APPENDIX III. B. 3

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-006

This report must be typed or filled out neatly in longhand for all trips (field trips, meetings, congresses, etc), not exceeding 100-150 words.
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Name / Nama: Greta A. Watson
Department / Kelompok: Agroeconomy

Date of Departure / Tanggal berangkat: 19 June 1984
Return / Tanggal kembali: 26 June 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: KEPAS Office, Jakarta; RMI Office, Bogor

Accompanied by / Pengikut: Ir. Rumansyah Itjin, BARIF Assistant Research Director.

Purpose of trip / Maksud perjalanan: To conclude the editing of the Proceedings of the Workshop on the Sustainable Intensification of Tidal Swamplands, Banjarmasin, South Kalimantan 18-24 July 1984.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

In cooperation with William Knowland of AID and KEPAS, Ir. Rumansyah and myself concluded the major editting and reorganization of the final draft of the above Proceedings. This included the reorganization of some chapters of the book, improvement of survey information, additional construction of surveys and charts, sequencing, and grammatical correction. The results look encouraging and the final copy should be distributed sometime in September.

The opportunity to travel to Jakarta also provided me with the opportunity to consult with doctors on various medical problems.

I was not able to visit LETNAS as originally intended to discuss agroeconomic research in Indonesia due to the absense of the appropriate staff.

Appendix III C

Quarterly Activity Report by Dr. Bernardo P. Gabriel
Entomologist
April 1 - June 30, 1984

I. Activities

1. Trips

Nine trips were made during the quarter (see trip report enclosed). These trips were primary observations on on-going research in the different Balittan stations as well as responses to requests of station managers regarding specific crop protection problems requiring assistance for their solution.

One trip was made to Bogor to attend Weed Science Symposium.

2. Master Plan of BARIF

Coordinated the drafting of the Master Plan of BARIF by putting together the contributions of the different staff including consultants and the writing of some sections specially on the research program for crop protection.

3. Seminars and Conferences Attended

a) Attended all BARIF Monday seminars except one and at the same time assisted BARIF staff in presenting seminar topics on crop protection.

b) April 10 - 12, 1984 :
Attended the Weed Science Symposium Sponsored by BIOTROP - (Seameo Regional Centre for Tropical Biology).

c) June 16, 1984 :
Presented a lecture on 'Why Biological Control in Indonesia' at the Fakultas Biologi, Gajah Mada University, Yogyakarta.

d) April 27, 1984 :
Discussions on 'Pest Management' with students and staff of the Department of Crop Protection of Lambung Mangkurat University - who visited the Binuang station of the Balittan.

4. Lecture Series on Pest Management to Crop Protection staff of Balittan Started Lecture series on the Principles of Pest Management to Balittan staff - the meetings are held three times a week 2 hours each meeting (Outline of lectures enclosed).

5. Review paper for publication entitled "Rats as Agricultural Pest in Tidal Swamplands of South Kalimantan" by Thomas Gula and Ir. Mohammad Thamrin.

6. Conduct of the following On-going research with Balittan Crop Protection staff.

   a) Population Dynamics of the Insect Pest of Rice in the tidal swamp.

   b) Effect of distance of planting on the incidence of pests in peanuts.

   c) Establishing economic injuy levels for the white rice stemborer in tidal swamps.

   d) Survey of the diseases of rice in Kalimantan and tidal swamp areas of Indonesia.

   e) Survey of the pest and diseases of corn in Kalimantan.

   f) Rat experiments in monotonous swamps regarding kinds of baits and their application.

7. Consultations and Meetings

a)	April 10-12 1984	Consultation with Prof. Juan Pancho (Institute of Biological Science, University of the Philippine at Los Banos) and Mr. Soemantri Wirjahardja of BIOTROPE) on weed identification of specimens collected from tidal swamps.
b)	April 12, 1984	Consultation with Mrs. S. Siwi, Insect taxonomist of Bogor Research Institute for Food Crops on the identification of green leafhoppers found in Kalimantan.
c)	April 20, 1984	Consultation with Ir. Suroto, Head of the Balai Proteksi Tanaman Pangan Banjarbaru on the possible cooperation on rat research in monotonous swamp.
d)	June 12, 1984	Consultation with Prof. Ir. Soemantri and his staff of Gajah Mada University regarding their research in tidal swamps and possible cooperative activity with Balittan.
e)	June 12, 1984	Consultation with Dr. Katsumbogo Untung, (Entomology Department Head) and his staff on entomological research.

8. Compilation of publication for crop protection research in insects plant pathogens and weeds. There are now over 300 titles of technical papers compiled for used of Balittan staff. A complete listing of the different titles is being done. In addition a bibliography of crop protection publications with abstracts especially for tidal swamps and the Kalimantan region is being prepared. A summary of the number of publications under various topics is enclosed.

9. Reference collection of insects and weeds. There are now more than 1500 specimens of insects and other arthropids in the Balittan reference collection mostly collected by myself. More than half of these are pinned specimens and placed in boxes with glass top. A summary of the collection according to order is enclosed. A complete cataloguing of the different species is being done including the precise scientific names if identified and their corresponding taxonomic classification. About 100 specimens of weeds collected primarily from tidal swamps have been done. About 40 species have been identified. Twenty four colored slide picture of weeds with identification were also compiled. A listing of the identified weeds is enclosed.

   Identified insect pests were provided to the Binuang station to assist the station staff in the correct identification and subsequent monitoring and surveillance of insect pests and natural enemies in that station. All the experiment stations will be provided with the same service.

10. Took a two week vacation leave. My wife and four children visited me in Banjarmasin, April 28 to June 1 after which I took a two week trip by visiting other parts of Indonesia. Part of this trip took me to Gajah Mada University in Yogyakarta and had some consultation, with researchers on tidal swamps.

11. Accounting RMI/AARP Funds.

    As usual did monthly accounting of RMI/AARP funds for Balittan Banjarmasin.

II. Problem and Solution

1. Lack of research facilities and supplies to carry on some important research in crop protection. Specimens have to be precisely identified and there is a lack of suitable microscopes to do this. Isolation of microbial pathogen of rice have to be done partly in the laboratory of the Crop Protection Department in Lambung Mangkurat University.

2. More training in English for the Balittan staff. Although a higher precentage of people are not passing the Aligu test than before we still have many staff who needs further training abroad who cannot passed the test. For instance - Training in crop protection for deep water rice in Thailand is opened for Balittan staff this coming October nobody among the crop protection staff (seven of them) except one who is already trained in IRRI has passed the Aligu Test.

3. Management problem in frying to direct station leader of some experiment station to follow the conduct of experiment properly in the absence of consultants and principla researchers. Sometimes some badly needed data are not taken.

4. Future plan for the next quarter (July - September)

    a. Continue lecture series a pest management.

    b. Continue to conduct research on crop protection.

    c. Prepare some research data for publication.

APPENDIX III. C. 1

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-007

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 10 April 1984
Return / Tanggal kembali: 12 April 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Bogor (Symposium on Weed Science)

Accompanied by / Pengikut: Ms. Greta Watson. (who presented a paper on Farmer Weed Management in Tidal swamp of Central and South Kalimantan).

Purpose of trip / Maksud perjalanan: To attend weed science symposium and have some weed and insects collected in tidal swamps identified.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

1. Symposium - Sponsored by SEAMEO, Regional Center for Tropical Biology (BIOTROPE). There were 36 paper presented during the three day symposium which were divided into five sessions namely, 1) Country report, 2) Biology and ecology, 3) Environmental impact of weeds, 4) Weed Control and management and 5) Herbicide physiology The sixty four participants come from all Asean countries.

One interesting paper was on the biological control of floating weeds in Australia by Dr. P.M. Room. An insect, a weevil Cyrtobagous sp. (Curculionidae Coleoptera) was brought from Brazil to Australia and has given complete control of Salvinia molesta at a number of sites after being released in 1980.

In the last day of the symposium the participants were divided into four working groups covering, biology and ecology, herbicide physiology, weed control and management and environmental impact of weed management. I attended the last group where I help out in making recommendations concerning the problems of weed

control methods on the environment.

2. Weed Identification

Twenty species of dried specimens of weeds collected in tidal swamp by crop protection staff of BARIF and thirty colored slide pictures of weeds from South Kalimantan were identified by Prof. Juan V. Pancho (Institute of Biological Science, University of the Philippines at Los Banos) and Mr. Soemantri Wirjahardja of SEAMEO Regional Center for Tropical Biology (BIOTROPE).

3. Insect Identification.

Some species of insects collected at the different experiment stations of BARIF were identified by comparing the specimens at the National Zoology Museum in Bogor. These include species of dragonflies, which are largely predatory insects in rice field, chrysomiled beetles, and other hemipterous insect pests.

