

PROJECT COMPLETION REPORT OF
PEREZ-GUERRERO TRUST FUND PROJECT
OF INTENSIFYING THE UTILIZATION OF OPERATIONS RESEARCH
IN THE MANAGEMENT OF AGRICULTURE DEVELOPMENT PROJECT
(JUNE 1991 - DECEMBER 1992)

PGTF PROJECT MANAGEMENT
DEPARTMENT OF AGRICULTURE
MALAYSIA

30 MARCH 1993

TABLE OF CONTENTS

TOPICS	PAGE
I. BACKGROUND	1
II. PROJECT OBJECTIVES	1
III. PROJECT OUTPUT	1
IV. PROJECT MANAGEMENT	2
V. PROGRESS OF PROJECT	3
Exploratory visit to participating countries	4
Expert consultation	4
Workshop on OR for senior executives	4
Training of trainers	5
Hardware and software acquisition	5
In-country training	6
Exposure visit by project management	6
Supervisory visit for in-country	6
Evaluation workshop	7
VI PROJECT RESULTS	8
VII FINANCIAL PROGRESS	9
VIII CONCLUDING REMARKS	9
LIST OF TABLES	
Table 1: PGTF Project Scheduled Activities	7
Table 2: Project Outputs	8
APPENDICES	
Appendix I :List of participants for Workshop on OR for Senior Executives	1
Appendix II :List of speakers for Workshop on OR for Senior Executives	3
Appendix III:List of participants for Training of Trainers	4
Appendix IV :Details of Hardware and software acquired by participating countries	7
Appendix V :Report of Evaluation Workshop	
Appendix VI :Audited Statement of Account of PGTF Project	

PROJECT COMPLETION REPORT OF
PEREZ-GUERRERO TRUST FUND PROJECT
OF INTENSIFYING THE UTILISATION OF OPERATIONS RESEARCH
IN THE MANAGEMENT OF AGRICULTURE DEVELOPMENT PROJECT
(JUNE 1991 - DECEMBER 1992)

I. BACKGROUND

1.1 The Department of Agriculture, Malaysia (DOA) was awarded this project in the context of regional cooperation within ASEAN. A sum of US\$ 110,000 was received on 17th July 1991 through the Ministry of Foreign Affairs, Malaysia. All ASEAN countries were invited to participate but only Indonesia, Malaysia, Philippines and Thailand responded.

1.2 The rationale for the formulation of this project was to promote the use of Operations Research (OR) in the participating countries. The primary purpose of OR is to see if it is possible to identify the best way of managing agriculture projects. The application of OR will ensure better project planning and management as it helps to optimise, avoid cost overruns and delays.

II. PROJECT OBJECTIVES

2.1 The overall goal of this project is to enhance the utilization of OR techniques in the management of agriculture development projects. The wide usage of these techniques will contribute to better management of agriculture projects. This will inevitably contribute to increased production and thus higher income to farmers.

2.2 Within the overall goal, the specific objectives of this project are:

- i) To increase the competence of officers in participating countries in the use of OR techniques;
- ii) To intensify the utilization of OR techniques in the management of mini-estates, group farms and other development projects and
- iii) To develop computer-based system that facilitates and enhance the management of mini-estates, group farms and other agriculture development projects.

III. PROJECT OUTPUTS

3.1 The outputs of the project are:-

- i) Number of officers trained in the use of OR techniques.
- ii) Number of incidences these techniques are applied.

IV. PROJECT MANAGEMENT

4.1 This project will be executed, managed and coordinated by the Malaysian Department of Agriculture (MDOA). The project management comprised of the following:

Project Coordinator	- Dato' Abu Bakar Mahmud (Up to 31st October 1992) - Mr Abdul Jamil Mohd Ali (From 1st November 1992) Director General of Agriculture Malaysia
Project Manager	- Mr Mohamad Noh Samik Assistant Director (Farm Management) Farmers Development Branch Department of Agriculture Malaysia
Project Secretariat	- Mr Toh Kee Mok Assistant Director Communication Development Branch Department of Agriculture Malaysia
Liason between PGTF and Project Management	- Ms Fauziah Taib Ms Hayati Ismail Ministry of Foreign Affairs Malaysia

4.2 The project management will be responsible for the followings:

- i) Project coordination among participating countries;
- ii) Control and disbursement of PGTF funds;
- iii) Overseeing the project implementation and
- iv) Reporting the progress of the project to funding agency and Asean participating countries.

4.3 Technical inputs to the project will be provided by Asean Project Team. The Asean Project Team consisted of:

- i) The project manager
- ii) Country representatives from participating countries.

4.4 The PGTF country representatives are as follows:

Indonesia : Dr Azril Azahari
 Head of Planning Bureau
 Agency for Agriculture Education
 and Training
 Ministry of Agriculture
 Indonesia

Malaysia : Mr Harun Zain
 Head of Enforcement Section
 Pesticide Branch
 Department of Agriculture
 Malaysia

Philippines : Ms Cynthia D Corvite
 Chief
 Information System Division
 Bureau of Agriculture Research
 Department of Agriculture
 Philippines

Thailand : Mr Thitirong Rungrawd
 Chief
 Research and Agriculture Extension
 Section
 Planning Division
 Department of Agriculture Extension
 Thailand

4.5 The Asean Project Team will be responsible for the followings:

- i) To identify project needs, direction, focus and emphasis;
- ii) To formulate project workplans;
- iii) To develop course curriculum;
- iv) To provide national commitment in terms of personnel and resources;
- v) To coordinate in-country activities and
- vi) To provide technical inputs to the development of computerised system using OR applications.

V. PROGRESS OF PROJECT

5.1 All the activities identified in the project workplans were successfully undertaken. The project was completed six months ahead of scheduled time frame ie two years. The activities undertaken are described in the following paragraphs.

- 1) Exploratory Visit to Participating Countries (22-31 July 1991)

5.2 During the period the project manager and staff visited participating countries of Indonesia, Phillipines and Thailand and achieved the objectives of :

- i) assessing the needs of of the project for participating countries;
- ii) exploring the the availability of technical support in terms of hardware and software;
- iii) visiting areas where OR techniques could be applied and acertaining country representatives and candidates for training.

2) Expert Consultation (21-25 October 1991)

5.3 The above consultation was successfully held in Malaysia and attained the followings:

- i) The country representatives were fully briefed on the project;
- ii) Exposure of OR were made to country representatives through talks and discussion;
- iii) Project workplans were formulated and
- iv) Project inputs in terms of finance, manpower and facilities from participating countries were identified and committed.

5.4 During the consultation the functions and role of country representatives were agreed upon. These are:

- i) Coordinate the project in respective countries;
- ii) Identify the needs and resources and harness country's committment;
- iii) Coordinate in-country training;
- iv) Monitor and evaluate utilization of OR in respective countries;
- v) Secure and maintain hardware and software provided by the project and
- vi) Act as resourse person in OR applications.

3) Workshop On Operations Research for Senior Executives (20-22 January 1992)

5.5 The workshop was held in Kuala lumpur with the following

objectives:

- i) To expose the senior executives from participating countries with the basic concepts of OR;
- ii) To familiarise the participants with OR techniques in project management, resource allocation, transportation, assignment and scheduling;
- iii) To introduce application software in OR to the participants and
- iv) To exchange ideas in usage and application of OR.

5.6 A total of eleven senior executives from three countries attended the workshop. The list of participants of the workshop is shown in appendix I. Eight papers were presented at the workshop as shown in Appendix II. The conclusions of the deliberation of the workshop were as follows:

- i) It provided some indepth information of OR to the senior executives;
- ii) OR techniques can play an important role in the management of agriculture projects and
- iii) Training of more people in OR is more important than developing computer-based system in OR.

5.7 As a consequence of (iii) one of the objectives of the project ie to develop a computer-based system was shelved and the money allocated (a sum of M\$ 18950) is to be used to finance two additional participants from each country for training of trainers in OR. The workshop also stressed the importance of the need of good training manual to facilitate subsequent in-country training in respective countries.

4) Training of Trainers (10-22 February 1992)

5.8 The above training was conducted in Kuala Lumpur and attended by a total of eighteen participants. Malaysia being a host country sent six participants while other participating countries sent four participants each. The course had enabled eighteen participants to be competent in the usage and application of OR. These participants formed the core group of officers to spearhead the intensifying of the utilization of OR in respective countries. Appendix III contains the list of participants of the course. The course schedule is shown in Appendix IV.

5) Hardware and software acquisition

5.9 Each participating country were allocated money for procurement of necessary hardware and software for OR applications. The standard computer software for this project is SAS (Strategic Application System). Appendix IV shows the details

of hardware and software that had been acquired by the respective countries.

6) In-Country Training

5.10 As a follow up to the Training of Trainers participating countries is to conduct in-country training to train more people in the utilisation of OR. All the countries have conducted this training. The details of these training are as follows:

Country	Dates of training	Number of participants
Indonesia	05-19 October 1992	25
Malaysia	19-23 May 1992	18
	17-23 July 1992	10
	12-17 September 1992	10
	24-29 November 1992	16
Thailand	11-16 May 1992	21
Philippines	31 Aug-7 Sept 1992	10

5.11 It is very heartening to note that during the project period 128 officers from the participating countries have been trained in the utilization of OR techniques (18 from Training of Trainers and 110 from In-country training). Besides these, eleven senior executives have been exposed to OR through Workshop on Operations Research for senior executives. It is without any doubt that this project has created a significant impact to the organisations participating in this project.

7) Exposure Visit by Project Management (21-24 June 1992)

5.12 The project coordinator, project manager and a project staff made a visit to South Korea on 21-24th June 1992. The purpose of the visit was to explore the extent of the utilization of OR in the country and exchange ideas with South Korean officials. The visit to Korean Rural Economic Institute and the University of Seoul in Anyang proved to be stimulating and beneficial to the project. During the visit some practical applications of OR were demonstrated and the extent of utilization of OR were confirmed. Through the visit the project management had gained insight on how the utilization of OR could be intensified in participating countries.

8) Supervisory Visit for In-country Training to Participating Countries

5.13 Supervisory visits were made by project management to oversee in-country training in OR in respective participating

countries and to assist in the conduct of said training. From these visits it was confirmed that participating countries were serious in attempting to implement OR in the concerned organisations. These visits also confirmed the commitments of participating countries towards the project by financing these in-country trainings with minimal contributions from the project. Due to unavoidable circumstances supervisory visit to Phillipines was not made. Nevertheless the in-country training in Phillipines was successfully undertaken.

