board since 1982. The originally programmed 252 person-months (PM) of long-term specialists and 24 PM of short-term consultants were increased to 297 PM and 29 PM, respectively.

Approximately two-thirds of the long-term technical assistance component focused on facility development, administration, research planning and management. The remaining portion was more directly related to specific research activities.

## II.2. Training

Training programs focused almost entirely on scientific staff. A total of 49 researchers : 8 PhDs (5 overseas, 3 in-country) and 41 MSCs (11 overseas, 30 in-country) completed long-term training programs. 28 researchers, including 10 PhDs (6 overseas, 4 in-country) and 18 MSCs are continuing their studies. (Table 1 summarizes the assignment/status of these participants).

Although there were difficulties in finding candidates with adequate English language proficiency and fewer staff trained overseas than planned, the project made significant progress in establishing opportunities for improving English language proficiencies.

## II.3. Commodities

Procurement of commodities was carried out through a US procurement contractor, Trans Century, and was divided into four separate orders . With the exception of a few shortages and damaged items under the 3rd and 4th orders all commodities were received on a timely basis. With the exception of the damaged items, which is not a significant amount, all commodities are being used to continue project activities. Appropriate action is being taken on the shortages and damaged items. However, due to GOI budget cuts, maintenance of some of the equipment, specifically vehicles and heavy farm equipment, has been problematic.

#### II.4. Construction

All construction planned under the project was completed in 1986. Water and power services were developed at all sites and roadways at most sites. A radio linked telephone and teleprinter system at Sukarami was installed and became operative in March 1987.

After it became clear that few local contractors had sufficient experience in the specific area of research station development, SARP officials decided to establish a Land Development Unit (LDU) at Sukarami, and to mandate the SARP/Winrock Station Development Specialist to undertake the task of completing all remaining station development objectives which could not be contracted locally.

The establishment of a LDU involved the acquisition of important items of equipment such as dump trucks, bulldozer, swamp dozer, and a wheel loader. It also involved training of SARIF staff to operate the equipment and understand the nature of the work being required.

By the end of 1986 all land development work had been completed at Sukarami, Bandar Buat, Rambatan and Kayu Agung research stations. However, the project was extended until August 31, 1987 to enable the completion of remaining work in Sitiung, Pasar Miring and Taman Bogo. All development work at these stations have now been completed.

The following table provides the completion data and funding amounts for the construction works.

LIST OF SARP STATIONS  
CONSTRUCTION WORK

| <u>Location</u>                 | <u>Date Completed*)</u>   | <u>AID Funds</u><br>(\$ 000) | <u>Total Value</u><br>(\$ 000) |
|---------------------------------|---|------------------------------|--------------------------------|
| 1. SUKARAMI<br>(W. Sumatra)     | March 24, 1987  | 816                          | 2,109                          |
| 2. SITIUNG<br>(W. Sumatra)      | March 24, 1987  | 378                          | 592                            |
| 3. RAMBATAN<br>(W. Sumatra)     | March 24, 1987  | 72                           | 106                            |
| 4. BANDAR BUAT<br>(W. Sumatra)  | (- excluded from the USAID-supported<br>construction work)                                |                              |                                |
| 5. KAYU AGUNG<br>(S. Sumatra)   | May 19, 1986  | 38                           | 115                            |
| 6. PASAR MIRING<br>(N. Sumatra) | Dec. 17, 1988   | 164                          | 168                            |
| 7. TAMAN BOGO<br>(Lampung)      | Dec. 17, 1986   | 128                          | 131                            |
| 8. LAMPINEUNG<br>(Aceh)         | (- included in the Sukarami II + Lampineung<br>works)<br>(FAR approval as per PIL No. 35) |                              |                                |
| Total ( 1 + 8 )                 |   | 1,596                        | 3,221                          |

\*) as of USAID Final Inspection Date

III.