4. Meeting with Mrs. Sri Suharni Siwi - Insect Taxonomist of Central Research Institute for Food Crops in Bogor.

Mrs. Siwi showed the different collection of insect pests. She is working primarily on the biosystematics of the green leafhopper (Nephotettix spp). She revealed thru mounted genitalia of the green leafhopper the difference of species from specimens collected from South Kalimantan comparing to other areas of Indonesia. She also gave a reprint of her publication on new species of rice bug collected from Timor and Irian Jaya. She was very helpful in showing some important techniques in the collection and preservation of particular insect specimens.

APPENDIX III. C. 2

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-008

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 18 April, 1984
Return / Tanggal kembali: 18 April, 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Belawang

Accompanied by / Pengikut: Dr. Kevitt Brown, Ir. Sutami, Ir. Ida Herawati, H.M. Rais Japeri (Dinas Pertanian).

Purpose of trip / Maksud perjalanan: To observe problem of pests and diseases.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

1. There is a high incidence of brown spot caused by Helminthosporium oryzae on the different rice varieties planted in the area. Apparently there is also a soil problem with low pH and lack of potassium which predispoces susceptible rice varieties to fungal attack.

2. There is also a high incidence of rice bug (Leptocorisa oratoria) on rice that are heading.

3. At this time there is a low incidence of stem borer, green leaf hopper and leaf folders.

4. Spiders abound in the area and are expected to be helpful as biological control agents.

5. Discussion with the farmers indicate other problems like mole cricket and rats. Baiting for rats in being done but not effective enough because of asynchronous planting and harvesting. It seems that there is always a susceptible stage of rice present in the field for rats to feed on.

Recommendations for Helminthosporium Leaf Spot

1. Varietal resistance. The following varieties were 3 reported by IRRI high level of resistance to isolates of the pathogen.

   IR 42, IR 44, IR 13423-10-2-3, IR 13423-17-1-2-1, Kanto, Asahi, Norin 17, Fukunishiki, Eratio, Raminad Str. 3, MI 273.

2. Seed Treatment. Hot water method or used of various chemicals like copper compounds, formalin, organic mercuries.

3. Foliar spraying with fungicide or antibiotic funicularin could prevent secondary air-bone infection.

4. Field sanitation, crop rotation, adjustment of planting dates, proper fertilization, good water management, and soil amendment. Since the disease is usually associated with potassium deficiency, apply muriate of potash to correct this problem.

Recommendations for Leptocorisa oratoria

1. Alternatei host plants like some grominoela weeds should be removed.

2. If necessary apply the following chemicals as recommended in the commercial label :

Dicarbam 85	(Carbaryl)
Dimecron 50 SCW	(Phosphamidon)
Lannate 25 wp	(Metomyl)
Lebaycid 550 EC	(Fenition)
Sevin 85%	(Carbaryl)

APPENDIX III. C. 3

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-009

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 26 April 1984
Return / Tanggal kembali: 26 April 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Unit Tatas

Accompanied by / Pengikut: Ir. Mahrita Willis, Ir. Trisnawati, Ir. Badaruddin, Ir. Rizhlan Noor.

Purpose of trip / Maksud perjalanan: To observe pest and disease situation in the area as well as collect insect, disease and weed specimens.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

Insect pest and diseases of rice observed were minimal, unlike a month ago when a serious occurence of leaf scald. The population of athropodes preying on insect pests was high. Dragonflies, damselflies and spiders were abundant. A very low population of green leaf hopper, (Nephotettix virescens) was noted thru insect net sweepings.

About 20 species of weeds were collected from the area.

APPENDIX III. C. 4

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-010

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 28 April 1984
Return / Tanggal kembali: 28 April 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Binuang Experiment Station

Accompanied by / Pengikut: Ir. Mahrita Willis, Ir. Trisnawati, Ir. Muchlis, Ir. M. Thamrin, Ir. Syaiful Asyikin, Ir. Badaruddin.

Purpose of trip / Maksud perjalanan: To present lectures and exhibits about pest management to crop protection students of the University of Lambung Mangkurat and to harvest crop protection experiment on peanuts.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

About 50 students and lecturers from the Crop Protection Department of the University of Lambung Mangkurat came. Lectures on Pest Management were presented by myself with the help of Ir. Mahrita Willis. Exhibits on insect pests of crops with their natural enemies were also prepared for them as well as handouts with the listing, description and illustrations of the natural enemies of rice pests. After the lecture we accompanied the group to the field. Crop protection experiments on peanuts were harvested.

Sampling of rice insect pests and their natural enemies were done. A few rice stemborer adult (Scirpophaga innotata and Scirpophage incertulas) and green leaf-hoppers (Nephotettix virescens) and nymphs of the green solder bug (Nezara Viridula) were collected. Damselflies and spiders specially of the genus Tetragnatha and Araneus at the rate of 5-10 individuals per 10 sweep of the insect net were also collected.

APPENDIX III. C. 5

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-011

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 1 May 1984
Return / Tanggal kembali: 1 May 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Banjarbaru

Accompanied by / Pengikut: Ir. Mahrita Willis, Ir. M. Thamrin

Purpose of trip / Maksud perjalanan: To discuss cooperative research with Balai Proteksi Tanaman Pangan on rat control in the monotonous swamp.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

Discussions :

Conference with the Balai Proteksi Chief, Ir. Suroto and his staff Ir. Bahaiddin was held. The meeting was also attended by a representative from Dinas Pertanian Rakyat, Abdul Gani.

The discussions centered on what experiments to conduct and the role of Balai Proteksi and Dinas Pertanian in the cooperative activity. It was decided to try different rodenticides and bait formulations in selected places in the monitoring of the experiments. The baiting studies are expected to bring about the control of the rats in the area as well as provide basic information on the dynamics of rat population.

APPENDIX III. C. 5

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-012

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 5 May 1984
Return / Tanggal kembali: 5 May 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Handil Manarap Experiment Station

Accompanied by / Pengikut: Ir. Badaruddin, Ir. Arif Budiman, Ir. Syaiful Asikin and Ir. Muchlis

Purpose of trip / Maksud perjalanan: To observe crop protection experiment and survey insect pests and their natural enemies on rice.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

This is the second observation on the population dynamics of rice insect pests for the second planting of the year.

Insects collected in adjoining rice fields were white rice stem borer, and leafhoppers. Some plants were attacked by mites and exhibited rusty appearance on the leaves.

There were several natural enemies collected but mostly damselflies and different species of spiders.

APPENDIX III. C. 6

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-013

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Name / Nama: Dr. Bernardo P. Gabriel

Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 8 May 1984

Return / Tanggal kembali: 8 May 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Barambai Experiment Station

Accompanied by / Pengikut: Ir. Muchlis

Purpose of trip / Maksud perjalanan: To survey insect pests and diseases of rice.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

Mostly local varieties and IR36 were surveyed in Barambai. Some of the rice plants were transplanted only for two week while others were already flowering.

Insects observed were few. They include the following: stemborer (Scirpophaga innotata), rice leaffolder (Cnaphalocrocis medinalis) green leafhopper (Nephotettix virescens) and rice bug (Leptocorisa oratoria). Natural enemies observed were damsel flies, dragon flies, and different species of spiders.

Rice diseases observed were Cercospora leaf spot, Helminthosporium leaf spot, Kresek and leaf scald. Not one of these showed high incidence.

It was also observe that in areas which were newly sprayed with pesticides there were hardly any insects whether pests or natural enemies collected by sweeping several times on the treated plants.

APPENDIX III. C. 7

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-014

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Name / Nama: Dr. Bernardo P. Gabriel
Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 15 May 1984
Return / Tanggal kembali: 15 May 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Pelaihari and Tajau Pecah

Accompanied by / Pengikut: Ir. Mukhlis, Ir. Syaiful Asyikin.

Purpose of trip / Maksud perjalanan: To survey for pests and disease of rice and secondary crops.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

We first went to Jorong, Tajau Pecah which is 38 kilo meters from the town proper of Pelaihari. The place is transmigration area where the Balittan has been conducting multiple cropping experiments. Because of limited time we did not have a chance to make a detailed survey of the pest and disease situation in the area.

In the Pelaihari experiment station we were concerned about the damage due to snails on mungbean seedlings. For lack of chemicals like metaldehyde to be use with baits for snail, it was suggested that salt and ashes be spread around the area. I also suggested that this salt and ashes be placed underneath banana bract, or an piles of debris consisting of uprooted weeds. Snail can destroy 30% of the seedling stand.

Other pest observed were :

Rice : green leafhoppers (nephotettix virescencs) stemborer, and rice bugs. Only rice bugs were alarming in number.

Diseases on rice observed were : Cercospora leaf spot, Helminthosporium leaf spot, leaf scald, bacterial leaf blight. They were found in both the local and improved varieties of rice.