9) Evaluation Workshop(4-14 December 1992)

5.14 The visit cum workshop was held in Jakarta, Manila and Bangkok on 4-14th December. The purpose of this activity was to explore the impact of the project in participating countries and to formulate the workplans of the second phase of the project. Appendix V shows the report of the Evaluation Workshop.

5.15 Table I summarises the scheduled activities of the project and its status of the progress. As can be seen from the table all the activities scheduled have been completed.

Table I: PGTF Project Scheduled Activities

	Activities	Location	Date of execution	Progress Status
1	Exploratory visit	Participating Countries	22-30 Jul 91	Completed
2	Expert Consultation	Malaysia	21-25 Oct 91	Completed
3	Workshop on OR for senior Executives	Malaysia	20-22 Jan 92	Completed
4	Training of Trainers	Malaysia	10-22 Feb 92	Completed
5	Acquisition of Hardware and Software	Participating Countries	01 Jan 92- 31 Aug 92	Completed Completed
6	In-Country Training	Indonesia Malaysia Phillippines Thailand	05-19 Oct 92 19 May 92- 29 Nov 92 31 Aug 92- 07 Sep 92 11-16 May 92	Completed Completed Completed Completed
7	Exposure Visit	South Korea	21-24 Jun 92	Completed
8	Supervisory	Thailand	11-14 May 92	Completed

	Visit	Indonesia	06-08 Oct 92 Completed
9	Evaluation Workshop	Jakart Manila Bangkok	04-14 Dec 92 Completed

VI. PROJECT RESULTS

6.1 The outputs of this project are :-

- i) The number of officers trained in OR and
- ii) The incidences or the number of projects where OR techniques have been/or to be applied.

Table 2 summarises the outputs achieved thus far.

Table 2: Project Outputs

Output	Activity	Number
1 Number of officers trained	Training of trainers	18
	In-country training:	
	Indonesia	25
	Malaysia	54
	Philippines	10
	Thailand	21
	Total	110
2 Incidences/number of projects where OR have been/to be applied	Indonesia	3
	Malaysia	3
	Philippines	2
	Thailand	1

6.2 The names of projects in the participating countries where OR have been applied/to be applied are as follows:

- Indonesia- 1.Small farmers development projects.
2.Kalimantan Upland Farming Project.
3.Small scale agribusiness and agroindustry development projects.
- Malaysia - 1.Use of project management technique in management of agriculture stations
2.Use of linear programming in cash crops production in Johor.
3.Application of transportation model in distribution of planting materials.
- Philippines- 1.Application of OR in research utilization.
2.Application of OR in land use planning.
- Thailand - 1.Use of linear programming in mix crop cultivation.

All these projects are in various stages of OR implementation.It is hoped that the participating countries will be able to share

experiences in the utilization of OR.

VII. FINANCIAL PROGRESS

7.1 The summary of receipt and expenditure for the project is as follows:-

	M\$	US\$
Receipt:		
Travelling	83550.00	30000.00
Personnel	27850.00	10000.00
Hardware/software	194950.00	70000.00
Subtotal	306500.00	110000.00
Expenditure:		
Travelling	88748.51	31866.61
Personnel	39503.44	14184.36
Hardware/software	177955.43	63897.82
Subtotal	306207.38	109948.80
Liability	18.90	6.79
Balance	123.72	44.41
Grand Total	306350.00	110000.00

Appendix VI shows the Audited Statement of Account for the Project.

VIII. CONCLUDING REMARKS

8.1 The project management is very pleased with the progress of the project both in terms of finance and physical achievements. As can be seen from the project outputs the number of officers trained in OR is very encouraging. It is hoped that given sufficient time these trained officers will be able to make use of OR techniques in their daily tasks. These officers will in turn extend these techniques to other officers in their respective organisations. Inevitably OR will permeate throughout the organisations.

8.2 For Indonesia this project has been an eye opener in terms of its potential applications. However for this technology to spread to all levels of government it has to be done gradually. Continuous training is mandatory. For these training to be effective it has to be done in modular form with good training manuals. In order to sustain the utilization of OR continuous support is needed at all levels of government.

8.3 In the case of Malaysia, the management of Department of Agriculture is very committed to utilize OR for increasing productivity and resource optimisation. OR approach has been adopted in the implementation of farm management activities of the Department of Agriculture. This project augurs well with the current policy of increasing efficiency and resource optimisation in the public service.

8.4 From the Philippines point of view this project has been

very beneficial to the country. In fact the participating organisation would like more people to be involved in the project. It was felt that the training provided is too short for participants to be able to master the OR techniques. OR now has been demonstrated to be useful and there is need to promote the utilization to all levels of government. This will be done through the existing mechanism of the Department. To ensure the sustainability of utilisation of OR local funding will be secured by including it as a program of activity in annual budget. It is hoped this will reduce the problem of insufficient hardware facilities for OR utilization.

8.5 For Thailand this project came at the right time when the participating organisation is about to embark on its computerisation programs. This project has provided the needed stimulus in the computerisation efforts. As OR is something very new to the Department collaboration with universities with OR expertise will provide greater confidence in OR utilization. The problem that can hinder the utilization of OR is the lack of necessary data. Another of such problem is the inadequacy of computer hardware.

8.6 The common problems faced by all participating organisations in OR utilisation is the lack of required data or data available are not properly organised. For OR utilization, up to date and easily retrieved data is important. To address this common problem among the participating countries a sequel to his project has already been proposed and accepted by PGTF. A sum of US \$ 94000 has approved. With dedication of the project management and continuous support and commitment from the participating countries OR can contribute towards increasing productivity and resource optimisation.

Prepared by
PGTF Project Manager
30th MARCH 1993

APPENDIX I

WORKSHOP ON OR FOR SENIOR EXECUTIVES
(20 - 22 JANUARY 1992)

LIST OF PARTICIPANTS

INDONESIA

1. Dr Ruyat Wiratmadja
Director
Bureau of International Cooperation
Ministry of Agriculture
Jalan Harsono RM 3
Pasar Minggu
Jakarta

MALAYSIA

1. Mr Abd. Jamil Mohd Ali
Assistant Director General of Agriculture
Department of Agriculture
Jalan Sultan Salahuddin
50632 Kuala Lumpur, Malaysia
2. Mr Mohd Khairuddin Md Tahir
Assistant Director
Communication Support Section
Department Of Agriculture
Jalan Sultan Salahuddin
50632 Kuala Lumpur, Malaysia
3. Mr Ahmad Hj Othman
Director of Agriculture
Johor State Department of Agriculture
Jalan Bukit Timbalan
80000 Johor Baru
Johor, Malaysia
4. Mr Kueh Hong Seong
Senior Research Officer
Sarawak Department of Agriculture
Sarawak, Malaysia
5. Mr Juriy Awang Yacob
Assistant Director
Sabah Department Of Agriculture
Kota Kinabalu, Sabah, Malaysia
6. Mr Sanusi Jamari
Director Of Agriculture
Trengganu Department of Agriculture
20632 Kuala Trengganu, Trengganu
Malaysia
7. Mr Ramli Modiran
Director Of Agriculture
Perak Department Of Agriculture
30632 Ipoh, Perak
Malaysia

8. Mr Ramli Jaafar
Director Of Agriculture
Penang Department Of Agriculture
12000 Butterworth, Penang
Malaysia

PHILIPPINES (Absent)

THAILAND

1. Mr Charern Sukhanantapong
Director
Planning Division
Department Of Agriculture Extension
Ministry Of Agriculture and Cooperatives
2143/1 Phaholyotin Road
Khet Chatuchak
Bangkok, Thailand

APPENDIX II

WORKSHOP IN OR FOR SENIOR EXECUTIVES
(20 - 22 JANUARY 1992)

LIST OF SPEAKERS

- Paper 1 : Overview of Operations Research
Dr Leow Soo Kar
- Paper 2 : Operations Research in Decision Making
Mr Alex Lim
- Paper 3 : Application of Operations Research in
Integrated Farming
Dr Syed Kadir Al Sagoff
- Paper 4 : Application Of Operations Research in Land
Evaluation
Mr Chua Piak Chwee
- Paper 5 : Application of Operations in Fuel Assignment
Mr Mohamad Amiruddin Jumaat
- Paper 6 : Application of Operations Research in Project
Assignment
Ms Faridah Maarof
- Paper 7 : Application of Operations Research in Project
Management
Mr Teoh Boon Tin
- Paper 8 : Application of Simulation and Modelling in
Crop Livestock Production System
Dr Dahlan Ismail

APPENDIX III

INTER COUNTRY TRAINING OF TRAINERS
(10 - 23 FEBRUARY 1992)

LIST OF PARTICIPANTS

INDONESIA

- 1 Dr Kaman Nainggolan
Head Data Processing Division
Centre Of Agriculture Data
Ministry Of Agriculture
Jalan Harsono RM 3
Pasar Minggu
Jakarta 12550
Indonesia
- 2 Ir Raden Bambang Budhijana
Subject Matter Specialist
Bureau Of International Cooperation
Ministry Of Agriculture
Jalan Harsono RM 3
Pasar Minggu
Jakarta 12550
Indonesia
- 3 Mr Hasmand Zusi
Trainer
Agency for Agriculture Education and Training
Ministry Of Agriculture
Jalan Harsono RM 3
Pasar Minggu
Jakarta 12550
IndonesiaK
- 4 Mr Iski Suharno
Planner
Agency for Agriculture Education and Training
Ministry Of Agriculture
Jalan Harsono RM 3
Pasar Minggu
Jakarta 12550
Indonesia

MALAYSIA

- 1 Mr Shafie Baharum
Agriculture Officer
Extension Branch
Department of Agriculture
Wisma Tani
50632 Kuala Lumpur
Malaysia

- 2 Mr Chua Piak Chwee
Agriculture Officer
Planning And Development Branch
Department of Agriculture
Wisma Tani
50632 Kuala Lumpur
Malaysia
- 3 Mr Abdul Razak Abdullah
Agriculture Officer
Farm Mechanisation Branch
Department of Agriculture
43400 Serdang
Malaysia
- 4 Ms Norma Mustaffa
Agriculture Officer
Comodity Development Branch
Department of Agriculture
Bota Kiri
Perak
Malaysia
- 5 Ms Fatimah Othman
Senior Research Officer
Research Branch
Sarawak Department of Agriculture
Jalan Simpang Tiga
93632 Kuching, Sarawak
Malaysia
- 5 Mr Muhiddin Ismail
Agriculture Officer
Sabah Department of Agriculture
Kota Kinabalu
Sabah
Malaysia