PLANNED VERSUS ACTUAL INPUTS

The following table shows the Proposed Financial Plan vs. Actual Inputs. (\$ 000)

|               | <u>Planned Inputs</u> |            |              | <u>Actual Inputs</u> |            |              |
|---------------|-----------------------|------------|--------------|----------------------|------------|--------------|
|               | <u>AID</u>            | <u>GOI</u> | <u>TOTAL</u> | <u>AID</u>           | <u>GOI</u> | <u>TOTAL</u> |
| <u>Grant</u>  |                       |            |              |                      |            |              |
| T.A.          | 2,500                 | 200        | 2,700        | 2,500                | 200        | 2,500        |
| <u>Loan</u>   |                       |            |              |                      |            |              |
| T.A.          | 485                   | 0          | 485          | 341                  | 0          | 341          |
| Training      | 498                   | 365        | 863          | 498                  | --         | --           |
| Commodities   | 3,162                 | 950        | 4,112        | 3,587                | 233        | 3,820        |
| Construction  | 2,467                 | 3,965      | 6,432        | 1,596                | 1,625      | 3,221        |
| Inflation     |                       |            |              |                      |            |              |
| Contingencies | 387                   | 2,020      | 2,407        | 14                   | --         | --           |
| <hr/>         |                       |            |              |                      |            |              |
| Total         | 9,500                 | 7,500      | 17,000       | 8,536                | --         | --           |

Final GOI contribution figures awaiting report from SARIF.

IV. SUMMARY OF CONTRIBUTION

Although there were some difficulties with reference to administrative problems, the timing and utilization of funds from both USAID and the GOI, and subsequent delays in project implementation, such constraints were offset by the extension of project activities.

Project accomplishments toward the establishment of an agricultural research institution in Sumatra were satisfactory. As detailed in Section II of this report at the completion of the project important research activities were underway and project developed technology was being applied by farmers.

An adequate number of scientists were trained under the project, however additional training in physical plant and equipment management and in general administrative and management procedures would further contribute to the efficiency and effectiveness of agriculture research.

V. REVIEW OF PROJECT ACCOMPLISHMENTS

As further discussed in the Summary, Section IX, project accomplishments were satisfactory and expected outputs were achieved.

VI. EXTENT TO WHICH THE PROJECT HAS RESOLVED THE ORIGINAL PROBLEM

This project met most of its specific purposes and outputs, and its contribution to increased national agricultural production, rural employment and income in Sumatra, will be increasingly obvious over time.

VII. RECOMMENDATION FOR FINAL ADJUSTMENT IN PROJECT DESIGN, CONDITIONS AND CONVENANTS

None

VIII. CONTINUING AID FOR POST-PROJECT AID MONITORING RESPONSIBILITIES

In July 1987 the second phase of assistance to the Sukarami research network was initiated under the Applied Agriculture Research Project (AARP). This involved USAID support for an additional five years to 1992. The second phase will shift focus away from development of infrastructure to management and research administration, as well as the implementation of field research in the Sukarami system.

Four experts are provided: a Research Program Management Specialist, an Agricultural Economist, Upland Rice Pathologist and a Station Development Specialist.

Sukarami will become one of two centers for training managers throughout the national agriculture research system in all aspects of research station management and field operations.

IX. REVIEW OF DATA COLLECTION RESULTS AND REMAINING EVALUATIONS

The project paper projected that 4 conditions would exist at the end of the project : (a) physical facilities in place; (b) professional staff trained; (c) sufficient technical staff trained and hired and (d) research performed during the implementation period. As project implementation moved forward, the Sukarami Research Institute for Food Crops was established. Eight of the stations, including the headquarter station at Sukarami, were absorbed into SARIF. The SARP then assumed a dual purpose : the completion of physical facilities at the eight stations and the strengthening of SARIF as an institution to expand and improve agricultural research on food crops with reference to agro-climatic factors specific to Sumatra.

Most of the conditions and data collection had been satisfied by the end of the project. Continuing support under the AARP will sustain the progress made and allow USAID and GOI to carry out additional evaluations, under the AARP on SARIF's effectiveness and role in the national agricultural research system.

X. SUMMARY OF LESSON LEARNED

The project experienced delays in the start up of technical assistance, architectural and engineering services, land and site development, construction and off-shore procurement. Furthermore, the limited English language proficiency of staff members reduced the number of staff who could be trained overseas.