On a two-week old corn seedling the following insect pests were observed : corn semi-looper (Chrysodeiis chalcites), corn earworm (Heliothis armigera), corn aphid (Rhopalosiphum maidis), not one of the insect mentioned were of serious inportance at this time. They are observed on various lines of corn being tasted.

APPENDIX III. C. 8

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-015

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Name / Nama: Dr. Bernardo P. Gabriel

Department / Kelompok: Crop Protection

Date of Departure / Tanggal berangkat: 22 May 1984

Return / Tanggal kembali: 22 May 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Binuang Expt. Station

Accompanied by / Pengikut: -

Purpose of trip / Maksud perjalanan: To observe corn experiment, survey for crop pests and deliver seeds of minged beans obtained from the Institute of Plant Breeding University of the Philippine at Los Banos, to the station leader.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

Corn Experiment :

Corn were planted May 12. At this stage no insect injury were noticeable except for some plots where no seeds germinated which could be due to ant attack.

Soy bean plantings were also observed. These were minor leaf feedings of both lepidopterous and Coleopterous insects.

In both soybean and corn plantings, Coccinellid predators, Coelophora inaequalis and Menochilus sexmaculatus were observe in slight numbers indicating the presence of aphids.

Appendix III. D

Quarterly Activity Report by R.G. Manuelpillai
Soil Scientist
April 1 - June 30, 1984

I. Activities

1. Seminar to BARIF Staff titled :

   i. Agrotechnology transfer and the Benchmark Soils Concept

   ii. A proposal on the establishment of a Benchmark Site.

   The Seminar was presented, along with slides.

2. Assisted the Agronomy & Soils Research Staff, BARIF, in the installation of 17 units, dry season 1984 experiments, among which 5 were with a corn crop, 8 with legumes (soybean, cowpea, peanuts, and mung bean), a cropping systems, and 3 with paddy, at the BARIF Experimental Sites -- Unit Tatas, Pelaihari, Barambai, Binuang, Belandean and Sungai Buluh.

3. Assisted the BARIF Staff in the establishment of site at Unit Tatas, where the experimental blocks were well oriented, and the perimeter adequately fenced.

4. Assisted the Researchers at BARIF in the presentation of their Seminars.

5. Established a Plant and Soils Laboratory at BARIF. The Staff can take pride that they are now independent, and capable of determining a complete set of soil chemical analysis for pH, Ec, total N, available P, CEC, exchangeable Ca, Mg, K and Na and extractable Al. We hope to determine organic C, Fe, S and particle size analysis with the arrival of a few laboratory were and chemicals under order. BARIF has rec'd firm orders from Foreign Consultant Firms and Government departments in Kalimantan, for Soil Mechanical and Chemical determinations.

   Laboratory Training :

   Ir. Rohlini, proposed Laboratory in Charge, and Ir. M. Noor are presently being trained in the laboratory, period 1 month. It is also proposed to train the rest of the Agronomy and Soils Researches, in batches of 2, per month.

6. A Manual 'Methods of Soil Chemical Determinations' has been prepared and circulated among the staff, to assist in the envisaged training program, and also to assist customers requesting soil chemical determinations.

II. Consultations and Meetings

April 12, 1984	:	Ir. Leif Petersen and Susanne Hensen, from Kampsak, Banjarmasin, assistance on soil chemical determinations.
April 1984	:	Mr. John Kiefer, Environmental Co-ordinator, on conducting revegetation research, as a part of coal development activities, in South-East Kalimantan.
April 25, 1984	:	Ir. Abdul Rais, PPS, Barito Kuala (Extension Specialist, Agronomy) and his staff. Problems relating to acid sulfate, drainage, and K deficiency, at Sungai Sluang, Tranglang and Berlarang.
May 1 - 4, 1984	:	Discussions with Mr. Alan Hurdus, Project Officer, US/AID; Dr. M. Sudjadi, Director, CSR; Dr. W. Collier, Chief of Party; Mr. Carl Fritz, Training Specialist, RMI.
May 28, 1984	:	Discussion with Dr. Suwarjo, Head, Soil Conservation and Ir. Suharjo, Soil Pedology, CSR and Ir. Hidayat, Agro-Economist, CRIFC, on problems associated with acid sulfate and peats, and their project at Transmigration III Samarinda, East Kalimantan.
May 21, 1984	:	Mr. Keiji Miya, Colombo Plan Expert, and Ir. Masdar attached to the Public Work Department, Banjarmasin, on Soil Chemical Determinations.
June 19, 1984	:	Dr. Hillen H. Sitompul, IPB, discussion on Agronomic and Soils problem associated with acid sulfate and peats, on an integrated pasture development program etc.
June 22, 1984	:	Ibrahim, an Army Veteran/Progressive Farmer from Liang Anggang was advised on land development problems and the in corperation of human faeceas to his crops.

III. Proposed Plan of Work -- for the third quarter

1. To conduct soil characteristic survey of the experimental sites at Unit Tatas and Barabai.

2. To establish a well designed pot experiment in the Green House, at BARIF.

3. To monitor the progress of the on-going experiments.

4. Planning schedule for the installation of wet season 1984/1985 experiments.

5. Designing and establishing a polder in a 1 hectare area at Unit Tatas site, for conducting agro-management experiments, under flooded conditions.

6. Routine soil chemical analysis will be carried out, along with mechanical and water analysis.

APPENDIX III. D. 1

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-016

This report must be typed or filled out neatly in longhand for all trips (field trips, meetings, congresses, etc)
Laporan ini harus diketik atau ditulis tangan dengan rapi dan berlaku untuk semua laporan (perjalanan dinas, rapat, kongres, dll.)

Name / Nama: R.G. Manuelpillai

Department / Kelompok: Soil Science/Agronomy

Date of Departure / Tanggal berangkat: 4 April 1984

Return / Tanggal kembali: 4 April 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: K.P. Pelaihari

Accompanied by / Pengikut: Ir. Muhrizal, Ir. Sulaeman, Ir. Nasrullah, Ir. Trisnawati, Ir. Rosdiah

Purpose of trip / Maksud perjalanan:

i. To assist the BARIF Researchers in the selection of the experimental area and layout.

ii. To demonstrate, and draw representative pre-plant soil samples from the experimental plots.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

The virgin area in close proximity to the Administrative Block at Pelaihari presently under alang-alang and under secondary forest was transversed by foot to demarkate the experimental areas for dry season, planting. The plots were layed out with the following objectives in mind:

i. The major and minor gradients were identified, with respect to slope, and the replicates were located along the major gradient.

ii. Weithin each replication, the long axis of the plot were oriented across the major gradient, if possible.

iii. Border areas of 50 cm width were provided between each replication, and 1 meter between blocks.

iv. The alighnment of blocks was by using the right-angled triangle method viz. 3,4,5, thus establishing a 90° angle at the corners.

v. Pegs were fixed at the four corners of the experimental block, and subdivided into replications.

vi. Representative soil samples were drawn from the surface 0 to 15 cm from each replication, and a composite of replication sample of the whole block. Each sample was a composite of 5 sub-samples drawn from representative areas weithin the replication. The samples were properly labelled, packed in plastic bags and carried to the soil laboratory at Banjarmasin for analytical determinations.

Instructions to the Farm Manager at Pelaihari:

a. The alang-alang to be cut with sickle and removed and stacked outside the perimeter of the block. The root stumps to be uprooted, care being taken to avoid bringing the sub-soil to the surface.

b. The area be plowed to a dapth of 15 cm, crosswise with 15.5 HP tractor available at the farm in the alternative a bullock driven plow be used. The plowing to be followed by 2 harrowing operations, to assist in breaking the clods, before leveling and demarkating plots.

c. Whereever lime application have been recommended, the operation be completed at least 3 weeks before planting operations commence.

APPENDIX III. D. 2

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-017

This report must be typed or filled out neatly in longhand for all trips (field trips, meetings, congresses, etc),
Laporan ini harus diketik atau ditulis tangan dengan rapi dan berlaku untuk semua laporan (perjalanan dinas, rapat, kongres, dll.),

Name / Nama: R.G. Manuelpillai
Department / Kelompok: Soil Science/Agronomy

Date of Departure / Tanggal berangkat: 30 April 1984
Return / Tanggal kembali: 4 May 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: Jakarta and Bogor

Accompanied by / Pengikut: -

Purpose of trip / Maksud perjalanan:

i. To call personally at reputed dealers in scientific laboratory ware -- equipment, glassware and chemicals, and obtain quotations ex-Jakarta, especially on the shelf items.

ii. To meet Dr. M. Sudjadi, Director, Center for Soil Research (CSR), Bogor and request for some laboratory ware on loan.

iii. To meet Mr. Alan Hurdus, Project Office, US/AID and check on the possibility of such purchase of laboratory ware locally.

iv. To meet and discuss matters of interest with Dr. W. Collier, Chief of Party and Mr. Carl Fritz, Administrative Specialist, AARP.