PHILIPPINES

- 1 Mrs Evita Belen
Coordinator/Agriculturist II
Bureau of Agriculture Research
Department Of Agriculture
3rd Floor ATI Building
Elliptical Road
Dilimam, Quezon City
Philippines
- 2 Ms Cecilia J Baquireza
Bureau of Agriculture Research
Department Of Agriculture
3rd Floor ATI Building
Elliptical Road
Dilimam, Quezon City
Philippines

- 3 Ms Julia Alviar Lapitan
Data Controller
Bureau of Agriculture Research
Department Of Agriculture
3rd Floor ATI Building
Elliptical Road
Dilimam, Quezon City
Philippines
- 4 Mr Herminigildo Sacayanan Quibuyen
Computer Operator III
Bureau of Agriculture Research
Department Of Agriculture
3rd Floor ATI Building
Elliptical Road
Dilimam, Quezon City
Philippines

THAILAND

- 1 Dr Mayuri Acharavatchala
Policy and Planning Analyst
Department of Agriculture Exyension
2143/1 Phaholyotin Road
Khet Chatuchak
Bangkok 10900
Thailand
- 2 Mrs Linjong Nakaprawing
Computer System Analyst
Department of Agriculture Exyension
2143/1 Phaholyotin Road
Khet Chatuchak
Bangkok 10900
Thailand
- 3 Mrs Sugunya Athipanan
Subject Matter Specialist
Department of Agriculture Exyension
2143/1 Phaholyotin Road
Khet Chatuchak
Bangkok 10900
Thailand
- 4 Mr Suvit Chao-Utai
Subject Matter Specialist
Department of Agriculture Exyension
2143/1 Phaholyotin Road
Khet Chatuchak
Bangkok 10900
Thailand

APPENDIX IV

DETAILS OF HARDWARE AND SOFTWARES
ACQUIRED BY PARTICIPATING COUNTRIES

COUNTRY	HARDWARE	SOFTWARE*
-----	-----	-----
1 Malaysia	3 units of ALR Powerflex model 80	SAS Base SAS OR SAS Graph SAS FSP
2 Thailand	1 unit Acer model 386/33 1 unit Acer 1116 SX 1 unit Epson Printer 1 unit PC viewer	SAS Base SAS OR
3 Philippines	2 units PC-AT 386 1 unit laptop 386 2 units Printer	SAS Base SAS AF SAS Graph SAS OR
4 Indonesia	3 Units Wearnes Boldlines 386sx-25 3 Units microline 391 printer	SAS Base SAS OR

* Price for the softwares include 2 years licence for use

EVALUATION WORKSHOP REPORT
OF
THE PEREZ-GUERERRO TRUST FUND PROJECT
ON
"Intensifying the Utilization of
Operations Research Techniques in the
Management of Agriculture Development Project"
by
The PGTF Project Management

Contents

	Page
FOREWORD	1
Evaluation Workshop Itinerary	3
Opening Address by Chairman Dr. William Dar	5
Speech by PGTF Manager	6
Adoption of Agenda	
Session I : PGTF Project Progress Report	10
Session II : PGTF Country Report:	12
Malaysia	13
Indonesia	15
Philippines	16
Thailand	17
Session III : Discussion on 2nd Phase PGTF Project ...	18
Adoption of Report	19

FOREWORD

The Perez-Guererro Trust Fund Project has been implemented very successfully since its inception. The project which aims at intensifying the utilization of Operations Research (OR) Techniques for agriculture project was participated by four countries, viz. Indonesia, Thailand, Philippines and Malaysia.

The project management not only created lots of awareness in OR utilization but has also instilled interests to all concerned and has to its credit gave trainings in OR for 133 personnel from participating countries. In Malaysia, 54 personnel from various disciplines were trained within the span of the project.

The training has its pay off also in the sense that it has seen its application in agricultural field in Thailand and Malaysia, and the rest of the participating countries to follow suit.

The Evaluation workshop, which is the final phase of the PGTF project was also being carried out as planned. Its conduct marks the end of the project which has benefitted all participating countries in one way or another in the field concerned.

Evaluation Workshop Itinerary

1. 3 - 7 December, 1992 - * Presentation of Country Reports and Field Visit in Indonesia.
2. 8 - 10 December, 1992 - ** Presentation of Country Report in Philippines and Field Visit.
3. 11 - 14 December, 1992 - *** Presentation of Country Report in Thailand and Field Visit.

* Evaluation Workshop Itinerary - Indonesia

(3 - 7 Dec. 1992)

- | | | |
|------------|---|---|
| 3 December | - | Arrival in Jakarta. |
| 4 December | - | Meeting and discussion of project at the Department of Agriculture Jakarta. Depart for Bogor. |
| 5 December | - | Visit to tea plantation where inventory model will be applied. |
| 6 December | - | Leave for Manila. |
| 7 December | - | Meeting and discussion with Dr. Willam Dar, Workshop Chairman. |

** Evaluation Workshop Itinerary - Philippines

(7 - 10 Dec. 1992)

- | | | |
|--------------------|---|-----------------------|
| 7 December | | |
| 8.30 - 9.00 a.m. | - | Opening. |
| 9.00 - 9.15 a.m. | - | Adoption of Agenda. |
| 9.15 - 10.15 a.m. | - | PGTF Progress Report. |
| 10.15 - 10.45 a.m. | - | Tea break. |

- 10.45 - 12.45 noon - Country Report:
 - Indonesia
 - Malaysia
- 12.45 - 2.00 p.m. - Lunch.
- 2.00 - 4.00 p.m. - Country Report:
 - Philippines
 - Thailand
- 8 December
- 8.30 - 10.30 a.m. - Discussion on 2nd phase of Project.
- 10.30 - 11.00 a.m. - Tea break.
- 11.00 - 12.00 noon - Discussion on 2nd phase of Project.
- 12.00 - 1.00 p.m. - Workshop Summary.
- 9 December - Field Visit.
- 10 December
- 8.30 - 10.30 a.m. - Adoption of Report.
- 10.30 - 11.00 a.m. - Tea break
- 11.00 - 1.00 p.m. - Adoption of Report.

***** Evaluation Workshop Itinerary - Thailand**
 (10 - 14 December 1992)

10 December

- 2100 - Arrival at Don Maung International Airport (Overnight - Pradipat Hotel).

11 December

- 0700 - Visit DOAE Director-General. Airport (TG 114 - 0950/1050).
- 0800 - Depart to Don Maung International Airport (TG 114 - 0950/1050).
- 1000 - Arrival at Chiangmai International Airport.
- 1200 - Lunch (Phucome Hotel)
- 1300 - Discussion.

- 1400 - Visit Doi pui.
- 1800 - Dinner (Hosted by DOAE).
- 12 December
- 0730 - Breakfast.
- 0830 - Visit Sunkumphang.
- 1200 - Lunch.
- 1400 - Department to Krisdadoi Resort.
(Dinner)
- 13 December
- 0730 - Breakfast.
- Free Time
- 1230 - Depart to Chiangmai International
Airport (TG 105 1405/1510).
- 15.10 - Arrival at Don Maung Inter-
national Airport (Overnight
Pradipat Hotel).
- 14 December
- 0600 - Depart to Don Maung International
Airport (TG 415 BKK-KL 0900/1105
GA 861 BKK-JAKARTA 0845/1530).
- 1130 - Depart to Don Maung International
Airport (LH 744 BKK-MANILA
1510/1920).

Opening Address by Director, Bureau of Agriculture
Research, Philippines, Dr. William Dar

The workshop was officiated by Dr. William Dar, Director of Bureau of Agriculture Research, Philippines. He extended a warm welcome to all workshop participants and thanked the Project Management for making this workshop possible.

He also expressed his gratitude for possible participation of the Philippines in this project and described the utilization of OR technique in the Bureau as timely.

He hoped that this workshop will spearhead further development in OR techniques as the fact that this will definitely benefit all participating personnel, organisation and countries.

Finally, he wished all participants a pleasant stay and a successful workshop and declared the workshop open.

Speech by PGTF Project Manager

Dr. William Dar,
Participating Country Representatives,
Ladies and Gentlemen,

I am pleased to be here. Also I would like to take this opportunity to thank Dr. Dar and Ms. Cynthia De Mesa of the Bureau of Agriculture Research for making this meeting possible.

It is only in August 1991 that the project management team came to Manila to discuss and explore avenues for the conduct of the project as with other countries.

We are all here today to participate in the final activities of the project. As such, we need to heed the following considerations:

- to take stock of what have been done so far;
- to evaluate the milestone of the project;
- to formulate the future course of action.

As we all know, the project has two main objectives. They are:

- (1) Increasing the competence of officers in OR utilization;
- (2) Intensifying and contribute to the utilization of OR.

To attain the above objectives, various activities had been undertaken. The most significant of these activities is regarding the dissemination of technology in the participating organization.

It is gratifying to see four persons from each participating country with almost zero base on OR came to Kuala Lumpur for a two week course on OR, and are now trainers and practitioners of OR.

OR is taught in University as a degree course but we manage to impart these knowledge in two weeks, we must be super brain!

The project mangement also able to achieve the following:

- (1) Convince senior executives of participating countries on the usefulness of OR through workshop.
- (2) Train 18 trainers in all participating countries.
- (3) Trainers in turn trained 123 people in OR in all participating countries.
- (4) Provided the necessary hardwares and softwares.
- (5) Created awareness of the usefulness of OR.

It will be a most memorable experience if 20% of those who have been trained practice OR.

The project has been conducted in a most unique way in the sense that:

- (i) there is not much of intervention in the running of the project;
- (ii) no technical mission from contributing agency;

- (iii) the meeting of the country representative is the advising authority for the concerned authority;

which should be a good step to follow-up projects.

In the dissemination of OR technique the common problem faced by all participating countries is the lack of or inadequate data for the intended purpose. Based on this rationale, I have submitted another proposal last February for the sequel to this project.

Now the second phase is approved to address the problem faced earlier. With the second phase, we hope to see that data required for OR utilization will be obtained and some system developed to organize the data. This meeting will formulate the action plan for the second phase.

This project have been very exciting and I felt very satisfied especially with regard to the following:

- No hitches from project inception to project completion.
- Project completed 6 months ahead of schedule.

It has enhanced the participating countries and its organization in OR techniques and utilization namely the Department of Agriculture Malaysia, the Bureau of Agriculture Research of the Philippines, the Department of Agriculture Extension of Thailand and the Department of Agriculture Indonesia.

To conclude I wish to thank Dr. William Dar, Ms. Cynthia De Mesa and other members of the Bureau of Agriculture Research for making this meeting possible.

I can assure you that we are going to have a very fruitful meeting and hope that our stay in Manila will be an enjoyable one.

Thank you.

SESSION I
PGTF PROGRESS REPORT

The Project Manager, Mr. Mohamad Noh Samik from the management team presented the progress report.