Some of the reasons for slow implementation were lack of understanding of AID regulations with respect to approval of engineering designs, specifications and costs estimates. It is now evident that the GOI needs to focus greater effort on developing a pool of candidates for advanced degrees training program overseas and that in-country English language training should be initiated as early as possible by the GOI, in order that the participants can complete their training in time to be integrated fully into project activities, before the project completion date.

Although the land development activity was delayed presumably to favor the building program, failure to carry out this sub-activity concurrently with other elements of research station/farm development seriously interfered with field research for the next several years. However, the decision to create the Land Development Unit (LDU) at Sukarami was a wise move in that it not only addressed SARP's immediate land development problems, but also provides the potential usefulness of a LDU for future development work within the national research system. Given the limitation on operational budgets which has developed since the project began, a time-phased development of the several stations might have been preferable to a simultaneous development of all sites.

Considerable agricultural field and laboratory equipment were supplied under the SARP to the different research stations. In some cases the equipment now on hand does not fit the current mandates or requirements of the station. Therefore, it is recommended in the future that additional effort be extended to better identify mandates and equipment needs. The commodity needs and procurement schedule should reflect existing and planned staffing capabilities, the suitability of the equipment with respect to the station's mandate and the "state of the art" life of the equipment, especially expensive research equipment.

TABLE: 1

## OVERSEAS LONG-TERM TRAINING: LIST OF PARTICIPANTS (1978 - JULY 31, 1987)

| NAME                | DISCIPLINE          | PLACE                    | YEAR COMPLETED | STATUS                        | SOURCE OF FUNDING |
|---------------------|---------------------|--------------------------|----------------|-------------------------------|-------------------|
| a) COMPLETED        |                     |                          |                |                               |                   |
| M.Sc.               |                     |                          |                |                               |                   |
| 1. Sridodo          | Agronomy            | Iowa State U. USA        | June, 1979     | Continuing Ph.D               | Non-USAID         |
| 2. Sumarno          | Breeding            | Iowa State U. USA        | June, 1980     | Continuing Ph.D               | Non-USAID         |
| 3. Rasidin Azwar    | Breeding            | UPLB-Philippines         | June, 1981     | Continuing Ph.D               | USAID             |
| 4. Iswandi HB       | Agronomy            | UPLB-Philippines         | June, 1981     | Continuing Ph.D               | USAID             |
| 5. Zainal Lamid     | Agronomy            | UPLB-Philippines         | Oct., 1981     | Agronomist-SARIF              | USAID             |
| 6. Made Oka Adyana  | Agronomy/Statistics | UPLB-Philippines         | Jan., 1984     | Continuing Ph.D               | USAID             |
| 7. M. Yusuf Yakub   | Breeding            | SHSU, Texas, USA         | Dec., 1984     | Continuing Ph.D               | Non-USAID         |
| 8. Firdaus Kasim    | Agronomy            | SHSU, Texas, USA         | Dec., 1984     | Continuing Ph.D               | Non-USAID         |
| 9. Abdul Gani       | Agronomy            | UPLB-Philippines         | June, 1985     | Plant Breeder-SARIF           | Non-USAID         |
| 10. Nusyirwan Hasan | Entomology          | UPLB-Philippines         | Dec., 1985     | Entomologist-SARIF            | Non-USAID         |
| 11. Firdos Nurdin   | Entomology          | Univ. Kentucky, USA      | June, 1987     | Entomologist-SARIF            | Non-USAID         |
| Ph.D                |                     |                          |                |                               |                   |
| 1. Sridodo          | Agronomy            | Iowa State U. USA        | July, 1981     | CRIFC-Bogor                   | Partially USAID   |
| 2. Sumarno          | Breeding            | Iowa State U. USA        | March, 1982    | CRIFC-Bogor                   | Partially USAID   |
| 3. Rasidin Azwar    | Breeding            | UPLB-Philippines         | March, 1984    | Head, Breeding<br>Dept. SARIF | Partially USAID   |
| 4. Iswandi HB       | Agronomy            | UPLB-Philippines         | March, 1984    | Head, Agronomy<br>Dept. SARIF | Partially USAID   |
| 5. Zulkifly Zaini   | Plant Physiology    | UPLB-Philippines         | Dec., 1984     | Research Coordinator<br>SARIF | Partially USAID   |
| b) CONTINUING       |                     |                          |                |                               |                   |
| 1. Made Oka Adyana  | Ag. Economics       | UPLB-Philippines         | 1987           |                               | NAR-II            |
| 2. Zainal Lamid     | Agronomy            | UPLB-Philippines         | 1987           |                               | NAR-II            |
| 3. Agusli Taher     | Plant Physiology    | UPLB-Philippines         | 1988           |                               | NAR-II            |
| 4. M. Yusuf Yakub   | Plant Breeding      | Mississippi St. U. (USA) | 1988           |                               | NAR-II            |
| 5. Firdaus Kasim    | Agronomy            | Kansas State Univ. (USA) | 1989           |                               | NAR-II            |
| 6. Ishak Manti      | Entomology          | UPLB-Philippines         | 1990           |                               | NAR-II            |