Observation :

1. Called at the following reputed dealers in Scientific Equipment, and inspected the items 'on the shelf' and obtained quotations from : C.V. Sardo Godung; C.V. Sumber Karya, Setio Hardo Ltd.; C.V. Sardo; P.T. Sarmaneta Trading Co; Gama chemicals and Harumsari. In addition to quotations, established personal contact with dealers in the procurement of laboratory items needed thru' post, instead of travelling to Jakarta, an expensive proposition. It was also observed that a wide range of laboratory ware is available in Jakarta, not at one place, but distributed among the

Observation : ...

reputed dealers. The prices quoted ex-stock Jakarta in rupiahs, appear to be moderate (fair) as compared to the FOB prices registered in the International Catalogues. The Laboratory Ware available in Jakarta will be cataloged and available for reference to BARIF Staff and the Consultants who may wish to refer and order from time to time.

2. Mr. Alan Hurdus, Project Officer, US/AID was briefed on the urgency of purchasing some of the laboratory ware locally and the establishment of a Plant and Soils Laboratory, at BARIF, that will assist in a meaningful interpretation of field and glass house experiments.

3. Dr. M. Sudjadi, Director, Center for Soil Research (CSR) was busy, however he did find time to discuss matters over the phone. He sympathesied with our needs, and was unable to comply to our request since CSR is in the process of equipping their laboratories at Bukit Tinggi and Maros. However, he did agree to train our laboratory assistants for periods of one months and also agreed to loan some chemicals, in the event they are not available in the open market.

4. Dr. W. Collier was briefed on the discussions arising from Alan Hurdus and Sudjadi agreeing to the 'Training'. Collier expressed his reservations to the training program as they will demand additional funds, which at the moment are limited. I did agreed to train them at BARIF.

5. Mr. Carl Fritz was briefed on the training program (15 weeks') agreed by NifTAL, University of Hawaii. Also updated travel information on dependents.

6. Weiging Scale -- The sensitive weighing scale was serviced and carried back with me along with a few purchase of glass ware items. Any possibility of carrying cabin baggage was fruitless, as the 'check in' staff insisted on the baggages being check in (and not hand carried). So the risk of mishandling could not be overcome, though the instrument was well packed.

APPENDIX III. D. 3

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-018

This report must be typed or filled out neatly in longhand for all trips (field trips, meetings, congresses, etc), not exceeding 100 – 150 words.
Laporan ini harus diketik atau ditulis tangan dengan rapi dan berlaku untuk semua laporan (perjalanan dinas, rapat, kongres, dll.), tidak lebih dari 100 – 150 kata.

Name / Nama: R.G. Manuelpillai
Department / Kelompok: Agronomy & Soils

Date of Departure / Tanggal berangkat: May 8, 1984
Return / Tanggal kembali: May 8, 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: K.P. Pelaihari

Accompanied by / Pengikut: Ir. Muhrizal

Purpose of trip / Maksud perjalanan:
i. To demonstrate and assist in the installation of the experiment "Effect of N sources (FYM, rhyzobia, urea) on the yields of soybean and cow pea" on a podzolic soil at Pelaihari.
ii. To monitor the performance of the on-going experiments.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

1. On April 25, 1984 the block had received a blanket application of lime at the rate of 2 tons lime/ha., and on May 1, the treatment farm yard manure had been applied. The inorganic fertilizer, blanket and treatments, weighed and packeted in plastic bags were checked, and the placed in the respective plots assigned, along with the inoculum (inoculated soil transported from P.K. Barabai). The fertilizer was then mixed well in a plastic bucket, divided into 4 equal portions, and then applied in a band to the respective plots, as detailed in the lay-out. The fertilizer was then worked into the soil with a cankol or hoe. The soybean cultivar 'galunggung' and 'local' cow-pea were planted in holes dibbled 4 cm apart, and 75 cm between rows, at the rate of 2 seeds per hill. The seed could not be pretreated with dithane M45 and furadan not sprinkled over the seeds as designed, (preventive treatment against pathogen and insects) as these agro-chemicals were not available at the site, in spite of frequent

122

reminders to the Farm Manager that the chemicals should be made available, at the site. The Farm Manager was instructed to apply agro-chemicals dithane M45 or dusban in the soil conditions were ideal for planting operations, as the soil was adequately moist, with the recent heavy rains.

ii. The performance of the on-going experiments :

-The effect of PK and time of N applications on maize crop -- was planted on April 26, 1984, and plant emergence is around 90 to 95%, and are in their physiological growth phase stage 0.45. Plant performance is good.

-The effect of NPK with or without keserite or lime on maize crop was planted on May 1, 1984 and around 50% plant emergence is observed. The land preparation operations (plowing) had been poor, and the data from this experiment are less likely to be uniform.

APPENDIX III. D. 4

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-019

This report must be typed or filled out neatly in longhand for all trips (field trips, meetings, congresses, etc), not exceeding 100 – 150 words.
Laporan ini harus diketik atau ditulis tangan dengan rapi dan berlaku untuk semua laporan (perjalanan dinas, rapat, kongres, dll.), tidak lebih dari 100 – 150 kata.

Name / Nama: R.G. Manuelpillai
Department / Kelompok: Agronomy & Soils

Date of Departure / Tanggal berangkat: June 5, 1984
Return / Tanggal kembali: June 5, 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: K.P. Pelaihari

Accompanied by / Pengikut: Ir. Mohammad Noor

Purpose of trip / Maksud perjalanan:
i. To assist in the top dressing application to PK and time of N applications on maize.
ii. To monitor the progress of the on-going experiments.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

Expt : PK and time of application of N(studies)on maize crop -- The corn plants are in theirphysiological growth stage 2, with the 7th leaf fully emerged. The growth performance is good. Leaf hopper damage is observed, but free from pathogen damage. Furadan (10 kilos/ha) was sprinkled on the leaf whorl to prevent further damage from insect damage. The plots are clean of weeds. The top dressing dose of N was divided into 4 portions, and applied as a side dressing 10 cm away from the base of the plant and covered with soil. Climate favourable for good plant growth.

Expt : NPK placement studies on maize : --- The corn plants are in their physiological growth stage 1.5, with the fifth leaf fully emerged, and growth is moderate. Thinning operations are in progress -- this operation has been delayed due to the absence of the Farm Manager, and due to a lack of proper supervision thinning is not properly done. The Supervisor was advised to pay a close supervison. The low P treated plants are showing P deficency symptoms. Insect and pathogen damage is negligible.

Expt : Source of N on crops soybean and cowpea -- The soybean 'Galunggung', plants are in their stage V2, with four nodes. The leaf surface are yellowish green (rating 2) and slow growth. A few plants were uprooted on the border along with soil, and examined for nodulation. No nodules were observed. It could mean that the rhizobia inoculation was not effective. In contrast, the 'local' cow-pea is performing very well. The leaves are green (rating 4.0) with roots well nodulated, with active rhyzobia as seen with the nodules juicy and pink in colour. Leaf rust and mosaic symptoms observed. The Supervior was instructed to spray Dithane M45 or Selvin to keep down further spread of rust. The plots are clean and free from weeds.

Expt : NPK and Mg, Ca (liming) studies on maize -- The corn plants are in their physiological growth stage 2. The plant stand is not uniform, and neither are the treatments weithin replications. This non-uniformity is probably attributed to a shallow top soil. Plowing was done by wooden implement drawn by bullocks, and has not been effective. the two experiments have been combined and established as a single experiment, and this causing confusion to the researcher/observer.

Note :

i. The corn screening trial is conducted side by side with agronomic experiments. Downey mildew is observed infesting a few species, that should be roughed and burnt immediately. But this is not done, till the Breeder visits the site and take his observations. The best approach is to carry screening trials, a distance away from the agronomic trials.

ii. Action to be taken to replace the Farm Manager immediately, who has reported back to the BARIF Office, at Banjarmasin.

APPENDIX III. D. 5

Banjarmasin Research Institute for Food Crops
Applied Agricultural Research Project : (BARIF)

TRIP REPORT
LAPORAN PERJALANAN

TR-020

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Name / Nama: R. G. Manuelpillai
Department / Kelompok: Agronomy & Soils

Date of Departure / Tanggal berangkat: June 26, 1984
Return / Tanggal kembali: June 26, 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: K. P. Unit Tatas

Accompanied by / Pengikut: Dr. Anwarhar, Director, Ir. Mauliana Damanik, Ir. Muhrizal and Mr. Majid Nocktah S, Publicity Officer.

Purpose of trip / Maksud perjalanan:
i. To monitor the progress of the on-going experiments.
ii. To take photographs of site establishment and crop performances

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal - hal baru, dll.

Expts (two) : The effect of lime, inoculation, and mulching on yields of soybean and peanuts.