Highlights of report were that all activities were conducted as planned, and in fact the project, not only attained its objectives, also is being completed six month ahead of scheduled. (Project inception June 1991, Project completion December 1992).

The Project Manager also highlighted the physical and financial attainment. The activities that have been successfully executed are as follows:

1. Exploratory visit to participating countries (21 - 31 June 1991).
2. Expert consultation (21 - 25 October 1991).
3. Workshop on Operations Research for Senior Executives (20 - 22 January 1992).
4. Training of Trainers (10 - 22 February 1992).
5. Hardware and Software acquisition.
6. In-country Training (11 May - 29 November 1992).
7. Exposure visit to Korea (21 - 24 June 1992).
8. Supervisory visit for in-country training.
9. Evaluation Workshop (4 - 14 December 1992).

In terms of output, 128 officers from the participating countries have been trained in OR and there are nine projects where OR techniques have been used in the participating countries.

Financially out of RM306,350 received, RM306,207.38 have been utilized leaving a balance of RM123.72.

SESSION II
PGTF COUNTRY REPORTS

All participating countries presented their country report through the respective country representatives (copies of summary as attached).

**SUMMARY OF COUNTRY REPORT
MALAYSIA**

The country report of Malaysia in the PGTF Project was presented by Mr. Harun Zain, the country representative.

The PGTF Project programmed in Malaysia for the project period saw the following important activities in Malaysia:

- (1) The Expert Consultation (21 - 25 October 1992).
- (2) Workshop for Senior Executives (20 - 25 January 1992).
- (3) Training of Trainers (10 - 23 February 1992).
- (4) The In-Country Trainings. They were:
 - (i) 19 - 23 May 1992 (10 participants - South zone)
 - (ii) 19 - 23 Jul. 1992 (10 participants - North zone)
 - (iii) 23 - 28 Nov. 1992 (16 participants - East zone)

The participants involved were carefully selected to optimise the training impact. These personnel were from the Farm Management Unit, the Transportation Unit, Managers of Agriculture Institutes and Stations, all within the Department of Agriculture.

With the acquisition of OR techniques a list of pilot projects were also being drawn up for application of the OR technique. They were as follows:

- (i) Utilization of Linear Programming Technique, in Negri Sembilan;
- (ii) Utilization of Project Planning technique at Kampung Gajah, Perak;
- (iii) Utilization of Project Management technique at the Commodity Development Centre at Titi Gantong, Perak;
- (iv) Utilization of the Transportation technique in agriculture station, Serdang, Selangor;

- (v) Linear programming project management in 4 Agriculture Institutes throughout the country.

It is a blessing to note that the project benefitted the Department of Agriculture and greatly enhanced the working mechanism in the area of agriculture project management.

**SUMMARY OF COUNTRY REPORT
INDONESIA**

Dr. Azril Azahari, the country representative for Indonesia presented the country report.

As one of the participating countries of the PGTF Project, Indonesia has benefitted greatly and can be measured by the following outputs:

- (i) Exposing ten policy makers and 15 senior staff at national level in OR techniques and utilization;
- (ii) Trained 25 agriculture project managers, trainers and teachers at the Agriculture Training Centre at Ciawi, Bogor, Jakarta (6-16 October, 1992).
- (iii) Evolved a computer-based system for management in agriculture projects.

In addition, Indonesia has to its credit two case studies involving the utilization of OR technique. They are:

- (i) Farm Management activity for farming group in West Jawa involving paddy, corn, soya bean and groundnut.
- (ii) Aggregate planning in tea plantation in west Jawa.

The acquisition of hardware and software under the project were very useful to the Department of Agriculture as the Department has planned to utilise the OR technique in 1993 for management of and the betterment of landless farmers and to expose more personnel to OR technique.

**SUMMARY OF COUNTRY REPORT
PHILIPPINES**

Ms. Cynthia D. de Mesa-Corvite, the country representative presented its country report.

The Philippines has overall benefitted from the project and is grateful to the project management for inviting the Philippines to be a participant of the PGTF project. It has acquired as scheduled softwares and hardwares and has conducted training for ten DA staff in OR utilization.

For the Philippines the use of OR technique is in line with the Accredited Agriculture Production Project-Resource and Output Management (AAPP-ROM) with similar objective of enhancing research management. The result of training saw the utilization of OR in two case studies:

- (i) The use of Linear Programming in crop planting with land, labour and financial constraints by DA region 3;
- (ii) The use Linear Programming Technique in profit maximization by DA region 10.

There are plans to conduct more in-country training in future utilizing some balance fund from the workshop evaluation for a better and wider dissemination of the OR technique.

**SUMMARY OF COUNTRY REPORT
THAILAND**

The Thailand country representative Mr. Thitirong Rungrawd presented the report.

Though Operations Research Technique have been heard of in the Department of Agriculture Extension, it has never really been applied. With the participation of Thailand in the PGTF Project DOAE staff have had the opportunity of being exposed to OR for its utilization in agriculture.

Thailand had, as scheduled conducted a training session in OR technique utilization (11 - 16 May 1992). A total of 21 officers in DOAE participated. The training proved to be fruitful in the sense that a case study was conducted utilising OR technique for a farm in the province of Lopburi. This is a first case practical OR technique application in the farm to optimise farm return with the existing available resources.

The result of which though not up to expectation, showed a committed endeavour on the part of the DOAE staff, which in time to come will definitely improve in their OR technique application. Nevertheless, the experiences were invaluable and DOAE wishes to train more staff in the future so as to improve the well-being of the farming community.

SESSION III

The second phase of the project entitled: **"Development of Agriculture Database for OR Utilization for ASEAN"** was discussed in details among participating countries. A total of nine activities were identified. A detailed program is as attached providing information on schedule, location, activity duration, the number of participants involved, and the estimated cost of implementation.

The activities that are to be undertaken in the second phase of the project are as follows:

- (1) Expert Consultation.
- (2) Workshop on data collection and utilization.
- (3) In-country Workshop data collection and utilization.
- (4) Training in application system development.
- (5) Data collection.
- (6) In-country system development.
- (7) Workshop on system development.
- (8) Provision of software.
- (9) Evaluation Workshop.

ADOPTION OF REPORT

The project progress report, the country reports and discussion report on the 2nd phase of the project were unanimously accepted at the end of the workshop.

The report adoption marks the completion of the PGTF project (June 1991 - December 1992) and heralds the beginning of Phase II project : The Development of Agriculture Database for OR Utilization for ASEAN which is tentatively scheduled to begin in June 1993.

**Development of Agriculture Database for OR Utilization for ASEAN
Period - June 1993 to December 1994 (PGTF Project)**

Activity	Date	No. Participant	Duration	Location	Estimated Expenditure
1. Expert Consultation	Jun 93	1 per country	2 days	Thailand	A. Fare = \$ 1,800.00 Per Diem = \$ 960.00 Expert = \$ 900.00 Total = \$ 3,560.00 =====
2. Workshop on Data Collection & OR Utilization	Aug. 93	1 per country	4 days	Malaysia	A. Fare = \$ 1,800.00 Per Diem = \$ 1,920.00 Total = \$ 3,720.00 =====
3. In-country Workshop on Data Collection & Utilization	Oct. 93	Host country	Host country	Host country	N. Applicable
4. Training in Application on System Development	Jan. 94	2 per country	14 days	Malaysia	A. Fare = \$ 3,600.00 Per Diem = \$ 13,440.00 Trainers = \$ 2,000.00 Others = \$ 1,000.00 Total = \$ 20,040.00 =====
5. Data Collection	Jan-Jun 94	Host country	6 months	Host country	N. Applicable
6. In-Country System Development	Before Jul 94	2 per country	6 months	Host country	N. Applicable
7. Workshop System Development	Aug. 94	2 per country	5 days	Philippines	A. Fare = \$ 3,600.00 Per Diem = \$ 4,800.00 Facilitator = \$ 200.00 Total = \$ 8,600.00 =====

Activity	Date	No. Participant	Duration	Location	Estimated Expenditure
8. Provision of Software	Feb. 94	-	-	-	\$10,000.00/country ----- Total = \$40,000.00 =====
9. Evaluation Workshop	Dec. 94	4 (Malaysia) 1 (Thailand) 1 (Indonesia) 1 (Philippines)	10 days	Indonesia	A. Fare = \$ 4,800.00 Per Diem = \$ 9,600.00 ----- Total = \$14,400.00 =====

FINANCIAL REPORT
 PEREZ-GUERRERO TRUST FUND PROJECT
 ON THE UTILISATION OF OPERATIONS RESEARCH
 TECHNIQUES IN AGRICULTURE
 AS AT 31st DECEMBER 1992

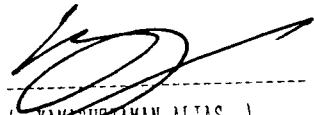
RECEIPT

PAYMENT:

	RM			RM
BALANCE 1.1.92	169,522.98	TRAVEL	PERDIEM	26,518.24
			AIRFARE	35,053.00
ALLOCATION NOT SPENT IS WITHDRAWN (Note 2)	122,532.40	PERSONNEL	REFUND	(421.39)
			ACCOMODATION	2,630.00
			STATIONERIES	884.68
			HONORARIUM	3,500.00
			FOOD/REFRESHMENTS	6,037.30
			PROF SERVICES	615.50
			TRAINING FEES	9,150.00
			TRAINING SUBSIDY	12,000.00
			WORKSHOP SUBSIDY	2,000.00
			TRAINING MATERIALS	0.00
			OTHERS	695.00
		HARDWARE	HARDWARE/SOFTWARE	172,142.43
		SOFTWARE	OTHER EQUIPMENT	3,030.00
			TOTAL PAYMENT	RM 273,834.76
			LIABILITY	18.90
			BALANCE 31.12.92	18,201.72
TOTAL	===== 292,055.38 =====			===== RM 292,055.38 =====

RECEIPT, PAYMENT AND BALANCE IN \$US
AT CONVERSION RATE OF 1 \$US = \$M 2.7850

RECEIPT RM	292,055.38	= \$US	104,867.28
PAYMENT RM	273,834.76	= \$US	98,324.87
LIABILITY RM	18.90	= \$US	6.79
BALANCE RM	18,201.72	= \$US	6,535.62



(KAMARUZZAMAN ALIAS)
DEPUTY DIRECTOR GENERAL OF AGRICULTURE
MALAYSIA
(PGTF PROJECT COORDINATOR)

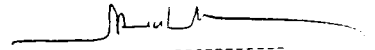
DATE: 25 May 1993

CERTIFIED CORRECT:-



(PATHIYAH HJ HAMDAN)
FOR AUDITOR GENERAL MALAYSIA
KUALA LUMPUR

DATE: 8th June 1993 .