IN COUNTRY LONG-TERM TRAINING: LIST OF PARTICIPANTS (1977 - JULY 31, 1987)  
(601 funds)

| NAME                    | DISCIPLINE       | PLACE           | DURATION               | REMARKS/PRESENT POSITION  |
|-------------------------|------------------|-----------------|------------------------|---|
| <b>a) COMPLETED</b>     |                  |                 |                        |   |
| <b>M.Sc.</b>            |                  |                 |                        |   |
| 1. Darwis S.N           | Agronomy         | IPB-Bogor       | May 1977 - June 1980   | SARP-Project Leader until June '81                              |
| 2. Zulkifli Zaini       | Plant Physiology | IPB-Bogor       | May 1978 - March 1980  | Continuing Ph.D at UPLB   |
| 3. M. Nur H.I.          | Agronomy         | IPB-Bogor       | June 1979 - June 1982  | Head, Exp. Farm, Brastagi                                       |
| 4. Adly Yusuf           | Agronomy         | IPB-Bogor       | June 1979 - Aug. 1982  | Head, Res. Station, Siting                                      |
| 5. Tasman Naim          | Agronomy         | IPB-Bogor       | June 1979 - Aug. 1982  | Head, Exp. Farm, Kayu Agung                                     |
| 6. Azran Tanjung        | Breeding         | IPB-Bogor       | June 1979 - July 1982  | Secretary-SARIF, Sukarame                                       |
| 7. Yulmar Jastru        | Technology       | IPB-Bogor       | June 1979 - July 1982  | BPTP-Sukarame   |
| 8. Ishak Manti          | Entomology       | IPB-Bogor       | June 1979 - July 1982  | Entomologist, SARIF   |
| 9. Agusli Taher         | Plant Physiology | IPB-Bogor       | June 1979 - July 1982  | BPTP-Sukarame   |
| 10. Harry Subekti       | Statistics       | GAMA-Yogyakarta | June 1979 - May 1982   | Continuing Ph.D at GAMA   |
| 11. Djoko Suyanto       | Soil Science     | GAMA-Yogyakarta | June 1979 - May 1982   | Continuing Ph.D at GAMA   |
| 12. Asdirwan Arief      | Agronomy         | IPB-Bogor       | June 1980 - Dec. 1982  | Continuing Ph.D at IPB-Bogor                                    |
| 13. I. Ketut Sastra     | Post-Harvest     | IPB-Bogor       | June 1980 - June 1982  | BPTP-Sukarame   |
| 14. Anischan Gani       | Plant Physiology | UNPAD-Bandung   | June 1980 - Dec. 1983  | Continuing Ph.D at UNPAD, Bandung                               |
| 15. Zadri Hamzah        | Breeding         | IPB-Bogor       | June 1982 - Dec. 1984  | Plant Breeding Dept., SARIF-Sukarame                            |
| 16. Irmansyah Rusli     | Plant Pathology  | GAMA-Yogyakarta | June 1982 - Feb. 1985  | Plant Pathologist-SARIF, Sukarame                               |
| 17. Dewa Ketut Sadra    | Ag. Economics    | UNPAD-Bandung   | June 1982 - June 1985  | Ag. Economist-SARIF, Sukarame                                   |
| 18. Nasrul Husen        | Ag. Economics    | IPB-Bogor       | June 1982 - Dec. 1985  | Ag. Economist-SARIF, Sukarame                                   |
| 19. Dariono Satrodipuro | Ag. Economics    | IPB-Bogor       | June 1982 - Dec. 1985  | Technologist-SARIF, Sukarame                                    |
| 20. Y. Zubaideh         | Plant Physiology | GAMA-Yogyakarta | June 1982 - Dec. 1985  | Plant Physiologist-SARIF, Sukarame                              |
| 21. B. Puherman         | Ag. Economics    | GAMA-Yogyakarta | June 1982 - March 1986 | Ag. Economist-SARIF, Sukarame                                   |
| 22. Abdul Kahar         | Ag. Economics    | IPB-Bogor       | June 1982 - 1986       | Plant Breeding Dept., SARIF-Sukarame                            |
| 23. Syafei              | Soil Science     | IPB-Bogor       | June 1982 - 1986       | Continuing Ph.D at GAMA-Yogyakarta                              |
| 24. Aryulis             | Plant Physiology | UNPAD-Bandung   | June 1982 - 1986       | Plant Physiologist-SARIF, Sukarame                              |
| 25. Burbey              | Plant Physiology | UNPAD-Bandung   | June 1983 - 1986       | Plant Physiologist-SARIF, Sukarame                              |
| 26. Aarif B.            | Plant Pathology  | UNPAD-Bandung   | June 1982 - 1986       | Plant Pathologist-SARIF, Sukarame                               |
| 27. Yunizar             | Plant Physiology | IPB-Bogor       | June 1982 - Feb. 1987  | Plant Physiologist-SARIF, Sukarame                              |
| 28. Asadi               | Plant Physiology | IPB-Bogor       | June 1982 - Feb. 1987  | Plant Physiologist-SARIF, Sukarame                              |
| 29. Darmijati S.        | Agroecology      | IPB/UNAN        | June 1984 - March 1987 | Agronomist-SARIF, Sukarame                                      |
| 30. Ishar Madi          | Agronomy         | IPB-Bogor       | June 1984 - June 1987  | Agronomist-SARIF, Sukarame                                      |
| <b>Ph.D</b>             |                  |                 |                        |   |
| 1. Darwis S.N           | Agronomy         | IPB-Bogor       | June 1981 - Dec. 1982  | Director-Research Center, Industrial Crops, Manado, N. Sulawesi |
| 2. Djoko Suyanto        | Soil Science     | GAMA            | June 1982 - Dec. 1986  | Soil scientist, SARIF, Sukarame                                 |
| 3. Asdirwan Arief       | Agronomy         | IPB-Bogor       | Jan. 1983 - May 1987   | Agronomist-SARIF, Sukarame                                      |