Soybean crop -- The soybean cultivar 'Galunggung' is in its physiological growth stage R 4, with 30% of the plants blooming. The treatment that rec'd inoculation with rhyzobia, 2 tons lime/ha, and with mulching is performing better than the rest, with a uniform stand, leaves dark green in colour (rating 4.0) and faster growth. The control plots that did not receive neither inoculum nor lime are exhibiting a poor growth, with uneven stand of plants, leaves greenish yellow and a slow rate of growth. The plots are free from weeds, and infestation by insects and pathogens are negligible. The climatic conditions are quite favourable for good growth. The Researcher was reminded to take plant sample measurements and record weight of stem, roots, nodules and the number of nodules.

Peanut crop -- The peanut cultivar 'Gajah' is in it's blooming stage with 50% of the plants blooming. The treatment that did receive 2 tons lime, inoculum and mulching is performing better than the rest. However, the leaves are yellowish green in colour, revealing N deficency. Nodulation though observed is less effective. The demand for N appears to be higher than anticipated. The plots are clean and free from weeds. Insect and pathogen damage appear negligible.

Expt. : The effect of NPK and Lime on yields of soybean

The sobean cultivar 'Galunggung' is in its physiological growth stage R4, with 30 % blooming. The plant stand is good, but all plants are showing yellowish green leaves, indicating N deficency. The demand for N seems to be pretty high. Among the treatments, the plants growing in the treatment 60kg N, 90kg P_2O_5, and 60kg K_2O with 1000kg lime appears to be the best. The plots are free from weeds, and free from pathogen and insect damage.

Expt : The effect of plant spacing (population density) on yields of mung bean, cowpea, soybean, corn and peanuts.

Among the crops, the performance of soybean and cowpea appear to be the best, but weithin each plot (treatment) the plant stand is less uniform, and was observed to be due to inoculum. The plants that possessed nodulation were dark green in colour and performing well, while those that did not possess nodules were pale yellowish green in colour. The performance of the corn crop is poor, due to poor quality seed material. A top dressing dose of N was recommended to all crops, to assist in crop growth. The crop performance will be watched, before introducing an optional dose of N after 3 to 4 weeks.

Expt. : The effect of cultivation operations on cropping pattern, with corn, cassava, and peanuts.

The performance of the corn crop is poor, and their stand less uniform weithin each treatment. This is probably due to water logging, as the experiment had been established on the lower area's in the site.

In general the performance of the crops and their treatments are revealing vast amount of information on the management of this site (soils). The pre-plant soil data will assist in pinpointing some of the major constraints.

APPENDIX III. D. 6

Banjarmasin Research Institute for Food Crops : (BARIF)
Applied Agricultural Research Project

TRIP REPORT
LAPORAN PERJALANAN

TR-021

This report must be typed or filled out neatly in longhand for all trips (field trips, meetings, congresses. etc), not exceeding 100–150 words.
Laporan ini harus diketik atau ditulis tangan dengan rapi dan berlaku untuk semua laporan (perjalanan dinas, rapat, kongres, dll.), tidak lebih dari 100 – 150 kata.

Name / Nama: R. G. Manuelpillai

Department / Kelompok: Agronomy and Soils

Date of Departure / Tanggal berangkat: June 27, 1984

Return / Tanggal kembali: June 27, 1984

Principal Locations Visited / Tempat-tempat yang dikunjungi: K. P. Belandean

Accompanied by / Pengikut: Ir. M. Noor and Ir. Chairuddin

Purpose of trip / Maksud perjalanan:
i. To monitor the progress of the on-going experiments.
ii. To assist in the application of the top dressing dose of N, as a foliar spray.

Observations (factors requiring action, new items, etc.)
Hasil pengamatan (factor-factor yang memerlukan penanganan, hal-hal baru, dll.

Expt. : To study the effect of souces of foliar fertilizer as a top dresser on the yields of paddy.

The seed nursery was planted with IR 42 on April 20, 1984 and transplanted on May 24. The plant stand is uniform weithin treatments, but growth is slow. The plants growing on plots that received 120kg N, 60kg P_2O_5 and 50kg K_2O are performing better than the control plots. The foliar fertilizer's were weighed and diluted with water as specified, and applied as a spray to the foliage, with a 1ter capacity spray cans. The water in the plots were standing at a depth of 5cm, plots clean of weeds, and earthen bunds well raised. Leaf blight damage was observed, but not severe. Insect damage is relatively small.

Expt.: Effect of lime and phosphate applications on yields of paddy.

The seed nursery was planted in the early part of April 1984, and transplanted on May , 1984, cultivar IR 50. The plants are standing well, though a few missing

---

with cultivar IR 50, and transplanted on May , 1984. The performance of paddy is good, with plant stand uniform, except a few plants were observed missing. The response due to lime is slight, probably due to the soil remaining submerged for a long time, and thus less oxidation, resulting in an increase in acidity. Effect of lime will be more pronounced, if applied to the wet season crop of paddy. The response due to P is still not visible. The plots are clean , with raised bunds. Leaf blight is observed. Water is standing at 5cm above the ground. Conditions ideal for good growth.

APPENDIX III

QUARTERLY ACTIVITY REPORTS FOR THE AARP/RMI SPECIALIST TEAM AT THE MAROS RESEARCH INSTITUTE FOR FOOD CROPS

APPENDIX IV

QUARTERLY ACTIVITY REPORT FOR THE AARP/RMI SPECIALIST AT THE GONDOL SUBSTATION FOR INLAND FISHERIES

APPENDIX V

MONTHLY FINANCIAL REPORTS AS OF JUNE 30, 1984

INTER-OFFICE CORRESPONDENCE

TO : Mr. Sudasrip Hardjoprayitno, AARP Project Leader.

DATE : June 8,1984

FROM : Dr. W.L. Collier. wllfCollier

REF. :

SUBJECT : Monthly Financial Report
Applied Agricultural Research Project as of April 30,1984.

The following data is submitted as requested with a summary table attached:

I. Technical Assistance

1. Sixteen RMI experts were on duty as of April 30,1984. Dr. Hobart Frank Peters entered duty as Large Animal Breeder Expert on April 1, for an 18 months assignment to CRIAS. Mr. Sudjindro Abdulmuin entered duty the same date as Construction Expert for an 18 month assignment with the AARP Implementation Unit. We expect Dr. Ruth Mary Gatenby to arrive about May 1, as Environmental Physiologist for an 17 month assignment to CRIAS.

2. Status of Technical Assistance

	Contracted	Supplied/ Expended	Committed*	Balance
a. Longterm Manmos	630	213	431	199
b. Short term Manmos	24	4.4	4.4	19.6
c. Funding	6,468		4,776.2**	1,691.8

* To end of existing RMI employee contracts.

** Does not include miscellaneous items e.g. educational allowance, visa extensions, contingency for inflation, etc. for period beyond April 1984. It does include commitments for social charges and overhead which were omitted in previous reports.

cont'd.....2/

133

II. Training

1. Progress as of April 30,1984.

	RMI	Outside RMI	T o t a l
Target			
No.	200	7	207
Manmos.	557	6.2	563.2
Funding ($1,000)	1,849.2	NA	NA
Completed			
No.	65	7	72
Manmos.	127.89	6.2	134.09
Funding ($1,000)		NA	NA
Balance Remaining			
No.	135	-	135
Manmos.	429.11	-	429.11
Funding ($1,000)		-	

III. Construction

1. Funds available in USAID Loan Agreement	: $ 7,140,000.00
2. Expended as of April 30,1984 (Prefinancing Rp. 421,048,140.00) ($1=Rp.970)	: $ 434,070.24
3. Balance to be expended	$ 6,705,929.76

IV. Equipment

1. Funds available in Loan Agreement	: $ 6,061,000.00
2. Expended as of April 30,1984 (Prefinancing Rp. 4,000,000.00) ($1=Rp.970)	: $ 4,123.71
3. Balance to be expended	: $ 6,056,876.29

V. Vehicles

1. Funds available in Loan Agreement (Including 10% contingency and 30% inflation)	: $ 1,423,600.00
2. Expended as of April 30,1984	: $ 776,591.00
3. Balance to be expended	: $ 647,009.00

Copy: - Mr. Sadikin Sumintawikarta, DC AARD.
- Mr. A. Hurdus.
- Dr. W. Collier.
- Mr. R. Saunders.

-/ls.

RMI

INTER-OFFICE CORRESPONDENCE

DATE : July 4,84

TO : Mr.Soedasrip Hardjoprajitno
AARP Project Leader

FROM : Moestadjab.,Administrative Specialist.

REF. :

SUBJECT : Monthly Financial Report
Applied Agricultural Research Project as of May 31,84

The following data is submitted as requested with a summary table attached :

I. Technical Assistance

1. Eighteen RMI experts were on duty as of May 31,1984. Dr.Ruth Mary Gatenby entered duty on May 1, 1984 as an Environmental Physiologist for a 17 months assignment to CRIAS; and Mr. Moestadjab entered duty on May 20, 1984 as an Administrative Specialist for a 16months assignment.