(ABDUL AZIZ DOLLAH)
DIRECTOR CAREER DEVELOPMENT BRANCH
(PGTF PROJECT MANAGER)

DATE: 25 May 1993

Penyata Penyesuaian 1992

Baki mengikut laporan terperinci 31/12/92 100,653.07

Tolak

1. Baucer-baucer yang belum dibayar oleh Pejabat Pembayar 3,137.11
2. Catatan "debit" di Buku Vot yang tiada di laporan terperinci 79,558.23
3. Tanggungan belum selesai di Buku Vot 18.90

Campur

1. 'Kredit' di Buku Vot tiada di laporan terperinci 262.89

Baki mengikut Buku Vot 31/12/92 18,201.72

Notes of Account of Perez Guerrero Trust Fund (PGTF)
Project On Utilization of Operations
Research Technique In Agriculture

- Note x Allocation sent to Malaysian Embassies in Jakarta, Manila and Bangkok for the purchase of hardware/software for Indonesia Philippines and Thailand was withdrawn because of unable to utilise the money in 1991. However this money was made available again in 1992.
- Note a This is for the payment of per diem, lodging and incidental expenses for staff and participants from participating countries.
- Note b This is for payment of airfare
- Note c This is refund of excess of expenses incurred for per diem.
- Note d This is for payment of accomodation for participants paid direct to establishments providing the facilities
- Note e This is for payment of items related to stationeries
- Note f This is for payment of honorarium for lecturers and experts.
- Note g This is for payment for food and refreshments during meeting, lectures and seminars.
- Note h This is for payment of professional services rendered.
- Note i This is for payment of fees for training of SAS softwares
- Note j This is subsidy for participating countries for the conduct of incountry trainings.
- Note k This is for the payment of expenses to Philippines hosting the Evaluation Workshop in Manila.
- Note l This for the payment of the preparation of training materials for courses/workshops conducted.
- Note m This is for payment of other expenses not categorised above
- Note n This is for payment of purchase of hardware and software for participating countries.
- Note o This for the payment of equipments purchased for project management.
- Note p This amount has not been paid because vendor have not submitted any claim even though goods have been delivered.

APPENDIX
PGTF PROJECT
DETAILS OF EXPENDITURE
AS AT 31ST DECEMBER 1992

GROUP EXPENSE-TRAVEL

TRANSACTION DETAILS	DATE OF EXPENDITURE	DETAILS OF EXPENDITURE	VOUCHER NUMBER	AMOUNT
PERDIEM/ACCOMODATION	14 JAN 92	PERDIEM AND AIRPORT TAX	00003	525.00
PERDIEM/ACCOMODATION	07 FEB 92	PERDIEM	00005	6,588.00
PERDIEM/ACCOMODATION	15 JUN 92	TRAVEL TO THAILAND	00084	1,495.24
PERDIEM/ACCOMODATION	18 JUN 92	TRAVEL FOR HARUN ZAIN	00099	1,589.81
PERDIEM/ACCOMODATION	21 JUL 92	TRAVEL FOR MOHAMAD NOH	00115	1,937.11
PERDIEM/ACCOMODATION	23 NOV 92	PERDIEM FOR CHUA	00211	783.08
PERDIEM/ACCOMODATION	12 NOV 92	PERDIEM FOR NON MALAYSIAN	00201	4,400.00
PERDIEM/ACCOMODATION	12 NOV 92	PERDIEM FOR MALAYSIAN	00199	8,000.00
PERDIEM/ACCOMODATION	16 DEC 92	PERDIEM FOR THITIRONG	00238	200.00
PERDIEM/ACCOMODATION	16 DEC 92	PERDIEM FOR CYNTHIA	00239	200.00
PERDIEM/ACCOMODATION	16 DEC 92	PERDIEM FOR MALAYSIANS	00240	800.00
AIRFARE	27 JAN 92	TRAVEL FOR EXP CONSULTATION	00004	4,179.00
AIRFARE	14 MAY 92	AIRLINE TICKET	00067	19,811.00
AIRFARE	23 JUL 92	AIR TICKET	00118	954.00
AIRFARE	20 JUL 92	AIRLINE TICKET FOR ABU BAKAR	00112	1,185.00
AIRFARE	04 SEP 92	AIR TICKET TO KOREA	00144	7,888.00
AIRFARE	23 NOV 92	AIR TICKET TO INDONESIA	00210	1,036.00
REFUND	22 JUL 92	REFUND OF EXCESS CLAIM	A912123	(262.89)
REFUND	12 AUG 92	REFUND NON ATTENDANCE	A911886	(158.50)
				----- 61,149.85 -----

GRPEXP

APPENDIX
PGTF PROJECT
DETAILS OF EXPENDITURE
AS AT 31ST DECEMBER 1992

GROUP EXPENSE=PERSONNEL

TRANSACTION DETAILS	DATE OF EXPENDITURE	DETAILS OF EXPENDITURE	VOUCHER NUMBER	AMOUNT
PERDIEM/ACCOMODATION	16 MAY 92	ACCOMODATION FOR PARTICIPANTS	00069	2,350.00
PERDIEM/ACCOMODATION	16 MAY 92	ACCOMODATION	00070	280.00
STATIONERIES	25 MAR 92	STATIONERIES	00037	46.72
STATIONERIES	25 MAR 92	STATIONERIES	00038	12.66
STATIONERIES	25 MAR 92	PVC FILES	00040	212.50
STATIONERIES	06 JUL 92	STATIONERIES	00095	233.00
STATIONERIES	06 JUL 92	SOUVENIRS	00097	379.80
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00006	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00007	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00008	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00009	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00010	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00011	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00012	150.00
HONORARIUM	07 FEB 92	HONORARIUM FOR LECTURERS	00013	150.00
HONORARIUM	26 MAR 92	HONORARIUM	00041	100.00
HONORARIUM	26 MAR 92	HONORARIUM	00042	400.00
HONORARIUM	26 MAR 92	HONORARIUM	00043	900.00
HONORARIUM	26 MAR 92	HONORARIUM	00044	300.00
HONORARIUM	26 MAR 92	HONORARIUM	00045	300.00
HONORARIUM	26 MAR 92	HONORARIUM	00046	300.00
FOOD/REFRESHMENTS	03 JAN 92	FOOD FOR W/SHOP FOR EXEC	00002	216.90
FOOD/REFRESHMENTS	12 FEB 92	DINNER FOR DELEGATES	00015	697.00
FOOD/REFRESHMENTS	18 JUN 92	FOOD AND REFRESHMENT	00087	4,028.40
FOOD/REFRESHMENTS	20 JUL 92	FOOD AND REFRESHMENT	00111	720.00
FOOD/REFRESHMENTS	04 SEP 92	LUNCH FOR THAI VISITORS	00143	375.00
PROFESSIONAL SERVICES	12 FEB 92	DECORATIONS	00014	250.00
PROFESSIONAL SERVICES	25 MAR 92	PHOTOGRAPHS	00039	365.50
TRAINING FEES	14 MAY 92	TRAINING FEES	00068	9,150.00
TRAINING SUBSIDY	21 APR 92	TRAINING SUBSIDY FOR MALAYSIA	00053	3,000.00
TRAINING SUBSIDY	21 APR 92	TRAINING SUBSIDY FOR THAILAND	00053	3,000.00
TRAINING SUBSIDY	02 SEP 92	TRAINING SUBSIDY FOR INDONESIA	00133	3,000.00
TRAINING SUBSIDY	12 NOV 92	TRAINING SUBSIDY FOR PHILIPPINES	00202	3,000.00
OTHER EQUIPMENT	06 JUL 92	COMPUTER BAG	00038	695.00
WORKSHOP SUBSIDY	12 NOV 92	SUBSIDY FOR EVALUATION W/SHOP	00202	2,000.00
				37,512.48

APPENDIX
PGTF PROJECT
DETAILS OF EXPENDITURE
AS AT 31st DECEMBER 1992

----- GROUP EXPENSE-HARDWARE -----

TRANSACTION DETAILS	DATE OF EXPENDITURE	DETAILS OF EXPENDITURE	VOUCHER NUMBER	AMOUNT
HARDWARE/SOFTWARE	03 JAN 92	SAS SOFTWARE FOR PROJ MGT	00001	18,022.80
HARDWARE/SOFTWARE	12 MAY 92	EQUIPMENT FOR THAILAND	PK(67)	37,574.18
HARDWARE/SOFTWARE	30 MAR 92	EQUIPMENT FOR PHILIPPINES	PK(70)	41,984.05
HARDWARE/SOFTWARE	04 JUL 92	EQUIPMENT FOR MALAYSIA	00093	24,060.00
HARDWARE/SOFTWARE	07 SEP 92	PRINTER	00146	1,395.00
HARDWARE/SOFTWARE	13 APR 92	EQUIPMENT FOR INDONESIA	PK(48)	42,032.40
HARDWARE/SOFTWARE	12 NOV 92	NOTEBOOK FOR PROJ MGT	00200	7,074.00
OTHER EQUIPMENT	23 SEP 92	ELECTRONIC ORGANISERS	00165	3,030.00

GRPEXP				175,172.43

		GRAND TOTAL		273,834.76
				=====

LAMPIRAN A

PENYATA PENYESUAIAN VOT PERBELANJAAN

BAGI BULAN: DISEMBER 1992

Vot :

PTJ/PK : 401031

*

PGM/AKT : 84508

+

S.O.D.O :

Baki peruntukan masih ada seperti di Laporan Terperinci
Perbelanjaan pada 31.12.92 100,653.07

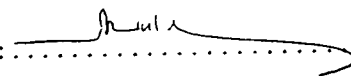
Tolak

1. Baucer-baucer yang belum dibayar oleh Pejabat 3,137.11
2. Catatan "debit" di Buku Vot yang tidak terdapat
di Laporan Terperinci Perbelanjaan (Format A2) 79,558.23
3. Tanggungan belum selesai seperti di Buku Vot
pada 31.12.92 18.90

Campur


1. Catatan "kredit" di Buku Vot yang tidak terdapat
di Laporan Terperinci Perbelanjaan (Format A2) 262.89
2. Catatan "debit" di Laporan Terperinci Perbelanjaan
yang tidak terdapat di Buku Vot (Format A3)

Baki peruntukan masih ada seperti di Buku Vot
pada 31.12.92 18,201.72

Tandatangan: 

Nama: ABDUL AZIZ DOLAH

Jawatan: Pengurus Projek PGTF

Tarikh:  Mei 1993 Cop Rasmi Pejabat:

* "PROJEK"/"Amanah" hendaklah digunakan untuk Vot Perbelanjaan
Pembangunan/Akaun Amanah

+ Kod S.O.D.O. tidak digunakan untuk Akaun Amanah

LAMPIRAN A1

Senarai baucer-baucer yang belum dibayar oleh Pejabat Pembayar

Bulan : Disember 1992

Vot :

PTG/PK : 401031

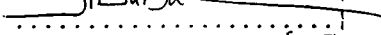
*

PGM/AKT: 84508

+

S.O.D.O:

Bil.	Tarikh Dokumen	No. Ruj. Dokumen	Butiran	\$	c
1.	21/7/92	00115		1,937.11	
2.	16/12/92	00238		200.00	
3.	16/12/92	00239		200.00	
4.	16/12/92	00240		800.00	
Jumlah				3,137.11	

Tandatangan : 

Nama : ABDUL AZIZ DOLLAH

Tarikh: 25 Mei 1993

Jawatan : Pegawai Projek PGTF

*"PROJEK"/Amanah" hendaklah digunakan untuk vot Perbelanjaan Pembangunan/Akaun Amanah.