IN-COUNTRY LONG-TERM TRAINING      Con't....

| NAME | DISCIPLINE | PLACE | YEAR STARTED |
|------|------------|-------|--------------|
|------|------------|-------|--------------|

b) CONTINUING

M.Sc

|                      |                  |                 |            |
|----------------------|------------------|-----------------|------------|
| 1. Azman             | Technology       | IPB-Bogor       | June, 1982 |
| 2. Abdul Aziz        | Agronomy         | IPB-Bogor       | June, 1984 |
| 3. Winardi Chatib    | Agronomy         | IPB-Bogor       | June, 1984 |
| 4. Mohar Daniel      | Ag. Economics    | IPB-Bogor       | June, 1984 |
| 5. azizar            | Plant Physiology | IPB-Bogor       | June, 1985 |
| 6. Afdal Jaya Putra  | Ag. Engineering  | IPB-Bogor       | June, 1985 |
| 7. Artuti            | Agronomy         | IPB-Bogor       | June, 1985 |
| 8. Marzeapi          | technology       | IPB-Bogor       | June, 1985 |
| 9. Syahrial A.       | Plant Physiology | IPB-Bogor       | June, 1985 |
| 10. Edial Afdi       | Plant Physiology | IPB-Bogor       | Aug., 1986 |
| 11. Adlis G.         | Cropping Systems | UNPAD-Bandung   | June, 1982 |
| 12. Chairunas        | Cropping Systems | UNPAD-Bandung   | June, 1983 |
| 13. Helaidar Bahar   | Plant Breeding   | GAMA-Yogyakarta | June, 1984 |
| 14. Yanfirman Yanuar | Plant Pathology  | GAMA-Yogyakarta | June, 1985 |
| 15. Ahsol Hasyim     | Plant Pathology  | GAMA-Yogyakarta | Aug., 1984 |
| 16. Damar Alamsyah   | Plant Physiology | GAMA-Yogyakarta | Aug., 1986 |
| 17. Ridwan           | Agronomy         | GAMA-Yogyakarta | Aug., 1986 |
| 18. Rafli Munir      | Agronomy         | GAMA-Yogyakarta | Aug., 1986 |