2. Status of Technical Assistance

	Contracted	Supplied/ Expended	Committed*	Balance
a.Long term Manmos	630	230.3	465	165
b.Short term Manmos	24	4.4	4.4	19.6
c.Funding	6,468	2,070.9	4,811.6**	1,656.4

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* To end of existing RMI Employee contracts.

** Does not include miscellaneous items e.g. educational allowance,visa extension,contingencies for inflation,etc. for period beyond May 1984.It does include commitments for social charge and overhead only.

cont'd 2

II. Training

	RMI	OUTSIDE RMI	TOTAL
TARGET			
NO	200	7	207
Manmos	557	6.2	563.2
Funding($1,000)	1,849.2	NA	NA
COMPLETED			
NO	72	7	79
Manmos	133.05	6.2	139.25
Funding($1,000)	460.05	NA	NA
BALANCE REMAINING			
NO	128	NA	
Manmos	423.95		
Funding($1,000)	1,389.15		

III. CONSTRUCTION

1. Funds available in USAID Loan Agreement : $ 7,140,000.00
2. Expended as of May 31,84
   (Prefinancing Rp 421,048,140.00) $ 434,070.00
   $1=Rp970 FYs 81/82 - 82/83
3. Balance tobe expended $ 6,705,930.00

IV. EQUIPMENT

1. Funds available in Loan Agreement : $ 6,061,000.00
2. Expended as of May 31,84
   (Prefinancing Rp 4,500,000.00
   $1=Rp1,000) 4,500.00
3. Balance tobe expended $ 6,056,500.00

V. VEHICLES

1. Funds available in Loan Agreement
   (including 10% contingency and
   30% inflation) : $ 1,423,600.00
2. Expended as of May 31,84 : $ 776,591.00
3. Balance tobe expended : $ 647,009.00

Monthly Financial Report
Applied Agricultural Research Project
as of May 31, 1984

Copy : - Mr Sadikin Sumintawikarta
- Mr. A. Hurdus.
- Dr. W.L. Collier.
- Mr. R. Saunders.

AARP MONTHL FINANCIAL SUMMARY

as of May 31,1984

NO.	I T E M	FUNDS		EXPENDED		BALANCE	
		GRANT	LOAN	GRANT	LOAN	GRANT	LOAN
1	2	3	4	5	6	7	8
1.	TECNICAL ASSISTANCE	$ 6,468,000		$ 2,070,894		$ 4,397,106	
2.	T R A I N I N G		$ 1,849,157		$ 460,050		$ 1,389,107
3.	CONSTRUCTION		7,140,000		434,070		6,705,953
4.	E Q U I P M E N T		6,061,000		4,500		6,056,500
5.	V E H I C L E		1,423,600		776,591		647,009
	T O T A L	$ 6,468,000	$16,473,757	$ 2,070,894	$ 1,675,211	$ 4,397,106	$14,798,569

M E M O

To : Sudasrip Hardjoprayitno.,AARP Project Leader. Date: July 6,1984.
From : Moestadjab.
Subject : MONTHLY FINANCIAL REPORT
APPLIED AGRICULTURAL RESEARCH PROJECT
as of June 30,1984.

The following data is submitted as requested with a summary table attached.

1. Technical Assistance

1. Eighteen RMI experts were on duty as of June 30,1984. Mr. Laurence C. Walker to be expeceted to enter duty on July 03,1984, as a Forestry Expert (short term) for an 1.6 month assignment; and Mr. James S. Bethel to be expected to enter duty on July 15,1984 for a 2 months assignment as a Forestry Expert.

2. Status of Technical Assistance

	Contracted	Supplied/ Expended	Committed	Balance
a. Longterm Manmos.	630	248.3	431	199
b. Shortterm Manmos.	24	4.4	8.1	15.9
c. Funding	6,468	2,194.04	4,858.7	1,614.3

* To end of existing RMI employee contracts.

** Does not include miscellaneous items e.g. educational allowance, visa extentions, contingency for inflation, etc. for period June 1984. It does include commitments for social charge and overhead only.

CONT'D.....2/

II. Training

1. Progress as of June 30, 1984

	RMI	Outside RMI	T o t a l
Target			
No.	200	7	207
Mammos.	557	6.2	563.2
Funding ($1,000)	1,849.2	NA	NA
Complete			
No.	82	7	89
Mammos.	150.98	6.2	157.18
Funding ($1,000)	474.56	NA	NA
Balance Remaining			
No.	118	-	135
Mammos.	406.02	-	431.57
Funding ($1,000)	1,374.64	-	1,374.64

III. Construction

1. Funds available in USAID Laoan Agreement	: $ 7,140,000.00
2. Expended as of June 30,1984 (Prefinancing Rp. 421,048,140) ($1=Rp.970 - Fy 81/82 - 82/83)	: $ 434,070.24
3. Balance to be expended	: $ 6,705,929.76

IV. Equipment

1. Funds available in Loan Agreement	: $ 6,061,000.00
2. Expended as of June 30,1984 (Prefinancing Rp. 4,500,000.00) ($1=Rp.1,000)	: $ 4,500.00
3. Balance to be expended	: $ 6,056,500.00

CONT'D.....3/

v. Vehicles

1. Funds available in Loan Agreement (Including 10% contingency and 30% inflation)	: $	1,423,600,00
2. Expended as of June 30,1984	: $	776,591.00
3. Balance to be expended	: $	647,009.00

Copy: - Mr. Sadikin Sumintawikarta, DC AARD.
- Mr. A. Hurdus.
- Dr. W.L. Collier.
- Mr. R. Saunders.

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m/ls.

AARP MONTHLY FINANCIAL SUMMARY
as of June 30,1984

No.	I T E M	F U N D S		EXPENDED		BALANCE	
		GRANT	LOAN	GRANT	LOAN	GRANT	LOAN
1	2	3	4	5	6	7	8
1.	TECHINCAL ASSISTANCE	$ 6,468,000		$ 2,194,041		$ 4,273,959	
2.	T R A I N I N G		$1,849,157		$ 474,563		$ 1,374,594
3.	CONSTRUCTION		$ 7,140,000		434,070.		6,705,930
4.	EQUIPMENT		6,061,000		4,500.00		6,056,500
5.	V E H I C L E		1,423,600		776,591.00		647,009
	T O T A L	$ 6,468,000.00	$16,473,757.00	$ 2,194.041	$ 1,689,724.00	$ 4,273,959	$14,784,033

APPENDIX VI

LIST OF AARP/RMI SHORT TERM TRAINING PARTICIPANTS AS OF JUNE 30, 1984

THE END GOOD BYE

APPENDIX VI

LIST OF AARP/RRI PARTICIPANTS AS OF JUNE 30 1984

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
	DEPARTURES					
1.	Darti Satyani	RIIF/Bogor	Freshwater Prawn Program	Univ. of Hawaii, Manoa, Honolulu	Jun. 2 - Aug 5, 84	0,97
2.	Wafiah Akib	SURIF/Sukamandi	Integrated Pest Management	Purdue Univ, Lafayette, USA	Jun.15 - Jul.20, 84	0,5
3.	Hentarsih Suharto	MORIF/Maros	-do-	-do-	Jun.15 - Jul.20, 84	0,5
	CONTINUING IN TRAINING					
4.	K. Dwiyanto	RIAP/Bogor	Rabbit Research Program	Oregon State Univ, Oregon, USA.	May. 4 - Aug 14, 84	1,58
5.	B. Sudaryanto	RIAP/Bogor	-do-	-do-	May 14 - Aug. 14, 84	1,58
6.	Ami Lasmini	RIAP/Bogor	-do-	-do-	May 14 - Aug. 14, 84	1,58
7.	Agus Nurhadi	RIAP/Bogor	-do-	-do-	May 14 - Aug. 14, 84	1,58
8.	S. Prawirodigdo	RIAP/Bogor	-do-	-do-	May 14 - Aug. 14, 84	1,58
9.	E. Djamaludin	CRIAS/Bogor	Research Communications Applicable to animal science.	Winrock International Arkansas, USA.	May 28 - Aug. 5, 84	1,13
10.	O. Kosasih	RIAP/Bogor	-do-	-do-	May 28 - Aug. 5, 84	1,13
11.	Suparman K.	FPRI/Bogor	Individual Research on lateral strength of fastener.	USDA Forest Products Laboratory, Madison, Wisconsin.	Mar.26 - Sept.25, 1984	3,2
12.	P. Sukartana	FPRI/Bogor	Wood Entomologi, Ambrasia Beetles	University of Wisconsin, Madison, USA.	Jan. 3 - Jul. 2, 1984	5.94