+ Kod S.O.D.O. tidak digunakan untuk Akaun Amanah

REPORT OF IN-COUNTRY TRAINING FOR
PEREZ-GUERERRO TRUST FUND PROJECT ON INTENSIFYING THE
UTILIZATION OF OPERATIONS RESEARCH IN THE
MANAGEMENT OF AGRICULTURE DEVELOPMENT PROJECT IN
MALAYSIA *

by

Harun Zain **

INTRODUCTION

Human development is a dynamic asset of any organisation. However, people have to be trained and equipped with the necessary knowledge and skills to exhibit their full potential for decision making in the field of agriculture development projects.

To achieve this end, the Department of Agriculture Malaysia had embarked on a Project aimed at intensifying the utilization of "Operations Research Technique" in the management of agriculture development projects. This Project was partially funded by the Perez-Guerrero Trust Fund.

Four ASEAN countries - Indonesia, Malaysia, Phillipine and Thailand - participated in this Project. The fund was made available for the procurement of computer hardware and software; training of trainers and to partially finance the In-Country training programme.

* This report was prepared for the PGTF Post Evaluation Workshop, 4-14 December 1992

**Asst. Director, Enforcement Section Pesticide Branch
Department of Agriculture Kuala Lumpur.

A number of activities were carried out under this Project culminated by the In-Country training programme in the participating countries. The activities carried out were as follows :-

- i) Expert Consultation (21 - 25 October 1991)
- ii) Workshop on Operations Research for Executives (20 -25 Jan 1992).
- iii) Training of trainers (10 - 23 February 1992)
- iv) In-Country training programme (tentatively to be implemented three months after the completion of the Training of trainers course)

The ' Training of Trainers ' course was conducted on 10 - 23 February 1992 at ILPP Serdang, Selangor (Malaysia). It was attended by participants from the four ASEAN countries. Subsequently these qualified trainers are supposed to initiate the In-Country training for officers in their respective countries.

IN-COUNTRY TRAINING

The In-Country training in Malaysia was implemented as planned i.e about three months after the completion of the 'Training for Trainers' course. The initial course was conducted on 19-23 May 1992 and the final one on 24-29 Nov. 1992. The objectives and the course content are as in Appendix I and Appendix II respectively.

Strategy

The training has a two-pronged objectives -

- i) To create a core group who would spearhead and pave the way for utilisation of the OR technique in the Department of Agriculture. Their main function is to develop and tests models suitable for local needs.
- ii) To prepare the second echelon who would benifit from the flow over effect resulting from the efforts of the core group. Their initial job is to familiarise themselves with the soft ware and the techniques. They will go into full operation once the suitable models have been developed by the core group.

To meet these objectives, the core group were selected from officers of the Federal Technical Branches who have a strong computer background and can utilise the technique in their daily works. The technique to be taught should be relevant to the the work they are currently involved.

For this purpose officers working in the following disciplines were selected.

i) Officers from the Farm Management Unit. They will spearhead the the work in the utilisation of the Linear Programming Technique.

ii) Officers from the Transportation Unit. They will lead in the work related to the application of Transportation Technique.

iii) The managers of Agriculture Stations. These officers will develop models related to Project Management Technique suitable for application in Agriculture Stations throughout the country.

iv) Farm Managers from the Agriculture Institutes which are gearing up for commercialisation.

The second echelon were selected among frontline officers from the State Departments of Agriculture. They are currently working in the areas where this technique can be applied. These officers, after being trained, are expected to collect the relevant data and to familiarise themselves with the basic technique.

The models developed and perfected by the core group will be passed on to these officers for duplication and utilisation at the grass root level. The systematic development and transfer of suitable models which have been tailored according to the specific needs of the local situation will help ensure greater success of adoption and utilisation of this technique within the Department of Agriculture.

Monitoring Mechanism

The ultimate measure of success of this training programme is the utilisation of 'OR' Technique to assist decision making at the planning and operating levels. This requires a good monitoring and follow up system. The Department has adopted the 'PRICE' System for this purpose.

The term 'PRICE' is an abbreviation for the following processes.

P = Pinpoint. The trainers and the trainee will jointly after the course pinpoint potential areas where the techniques could be applied.

R = Record. The agreement reached during the discussion would be recorded. This information would be useful for monitoring purposes.

I = Involve. Both parties would be involved during the implementation. The trainee would provide feedback on the problems they encountered. The trainer would provide advice and solution.

C = Consult. The trainer would inform the trainee of their achievements and / or any corrective measures to be implemented following the consultation.

E = Evaluate. Evaluation on the progress would be conducted at regular intervals.

Progress

As agreed during the Expert Consultation, indicators such as number of officers trained in OR Techniques; the number of applications using OR; and the development of computer-based systems can be used as the yardstick for measuring the progress of this Project. However, due to the short implementation period, only the first two indicators mentioned above were available for this report.

A total of four courses were planned under the In-Country training programme in Malaysia. They were conducted at the following Institutions.

- i) Agriculture Extension Training Institute (ILPP), Serdang, Selangor (19 - 23 May 1992). For participants from the Federal Technical Branches
- ii) Agriculture Development Training Institute (PLPP), Telok Chengai, Kedah (17 - 23 July 1992). For participants from the State Department of Agriculture, Peninsular Malaysia (North Zone)
- iii) Agriculture Development Training Institute (PLPP), Air Hitam, Johor (12 - 17 September 1992). For participants from the State Department of Agriculture, Peninsular Malaysia (South Zone).
- iv) Agriculture Institute (IP), Timbang Mengaris, Kota Belut, Sabah. For participants from East Malaysia. (East Zone) *23-28 Nov. 1992*

The course at ILPP, Serdang was conducted for officers from the relevant Federal Technical Branches (Core Group). The courses at PLPP, Telok Chengai, PLPP Air Hitam and the Agriculture Institute, Timbang Mengaris, Kota Belut were conducted to train the second echelon officers. Fifty-four officers from various disciplines were trained (see Appendix III) . The list of projects where the applications of these techniques being tried out are as in Appendix IV.

CONCLUSION

The ultimate measure of success of any training programme is how the knowledge is being used and applied. Training is just a means and not an end in itself. Basic theoretical and practical knowledge can be imparted to the participants during the course but the skill and expertise have to be acquired through practice.

The successful dissemination and application of this technique depend on a number of factors. The attitude of the user is the most important. The interest shown by the immediate bosses also play a vital role in ensuring success.

Great advances have been made in the area of Operations Research. New techniques have been developed and used. The Stochastic method is slowly giving way to the more accurate and challenging Probabilistic method. Thus all the techniques taught under this programme can be regarded as a prelude to the use of a more advance and sophisticated Operations Research Techniques.

APPENDIX I

COURSE OBJECTIVES

1. To expose participants to the background and the basic concepts of Operations Research.
2. To familiarise participants with the following Operations research Technique :-
 - i) Linear Programming
 - ii) Transportation
 - iii) Project Management
3. To introduce participants to the SAS Basic and SAS OR software package.

COURSE CONTENT

1. Introduction to Operations Research Technique
2. Matrix Algebra
3. Introduction to SAS programme software
(Theory and Practical)
4. Linear Programming (Theory and Practical)
5. Transportation (Theory and Practical)
6. Project Management-
 - i) Critical Path Method (Theory and Practical)
 - ii) Project Evaluation Review Technique
(Theory and Practical)
7. Identification of potential project for
implementation by participants (Discussion)
8. Course Evaluation.

Appendix III a

LIST OF PARTICIPANTS AND THEIR DESIGNATIONS

(CORE GROUP)

No.	NAMES	DESIGNATION
1	Ms Salmah	Lecturer (AI*Serdang)
2	Mr Md Yusof Maidin	Farm Manager (AI*Parit)
3	Mr Che Mohd Nor Che Endok	Farm Manager (AI*Besut)
4	Mr Abd Rauf Mohd Yusof	Farm Manager (AI*Air Hitam)
5	Mr Ramli Ratib	Unit Head (FMC)** Serdang
6	Mr Salahuddin Che Ayob	Officer In-charge (FMC) Lundang
7	Mr Zamani Hussein	Officer In-charge (FMC) Titi Gantong
8	Mr Abd Rashid Abd Rahim	Officer In-charge (FMC) Telok Chengai
9	Mr Nasir Ibrahim	Farm Management Officer (Kelantan)
10	Ms Norlaila Salim	Farm Management Officer (Muar - Johor)
11	Ms Monomoney Gurusamy	Farm Management Officer (Perak)
12	Mr Balan Baharen Abdullah	Farm Management Officer (N.Sembilan)

13	Mr Mohd Zin Hj Mohd Supaat	Unit Head in the Federal Agriculture Centre (FAC) - T. Gantong
14	Mr Sharifuddin Basri	Agriculture Officer (HQ - Ipoh)
15	Ms Zulizah Sulaiman	Unit Head FAC - T. Gantong
16	Mr Azlan Hasni	Agriculture Officer (AI*Parit)
17	Mr Ahmad Fauzi Puasa	Agriculture Officer (Planning and Evaluation Branch - K. Lumpur)
18	Mr Kamal Azmi Kamaruddin	Agriculture Officer (Farmers Development Branch - K. Lumpur)
<p>Note:</p> <p>* AI = Agriculture Institute</p> <p>** FMC = Farm Mechanisation Centre (Transport Unit of the Department is under the control of these centres)</p>		

APPENDIX III b

LIST OF PARTICIPANTS AND THEIR DESIGNATIONS

(SECOND ECHELON)