Ph.D

|                  |            |                 |            |
|------------------|------------|-----------------|------------|
| 1. Harry Subekti | Statistics | GAMA-Yogyakarta | June, 1982 |
| 2. Anischan Gani | Physiology | UNPAD-Bandung   | Dec., 1983 |
| 3. Adly Yusuf    | Agronomy   | UNPAD-Bandung   | July, 1984 |
| 4. M. Nur H.I.   | Agronomy   | UNPAD-Bandung   | July, 1984 |

NOTE

From : Office of Program & Project Support  
USAID/Jakarta

Subject: Project Completion Report for Sumatra Ag. Research

Attached is a copy of the updated table showing the Proposed Financial Plan versus Actual Inputs. This should be included in the Project Assistance Completion Report for Sumatra Agricultural Research Project No. 497-0263 (Page 10).

The GOI rupiah expenditures for the Training & Contingency line items were not included in the previous table due to the unavailability of report from the Agency for Agricultural Research and Development.

Dist: FIN, C&R, ANE/PD, PPC/CDIE/DI

Agency for Agricultural Research and Development  
CENTRAL RESEARCH INSTITUTE FOR FOOD CROPS  
(CRIFC)

Jalan Merdeka 99  
Bogor - Indonesia - 16111

Phone : 28399, 24089, 21755  
Cable : LITANAN BOGOR

Our ref. : KL.150.207.136<sup>a</sup>

July 6, 1988

Joanne T. Hale  
Chief, Agriculture Research,  
Planning and Fisheries Division  
KEDUTAAN BESAR AMERIKA  
JAKARTA

Dear Miss Hale,

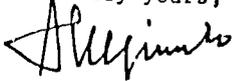
Thank you for your letter of April 15, 1988 No. II/1169.

Attached, please find a copy of Project Assistance Completion Report on Sumatera Agricultural Research Project Aid ( Project No. 497-0263 ).

The GOI Rupiah expenditures for the Training and Contingency as suggested in your letter have been provided in the report.

Thank you very much for your kind assistance and cooperation.

Sincerely yours,



Soegijanto  
for the Director of CRIFC.

c.c. : Ir. Paransih Isbagio - Secretary AARD

/AH/d1.

Planned Versus Actual Inputs

The following table shows the Proposed Financial Plan versus Actual Inputs (\$ 000).

|                  | <u>Planned Inputs</u> |              |               | <u>Actual Inputs</u> |              |               |
|------------------|-----------------------|--------------|---------------|----------------------|--------------|---------------|
|                  | <u>AID</u>            | <u>GOI</u>   | <u>TOTAL</u>  | <u>AID</u>           | <u>GOI</u>   | <u>TOTAL</u>  |
| <u>Grant</u>     |                       |              |               |                      |              |               |
| T.A              | 2,500                 | 200          | 2,700         | 2,500                | 200          | 2,700         |
| <u>Loan</u>      |                       |              |               |                      |              |               |
| T.A              | 458                   | 260          | 745           | 341                  | 206          | 547           |
| Training         | 498                   | 316          | 414           | 498                  | 136          | 634           |
| Commodities      | 3,163                 | 1,413        | 4,594         | 3,587                | 1,231        | 4,818         |
| Construction     | 2,467                 | 4,971        | 7,438         | 1,596                | 4,832        | 6,428         |
| <u>Inflation</u> |                       |              |               |                      |              |               |
| Contingencies    | 387                   | 322          | 709           | 14                   | 170          | 184           |
| <u>T o t a l</u> | <u>9,500</u>          | <u>7,500</u> | <u>17,000</u> | <u>8,536</u>         | <u>6,775</u> | <u>15,311</u> |