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
	RETURNEES					
13.	E. Suratman	RIAP/Bogor	Theory of Field Machinery	Asian Institute of Technology Bangkok, Thailand.	Jan. 3 – Apr. 7, 1984	3.17
14.	H. Surachman	do	do	do	dc	3.17
15.	Farid N. Saleh	BARIF/Banjarmasin	Dissemination of Research Results	International Rice Research Institute, the Philippines	Nov. 1 – March 1984	4.00
16.	F. Kasryno	CAER/Bogor	The Structure of Economic Research and Data Processing Management Training Program.	Economic Research Service, USDA, and Dept. of Agricultural Economics, Michigan State University.	Jan 16 – 27, 1984	0.39
17.	C.A. Rasahan	do	do	do	do	0.39
18.	Hermanto	do	do	do	do	0.39
19.	Yanti Rina Darsani	BARIF/Banjarmasin	Techniques and Methodologies of Agric. Economics	International Rice Research Institute, the Philippines	Oct. 13 – Dec. 9, 1983	1,93
20.	Maria T. Anitawati	CAER/Bogor	do	do	do	1,93
21.	N. Mahrita Willis Abidin	BORIF/Banjarmasin	Integ. Pest Management	do	Aug. 15 – Nov.25, 1983	3,37
22.	Djajeng Sumangat	BORIF/Bogor	Determination & Prevention of Post Harvest Food Losses	Univ. of Idaho, Postharvest Inst. for Perishables, Falls U.S.A.	Sept. 4 – Oct.14, 1983	1,36
23.	Dudung Muhidin	BORIF/Ps. Minggu	do	do	do	1,36
24.	Iis Syamsiah	SURIF/Sukamandi	Water Management	International Rice Research Institute, the Philippines	Aug.10 – Sept.16, 1983	1,23

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
25.	Nadjib Noor	MORIF/Maros	Training Computer	The Asian Inst. of Technology Reg. FARMAP Trg. Center for Asia & The Pacific, Thailand	Aug. 8 - Aug. 26, 1983	0.63
26.	Hadijah A. Dahlan	do	do	do	do	0.63
27.	Sri Sumastri	RIIF/Bogor	Brachkish Water Aquaculture	Taiwan Fisheries Research Keelung, Taiwan	July 9 - Sept. 9, 1983	2
28.	Amin Ismail	RIIF/Jakarta	do	do	do	2
29.	Agus Priyono	RIIF/Bali	do	do	do	2
30.	Supriyono Eko Wardoyo	RIIF/Maros	do	do	do	2
31.	Tadiuddin Dalay	RIIF/Bogor	do	do	do	2
32.	Tridjoko	RIIF/Bali	do	do	do	2
33.	Waluyo Subani	RIMF/Jaakarta	Library Training	International Center for Living Aquatic Res. Management in Manila, the Philippines	June 6 - July 6, 1983	1
34.	Endang Pratiwi	CRIF/Jakarta	do	do	do	do
35.	Rachkmat	NLAS/Bogor	do	do	do	do
36.	Tuti Sulasmi	NLAS/Bogor	do	do	do	do
37.	Novemy A. Wahyudi	RIIF/Bogor	Aquaculture Trg. Program	Auburn Univ. Alabama, USA	March 18 - July 15,1983	4
38.	Purwito Martosuboroto	RIMF/Jakarta	R&D Management Consultancy Training	Denver Res. Inst. Denver	May 23 - July 1, 1983	1.3
39.	Iti Sri Duriat	LERIH/Lembang	Elisa Techniques	American Type Culture Center in Rockville Maryland, USA.	Feb. 20 - June 9, 1983	3,6

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
40.	Nani Sumarni	LERIH/Lembang	Interdisciplinary Research in Plant Breeding	Asian Vegetable Res. & Dev.	Nov. 7 - May 7, 1983	6
41.	Etti Purwati	do	do	do	do	do
42.	Yoyo Sulyo	do	do	do	do	do
43.	R. E. Suriaatmadja	do	do	do	do	do
44.	Kosasi Kadir	FPRI/Bogor	Woodworking & Drying & Research Project Planning & Evaluation.	Forest Products R&D Inst. Los Banos, the Philippines	March 7 - April 7, 1983	1
45.	Mas Ismunadji	BORIF/Bogor	Spec. Trg. in Upland Crops Physiology	Asian Vegetable Res. & Dev. Center, Taiwan.	Nov. 11 - Dec. 1, 1983	0.7
46.	Mochamad Sirdan	CAPP/Jakarta	Project Preparation & Evaluation in Ag. and Rural Development	Statistical, Economic and Social Research & Training Center for Islamic Countries Turkey.	Oct. 18 - Nov. 12, 1982	0.9
47.	Syafril Lamsayun	CARP/Jakarta	Procurement Training	TransCentury Corp, USA.	Oct. 15 - Nov. 14, 1982	1
48.	Abdussamad Syahrani	BARIF/Banjarmasin	Procurement Training	TransCentury, USA.	Oct. 15 - Nov. 14, 1982	1
49.	A. L. Laporangi	MORIF/Maros	do	do	do	1
50.	Warsito Hutomo	CAQ/Jakarta	Agric. Proj. Planning & Analysis, Section II	USDA, Washington, DC, USA.	Sept. 7 - Nov. 11, 1982	2,2
51.	Mohamad Mansur	CRIIC/Bogor	do	do	do	do
52.	Hafni Zahara Syukri	CARP/Jakarta	do	do	do	do
53.	Wahyadi Sosrowardoyo	CRIFI/Jakarta	Applic. and Diffusion of Agric. Res. Results to the Community Level.	Iowa State Univ. USA.	Aug. 25 - Oct. 1, 1982	1,3

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
54.	Sofyan Ilyas	RIFT/Jakarta	Determination & Post Preventation of Postharvest Food Losses.	Cornell University, USA	Sept. 6 - Oct. 13, 1982	1,3
55.	Achmad Hidayat	CAQ/Jakarta	Plant Quarantine	USDA, Washington, DC, USA.	July 19 - Sept.17,1982	2,3
56.	Dewa M. Tanteraa	BCRIF/Bogor	Integrated Pest. Mgnt.	Purdue University, USA.	June 9 - July 23,1982	1,5
57.	Sudiarto	CRIIC/Bogor	Agric. Research Method	Kansas State Univ..USA	May 31 - July 23,1982	1,8
58.	Lalu Sukarno	BORIF/Bogor	do	do	do	do
59.	Siti Sufiani	MCRIF/Maros	do	do	do	do
60.	M. Saleh Pandang	MORIF/Maros	do	do	do	do
61.	Wafiah Akib	MORIF/Maros	do	do	do	do
62.	Tambak Manurung	CRIAS/Bogor	Agric. Research Method	Kansas State Univ. USA	May 31 - July 23, 1982	1,8
63.	Didi Suardi	CRIFIC/Bogor	do	do	do	do
64.	Yono C. Rahardjo	CRIAS/Bogor	do	do	do	do
65.	Budhojo Sukotjo	Prof. & Proj. Form Unit/Jkt.	Agric. Research Mgnt.	Washington, DC and Hawaii, USA.	June 6 - 12, 1982 June 18 - 21, 1982	0.4
66.	Tambunan S.M. Manurokol	BORIF/Bogor	Estab. Data Bases & Analist. Syst. for Econ. Decision Making in Agric.	University of New Mexico, USA.	June 6 - Aug.13, 1982	2,3
67.	Rachmat Kartapradja	LRIF/Lembang	Veg. Crop. Prod. & Market	Rutgers University, USA	July 12 - Aug. 20,1982	1,3

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
68.	Artaty Wiiono	CRIFI/Jakarta	Ag. Comm. & Med. Strategy	Iowa State University, USA	July 12 - Aug. 20,1982	1,3
69.	Abisono	TARII/Tg. Karang	do	do	do	do
70.	Adi Widjono	CRIFC/Bogor	do	do	do	do
71.	T. H. Manqunsonq	Req. Aq. Quarant/ Bogor	do	do	do	do
72.	Fathan Muhadjir	BORIF/Bogor	Wheat & Maize Phys.	CIMMYT, Mexico City, Mexico.	July 20 - Aug. 25,1982	1
73.	Nurlaila Hasbullah	BORIF/Banjarmasin	Rice Production	IRRI, the Philippines	July 1 - Aug. 27,1982	1,9
74.	Nurul Aida	BORIF/Banjarmasin	do	do	do	do
75.	Achmad Dimyati	BORIF/Bogor	Tech. & Econ. Aspects of Soybean Production	University Illinois, USA	May 10 - Aug. 6, 1982	2,9
				TOTAL MANMONTHS OF TRAINING UNDER RMI CONTRACT		144,02