NORTH ZONE

No	NAME	DESIGNATION
1	Mr Khairuddin Abbas	Officer in-Charge of Agriculture Station (Relau- Kedah)
2	Mr Abd Hamid Tahir	District Agriculture Officer (Seberang Prai Selatan- Penang)
3	Mr Ismail Hassan	Unit Head (Commodity) Agriculture Station (Bukit Merah- Penang)
4	Mr Mat Aris Chin	District Agriculture Officer (Pendang-Kedah)
5	Mr Razak Shafaai	District Agriculture Officer(Langkawi-Kedah)
6	Mr Hashim Saari	Agriculture Officer (Development Division State of Kedah)
7	Mr Nor Azmi Yahya	District Agriculture Officer (Manjung-Perak)
8	Mr Abd Karim Ariffin	District Agriculture Officer Perak Tengah
9	Mr Abd Aziz Deraman	Assistant Agriculture Officer (Taiping-Perak)
10	Mr Adlan Ubat	Agriculture Officer (Kuala Kangsar-Perak)

SOUTH ZONE

No	NAME	DESIGNATION
1	Mr Mohamad Omar	Unit Head (Crop Protection - Selangor)
2	Mr Wan Mohamad Wan Hassan	Unit Head (Soil - Selangor)
3	Mr Zoolkiflie Hj Abd Rahman	Agriculture Officer (Project Development - N.Sembilan)
4	Mr Mohd Nurulhuda L.Salehin	Officer in-charge of Agriculture Station (Chembong- N.Sembilan)
5	Mr Mohd Rosli Adam	District Agriculture Officer (Alor Gajah - Melaka)
6	Mr Bacok Hj Mustaffa	Chief Extension Officer (Johor)
7	Ms Chung Sau Kuan	Farm Management Officer (Johor Bahru - Johor)
8	Mr Hamid Omar	District Agriculture Officer (Temerloh - Pahang)
9	Mr Mohd Hashim Yusof	District Agriculture Officer (Hulu Terengganu - Terengganu)
10	Mr Kamaruddin Ali	Agriculture Officer (Agriculture Complex Ajil - Terengganu)

EAST ZONE

1	Mr Ishak Mohd. Adnan	Agric. Officer (Sandakan)
2	Mr Lim Yee Fah	Agric. Officer (Lahad Datu)
3	Mr Lahari Lasari	Manager, Farmers Organisation (Semporna)
4	Mr Abd. Rashid Alan	Agric. Officer, Commodity Unit, Kota Kinabalu (HQ)
5	Ms Rayanah Hj. Ag. Hamit	Subject Matter Specialist (Tuaran)
6	Mr Abd Rahman Akop	Agric. Officer (Tenom)
7	Mr Teo Su Sin	Research Officer (Tenom)
8	Ms Zuraini Abd Rahman	Research Officer (Sandakan)
9	MS Saleha Lee	Research Officer (Tuaran)
10	Ms Liaw Hiew Lian	Research Officer (Tuaran)
11	Mr Haya Ramba	Research Officer (Tawau)
12	Mr Suhaidi Jahim	Agric. Officer (Training and Planning Unit)
13	Dr Reynard Gondipon	Agric. Officer (Penampang)
14	Mr Wilfred Payah	Chief Agric. Officer (Penampang)
15	Mr Stephen Lim	Agric. Officer, (Kota Belud)
16	Ms Masliah Hj. Suhaimi	Agric. Officer (Penampang)

APPENDIX IV

LIST OF PILOT PROJECTS

NO	TECHNIQUE	LOCATION / COORDINATOR
1	Linear Programming	1. Batu Hampar N.Sembilan (Vegetable Area) 2. Sg. Lebah Kota Tinggi Johor Coordinator : Mr Chuah Piak Chwee
2	Project Management	1. Nucleus Farm Project , Batu Hitam Kg Gajah Perak Tengah Perak. Coordinator: Ms Normah Mustaffa
3	Project Management	Special Project : The use of Operations Research Technique in the Management of Commodity Development Station Titi Gantong Bota Perak. Coordinator: Mr Mohamad Noh Samik
4	Transportation	Distribution of fertiliser and seedlings in the Department of Agriculture Peninsular Malaysia. Coordinator: Mr Abd Razak Abdullah
5	Linear Programming Project Management	Agriculture Institute Air Hitam Agriculture Institute Besut Agriculture Institute Serdang Agriculture Institute Titi Gantong Coordinator: Ms Fatimah Md Nasir

INDONESIA
COUNTRY REPORT OF

PEREZ-GUERERRO TRUST FUND (PGTF) PROJECT
ON INTENSIFYING THE UTILIZATION OF
OPERATIONS RESEARCH IN THE MANAGEMENT
OF AGRICULTURE DEVELOPMENT PROJECTS

INDONESIA REPRESENTATIVE - PGTF PROJECT
MINISTRY OF AGRICULTURE
REPUBLIC OF INDONESIA

December 1992

INDONESIA
COUNTRY REPORT OF

PEREZ-GUERERRO TRUST FUND (PGTF) PROJECT
ON INTENSIFYING THE UTILIZATION OF
OPERATIONS RESEARCH IN THE MANAGEMENT
OF AGRICULTURE DEVELOPMENT PROJECTS

I. INTRODUCTION

As one of the G-77 countries, Indonesia has participated to a project entitled "Intensifying the Utilization of Operations Research in the Management of Agriculture Project", funded by the Perez-Guererro Trust Fund (PGTF) Project and Coordinated by the Government of Malaysia. Other participating countries are Philippines and Thailand.

Operations Research (OR) is concerned with scientific optimal decision making in area modeling of deterministic and probabilistic systems that originate from real life. It begin by carefully observing and formulating the problem and then constructing a simplified conceptual model typically mathematical that attempts to abstracts the essence of the real problem. The application of operations research will ensure better project planning and management as it helps to optimise, avoid cost overruns and delays.

II. OBJECTIVES

The overall of this project is to enhance the utilization of operations research (OR) techniques in the management of agriculture development projects. The wide usage of these tehniques will contribute to better management of the agriculture

development projects. This will be inevitably contribute to increased production and thus higher income to farmers.

The specific objectives of the project are :

1. To train the agriculture officers and project managers in the use of OR techniques.
2. To intensify the utilization of OR techniques in agriculture projects and small farmers development project (Income generating projects).
3. To develop computer-based system that facilitate and enhance the management of agriculture projects.

III. OUTPUTS

The output of the project are :

1. Ten policy and decision maker and fifteen senior staff in the national level were introduced the use of OR Techniques
2. Twenty-five agricultural project managers, trainers and teachers trained in OR Techniques
3. A computer-based system for management of agriculture projects.

IV. THE MANAGEMENT

The project Management consisted of :

- | | |
|---|---|
| Executive Board
(Advisor) | - Dr. Ru'yat Wiratmaja
Director of International
Cooperation Bureau
Ministry of Agriculture |
| National Project Manager/
Indonesia PGTF Represen-
tative | - Dr. Azril Azahari
Head of Planning Division
Agrncy for Agricultural
Education and Training (AAET)
Ministry of Agriculture |
| Consultants/ Trainers | - Dr. Kaman Nainggolan
Head of Data Processing Division
Ministry of Agriculture |
| | - Mr. Hasmand Zusi
Trainers, AAET
Ministry of Agricilture |
| | - Mr. R. Bambang Budhiyana
Staff, International Cooperation
Bureau
Ministry of Agriculture |
| | - Mr. Iski Soeharno
Planner, AAET
Ministry of Agriculture |

V. ACTIVITIES

1. Seminar on Using the techniques of OR in Agriculture Project

The seminar was conducted in the Agency for Agricultural Education and Training in Head Office, Jakarta on August 11, 1992. The seminar was attended by ten policy and decision maker and fifteen senior staff in the Ministry of Agriculture.

The seminar's objectives are to provide indepth information in OR and the role of OR in agriculture project.

Two speakers from the project consultants have participated in delivering talks and finding in the utilization of OR techniques in relation to agriculture projects.

2. The Training of Trainers (TOT) on Operations research.

The training of trainers was implemented in In-service Agricultural Training Center in Ciawi, Bogor from 6 - 16 October 1992. A total of twenty-five project managers, teachers and trainers from almost each province in Indonesia were participated.

The objectives of the training were :

1. To increase the participant's skills in OR techniques
2. To train participants on the use of computer software in OR

Training officially opened by the Director of Bureau of Agricultural Personnel Training and Indonesia PGTF Representative Dr. Azril Azahari. List of Participants and training report as in Appendix.

Training method consisted of (1) lecture and problem solving on resources allocation and transportation model using linear programming method, and project management with PERT/CPM, (2) lecture and practical in using Lindo Program and SAS/OR in solving those problems on OR Techniques, (3) case study on resources allocation in which one group of participants was sent to the farmers group located in Cianjur, West Java. Data was solved by using Lindo program. Another case study was using LP model to solve an Inventory model in which data were get from Tea Plantation Company (PTP.XII) West Java. Both model were shown on appendix 2.

VI. FOLLOW-UP

1. The training on OR will be scheduled and implemented in 1993 funded by the income generating project for marginal and landless farmers
2. The OR techniques will be introduced to all 32 In-service Training Center, 28 Agricultural Information Center, 20 School for Agricultural development, 6 Agricultural Extension Colleges and 1 Fishing College.

BUDGET CONTRIBUTION 1992
(IN US \$)

No.	Activities	PGTF Contribution	Government of Indonesia Contribution
1.	Training		
	a. Seminar (1 day)	-	500.00
	b. TOT (11 days)	1,200	15,000.00
2.	Hardware and Software	16,812.96	
	Total	18,012.96	15,500.00

PROPOSED FOLLOW-UP ACTIVITIES (Phase II)
AND BUDGET CONTRIBUTION
(IN US \$)

No. Activities		Contribution	
		PGTF Project	G O I
1.	Development of Training Module	p.m	-
2.	Development of Computer based system on OR	p.m	-
3.	Training on Agribusiness Management :		
	a. Advanced TOT.II (Incountry training) (2 weeks, 25 persons)	p.m	15,000.00
	b. Skill Training (5 days, 30 persons, 10 provinces)	p.m	75,000.00
4.	Hardware and Software	p.m	-
5.	Overseas Advanced Training for ex-participants in Kuala Lumpur	p.m	-
Total :		p.m	90,000.00.-

REPORT ON
IN-COUNTRY TRAINING OF TRAINERS
ON OPERATIONS RESEARCH

BPLP, CIAWI-BOGOR, INDONESIA
OCTOBER 6 - 16, 1992

I. INTRODUCTION.

As one of G-77 countries, Indonesia has participated to a project entitled "Intensifying the utilization of operations research in the management of agriculture development project", funded by the Perez-Guererro Trust Fund (PGTF) project and coordinated by the government of Malaysia. Four participants had been sent to Kuala Lumpur to attend Training of Trainers on Operations Research which was held from February 10 to 24, 1992.