NO.	N A M E	EMPLOYING OFFICE	COURSE/OBJECTIVES	INSTITUTION/COUNTRY	DURATION	MAN-MOS
	TRAINING OUTSIDE RMI CONTRACT					
76.	Achmad Sarnita	RIIF/Bogor	Study Milkfish Cultiv. Method.	SEAFDEC/Philippines Inst. of Marine Biology & Gulf Coastal Fish. Center/USA SEARCA/the Philippines	July 5 - Aug. 15, 1981	1,4
77.	Haniah	do	do	do	do	1,4
78.	Suningat	NIAS/Bogor	Regional Micrographic	SEARCA/the Philippines	Jan. 10 - 23, 1982	0.5
79.	Sumardi Dahlan	do	do	do	do	0.5
80.	Azis Arifin	LERIF/Lembang	The Decimal Long of Cip. Comparative Study for TUBER Crops Research Comparative for Wheat Research	Pery CIAR/Columbia CIMMYT/Meico	Feb. 22 - 26, 1982 Feb. 29 - March 1, 1982 March 3 - 4, 1982	0.3
81.	Surahmat Kusumo	CRIFC/Bogor	do	do	do	0.3
82.	Sundaru	BORIF/Bogor	Management Agric. Organ.	USDA/USA	May 17 - July 9, 1982	1.8
				TOTAL MANMONTHS TRAINING OUTSIDE RMI CONTRACT		6,2
					GRAND TOTAL	149,22

AGENCY FOR AGRICULTURAL RESEARCH AND DEVELOPMENT
BANJARMASIN RESEARCH INSTITUTE FOR FOOD CROPS
APPLIED AGRICULTURAL RESEARCH PROJECT / RI-USAID

RMI Inc,
Jalan Mayjen Sutoyo S. No. 1134 A
P.O. Box 114
BANJARMASIN - INDONESIA

Telepon : 3187
Telex : 39472 RMI BJM

RESEARCH ACTIVITIES PLANNED FOR THE YEAR 1984/1985

1. ESTABLISHMENT OF A PLANT & SOILS LABORATORY AT BALITTAN.

The determinations carried out at this laboratory will bear a high degree of precision, to ensure reliability and duplicability or reproduction of data, otherwise classifications and technology transfer based on erroneous data will be faulty and subject to question.

a. Training of laboratory personnel :

A Laboratory Chemist and 3 laboratory assistant will be trained to conduct routine analytical determinations, on internationally accepted methods of determinations, preference to methods described by the US Department of Agriculture (Soil Survey Investigations Report No. 1).

b. Analytical determinations :

i. Soil mechanical analysis -- Hydraulic conductivity on saturated and un-saturated samples; permeability; bulk density; particle fractionation and particle size analysis.

ii. Soil chemical analysis -- pH; Ec; CEC; exchangeable Ca, Mg, K, Na, and Al; organic carbon; total N and available P.

iii. Plant (tissue) analysis -- N; P; K; Al; Si and S.

iv. Water analysis -- pH; Ec; SO_4; and O2 (dissolved)

2. SITE CHARACTERISATION AND IDENTIFICATION :

i. An acid sulfate site at Unit Tatas

ii. A peat soil at Barambai

iii. and, an up-land soil at Barabai

-- Soil profiles will be examined, described and horizons analysed and classified based on Soil Taxonomy & the equivalent National System.

-- Soil auger samples at each 100 meter distance will also be examined, to study degree of variance.

3. AGRO-MANAGEMENT EXPERIMENTS :

A total of 26 experiments have been planned by the Agronomy and Soils Research Staff, at Balittan, among which 15 experiments will be laid in the dry season, and 11 in the wet season 1984/1985. The experiments have been revised, with the hope of acieving maximum and meaningful data collection.

-- Land preperation, pre and post plant soil sampling, cultural practices and crop monitor -- germination %, plant height measurements, plant sample collection, disease count rating harvest data, and running of analysis of variance, and regression analysis.

4. WATER MANAGEMENT STUDIES :

   i. Hydrology measurements and water quality testing.

   ii. Fluctuations in the water table and its effect on the oxidation of pyrites.

   iii. Piezometer studies on the quality of water at depths.

5. WORKSHOP AND TRAINING :

No formal training is proposed except that they will be trained on a person to person (on the job) basis as we go along. The laboratory staff at the Analytical Laboratory, and the Research Staff in the field. A guided tour will be considered in July 1984, and later in February 1985, when the crops are in their peak growth period (2 month of age) during which period responses are vicible. A workshop will be organised with the establishment of the proposed benchmark sites (if agreed).

6. SEMINARS AND PUBLICATIONS :

Assist the Balittan Staff in preparing material for seminar and publication of their experimental findings.

R.G. Manuelpillai
Soil Scientist, RMI/AARP

Dr. Kevitt D. Brown
April 15, 1984

ACTIVITIES OF A BARIF PLANT BREEDING CONSULTANT
1985 - 1986

Progress has been made at BARIF in most aspects of plant breeding during the years 1983-1984. But there is still a long way to go before the program will be fully operational and productive. A plant breeding consultant can help to fill the gap during the next two critical years by providing expertise, training, and encouragement to the young, developing BARIF breeding staff.

Most of the work in the next few years will be a continuation and follow-up of the improvements already occurring. A few new projects will be tackled, but mostly the breeding research effort needs to be strengthened into a routine, progressive system which can function on its own and take the leadership for varietal development in the swampy areas of Indonesia.

Staff Training : Consultant will provide formal and informal training of breeding staff in all aspects of plant breeding and seed technology. Breeding methods used must be made routine for efficient handling of the program. The consultant will also continue to help the staff to go for training and higher degrees. Special training must continue to be given to the coordinator of the plant breeding department to be able to manage the large program efficiently. Staff must also be trained to use the deepwater tanks, screen houses, fully irrigated fields, seed laboratory, and seed storage facilities which are to be developed at Banjarbaru.

~~Experiment Management : The biggest weakness at BARIF continues to be farm and experiment management. Much of this is beyong the role of a plant breeding consultant because it involves management of money which is currently done by BARIF administrators and not researchers. Nevertheless,~~

the consultant is needed to encourage diversion of more of the operational budget to rat and bird control and to encourage some researchers and farm personnel to work harder and be more accurate in their taking of data. The consultant will have to try different methods to give incentives for better work at all levels in the breeding program and to prove to the BARIF administration that the plant breeding coordinator is capable of handling the responsibility of managing the department budget.

Seed Program : Improvements in the seed program are just beginning and will need to be expanded and fortified as the station is moved to Banjarbaru. The consultant will train staff and develop a grain laboratory to do simple chemical analyses for amylose content, gel consistency, alkali digestability, and protein content, as well as provide routine physical measurements of grain samples provided by BARIF staff. The consultant will also continue to develop the new created central seed storage system. Once the fully irrigated seed increase facility, cold storage rooms, and seed driers at Banjarbaru are operational, considerable modification of the program can be expected, as overseen by the consultant.

Crossing Program : The breeding staff have learned the mechanics for making crosses and early generation selections for rice and corn but will need the help of the consultant to develop this into a routine program which can run by itself.

Selection Program : The consultant will provide expertise in developing and refining varietal selection methods in the field, deepwater ponds, and greenhouses.

Varietal Testing and Release : A linkage between BARIF and Dinas Pertanian was recently made for the testing of elite tidal swamp rice breeding lines at sites throughout South Kalimantan. Multilocation testing will greatly improve the success of BARIF breeding efforts. The consultant will help to monitor and support this system as it becomes established. He will set up a similar linkage for development of deepwater or lebak rices, and possibly other crops. Two rice varieties were released in 1983-1984 and two or three more rice varieties are expected to be

released in 1985-1986 by BARIF for the swampy areas of Indonesia. The consultant will help to accomplish this goal.

Data Manipulation : Because of a chronic shortage of breeding staff, the consultant will help to computerize the breeding program. Nursery plans, data analysis, and even plot labels can be made on computer to reduce the work load and improve the accuracy of the program.

Publication : Consultant will continue to help the breeding staff and others to interpret their data and publish in national and international journals.

Surveys and Germplasm : Breeding priorities and objectives need to be further refined, particularly for East and Central Kalimantan, Java, and South Sumatra. The consultant will travel with staff to make surveys of these areas and will write a comprehensive strategy to develop rice, corn, and legumes for the various agro-ecosystems of the tidal swamp and lebak swampy areas of Kalimantan, Sumatra, and Java. Local cultivars will be collected to add to the germplasm bank. Also the the consultant will continue to help in the acquisition of rice, and palawija lines from breeding programs outside of Kalimantan.

Indonesian Coordinated Swamp Rice Improvement Program : BARIF has the mandate for the swampy regions of Indonesia. While there are currently stations in South and Central Kalimantan, Java, and South Sumatra, a uniform network for testing varieties throughout these areas has not yet been established. The consultant will begin the process of developing such a network with scientists throughout Indonesia, coordinating it through BARIF.