II. IMPLEMENTATION

1. A seminar on using the technique of operations research in agricultural development project was conducted in August 1992 and was attended by the policy and decision maker in the Ministry of Agriculture in Jakarta.
2. In-country training of trainers on operations research had been conducted from October 6 to 16, 1992 in Balai Penataran dan Latihan Pertanian (BPLP) Ciawi, Bogor and twenty-five project directors from almost each province in Indonesia were participated. Training officially opened by the Director of Bureau of Agricultural Personnel Training and Indonesia PGTF Representative, DR. Azril Azahari. The lists of participants and training schedule were attached.
3. Training Method were consist of (1) lecture and problem solving on resources allocation and transportation model using Linear Programming method. Also, project management with PERT / CPM, (2) lecture and practical on using Lindo Program and SAS/OR in solving those problem on operations research techniques, (3) case study on resources allocation in which one group participants was sent to the farmers group located in Cianjur, West Java to find some accurate data. Data was solved by using the LINDO Program which can be shown in annex 1. Another case study was using LP model to solve an Inventory Model. This data were took from one of Estate Plantation Company also in West Java and solution shown in annex 2.

III. EVALUATION

1. Most of participants felt satisfied and request the request PGTF project to provide them with hardware of a compatible computer in order to make them possible to apply those knowledge and skills on operations research in their main task in the field.
2. Fortunately, this kind of training will be scheduled and conducted in this coming year funded by the project for Income Generating Project for Marginal and Landless Farmers (P4K).
3. Moreover, this techniques will be introduced to all inservice training center in Ministry of Agriculture as soon as possible.

IV. SUGGESTION

1. Since this techniques are more useful to accelarate the agricultural development project, it will be more helpful if the PGTF Project could provide each partcipated countries (Indonesia, Malaysia, Phillipines and Thailand) with three pieces of Mini Computer (NOTEBOOK) as soon as possible.
2. We strongly request PGTF Project Director to conduct the advance training of trainers on operations research for those participants that had been trained in Kuala Lumpur last February. 1992.
3. Point 2 also could be considered as a meeting and sharing each expertise , skills and experience among those ex-participants.

SCHEDULE "TRAINING OF TRAINERS ON OPERATION RESEARCH"
CIAWI-BOGOR, 6 - 15 OCTOBER 1992

DAY/DATE	TIME	ACTIVITY	LEGEND
Tuesday/ 6 Oct. 1992	08.00-10.15	Introduction	
	10.15-10.45	Tea Break	
	10.45-12.30	Operation Research	Continue
	12.30-14.30	Lunch	
	14.30-16.15	Linear Programming	Introduc- tion
	16.15-16.45	Coffee Break	
	16.45-18.00	Linear Programming	Continue
Wednesday- Thursday 7-8 Oct. '92	08.00-10.15	LP	Exercises Case Study
	10.15-10.45	Tea Break	
	10.45-12.30	LP	
	12.30-14.30	Lunch	
	14.30-16.15	LP	
	16.15-16.45	Coffee Break	
	16.45-18.00	Linear Programming	
Friday/ 9 Oct. 1992	08.00-11.30	LP	
	11.30-14.30	Lunch	
	14.30-16.15	LP	
	16.15-16.45	Coffee Break	
	16.45-18.00	LP	

LIST OF PARTICIPANT

1. Nani Sufiani (Central Java) : Project Manager
2. Amelia Nani Siregar (West Java) : Project Manager
3. Titin Hadiati (West Java) : Project Manager
4. Eny Suhaeni (West Java) : Project Manager
5. Wiwin Sunarti (West Java) : Project Manager
6. Budiman (West Java) : Project Manager
7. Muhardja (West Java) : Project Manager
8. Sugeng Widodo (West Java) : Project Manager
9. Ukan Supriyatna (West Java) : Project Manager
10. Supriyadi (West Jawa) : Project Manager
11. Sri Astuti (Jakarta) : Project Manager
12. Sri Rahayu (Jakarta) : Project Manager
13. Puji Rahayu (Jogyakarta) : Project Manager
14. Budi Setiono (Jogyakarta) : Project Manager
15. Soleh Widodo (Central Java) : Project Manager
16. Sudarno (Central Java) : Project Manager
17. Deden Kardaya (Jakarta) : Project Manager
18. Wijaya (Lampung) : Project Manager
19. Andi (East Java) : Project Manager
20. H. Rustam (South East Sulawesi) : Project Manager
21. Rustam M. (South Sulawesi) : Project Manager
22. Mashur (West Nusa Tenggara) : Project Manager
23. Ridwan (East Nusa Tenggara) : Project Manager
24. Sri Laila (Maluku) : Project Manager
25. Teddy Rachmat (Irian Jaya) : Project Manager

PHILIPPINES
COUNTRY REPORT

ON

"INTENSIFYING THE UTILIZATION OF
OPERATIONS RESEARCH IN THE
MANAGEMENT OF AGRICULTURAL
DEVELOPMENT PROJECTS"

BUREAU OF AGRICULTURAL RESEARCH
Department of Agriculture, Philippines
PEREZ GUERRERO TRUST FUND
DEPARTMENT OF AGRICULTURE, MALAYSIA
December 1992

PHILIPPINE REPORT

"On Intensifying the Utilization of Operations Research
in the Management of Agricultural Development
Project: Research and Development"

T A B L E O F C O N T E N T S

	Page Number
1.0 Introduction	
1.1 Rationale	2
1.2 Objectives of the Project	2
1.3 Scope and Methodology	3
2.0 Computer Acquisition and Software Installation	3
3.0 In-Country Training	3
 Attachments:	
1 - Technical Specifications of SAS-OR Computers	5
2 - Training Reports	6-13
3 - Case Study: Profit Maximization Through Effective Land Use	14-35
4 - Budget Summary, SAS-OR, Philippines	36
5 - Budget Summary, Post-Evaluation Workshop	37
5 - SAS-OR Project Team, Philippines	38

1.0 INTRODUCTION

1.1 Rationale

The Department of Agriculture of the Philippines, through the Bureau of Agricultural Research, is institutionalizing the extension-research linkage whereby the farmers' needs define the kind of extension work required from the Department and the research support needed in order to continually improve the extensionists' delivery of services. Basically, the research system seeks to improve and maintain agricultural production on a sustainable level. It also ensures that premium quality and acceptability of the agricultural commodities both raw and processed and the timeliness of the production and processing activities are met. Considering these parameters for successful farming enterprises, the operations for both research management and agricultural extension have to be closely integrated to facilitate monitoring towards an efficient delivery of public services.

In this regard, the Operations Research is deemed useful in streamlining the DA operations. Since most of the details of operations involve statistics, the Statistical Analysis System was shown to be effective by the PGTF project management in Malaysia. The SAS-OR was introduced by the Malaysian Government through the Perez-Guerrero Trust Fund Project in the "Utilization of Operations Research in the Management of Agricultural Development" to Indonesia, Malaysia, Philippines and Thailand in the context of regional cooperation within ASEAN.

The system of using SAS-OR in the management of agricultural development projects, as conceived by the Department of Agriculture of Malaysia, will be widely disseminated and applied on a staggered basis in the Philippines. The SAS-OR seeks the determination of the best course of action of a decision-maker under the restriction of limited resources. Specifically, for the Philippines, the immediate problems of the research system in the management of dissemination of agricultural technology involve allocation of limited resources and optimal scheduling of activities in project management. Thus, techniques in OR like linear programming and critical path analysis are applicable in solving these problems.

1.2 Objectives of the project

The main objective of the project is to enable the Department officials in utilizing the SAS-OR in the management of agricultural development programs. Specifically, it aims to achieve the following:

- a) Develop capability of a group which will spearhead its use by acquiring computer and the SAS-OR software; and
- b) Transfer the technology to the Department research operations and planning officials and staff, the agriculture and fishery councils, the local government officials and farmers/farmer organizations.

1.3 Scope and Methodology

The SAS-OR will be applied to project management, transportation, land use and resource allocation. The objectives above were met by:

- a) first orienting the DA officials, heads of agriculture and fishery councils and head of farmer organizations on the application of SAS-OR in research management as well as in farm operations in the Research Management Working Group (RMWG) and the Research and Training Advisory Committee (RTAC);
- b) acquisition of computers and the SAS-OR software which were used by the pool of trainers in Malaysia;
- c) conduct of consultations between the SAS-OR experts from the University of the Philippines and the ultimate users from the research system regarding the practical application of the theories to the real research/farm conditions; and
- d) completion of training of the users in the pilot regions for SAS-OR implementation and monitoring of the actual use of the OR system.

2.0 Computer Acquisition and Software Installation

Two PC's, 1 laptop, 2 printers, 2 sets of software were purchased as of April 1992 (see attachment 1). All are installed at BAR. Since both regions have no license in using the software, they are informed that they can use the computer at BAR any time. Likewise, we have expressed our plan to have a regular visit together with some UPLB-IMSP staff for assistance and consultations with regards to the formulation of equations to the pilot regions in order to monitor the status of their applications.

3.0 In-country Training

The training was conducted last August 31, 1992 to September 7, 1992 for the purpose of understanding the basic concepts and methodology of OR, familiarization in the use of OR techniques, to formulate problems as OR models in linear programming and in project management. It was participated by ten (10) participants, 3 from region 3, 2 from region 10 and 4 from Bureau of Agricultural Research. They were selected from different divisions; one (1) from technology packaging, one (1) from planning and one (1) from research division (see attachment 2).

A total of seventy thousand and four hundred ninety pesos (P69,490) was incurred during the eight (8) day training. (Please see attachment 2, page 7). This was conducted with the assistance of the University of the Philippines at Los Baños - Institute of Mathematical Science and Physics (UPLB-IMSP) staff to act as resource persons. They expressed willingness to extend their assistance/participation in this project by involving them in monitoring, formulating problems and evaluating the application of the software in the pilot areas.

The participants were taught the application of SAS-OR using linear programming, profit maximization, resource allocation and scheduling. Participants were trained also to solve their own case study.

DA-Region 3 presented their problem using linear programming in crops prioritization considering different constraints like labor, land, capital and others. DA-Region 10, on the other hand, reported on profit maximization through effective land use (see attachment 3).



Genesis
Computer Systems

Shop No. 1 Park Avenue
Computer Gallery, Robinsons Galleria
Edsa cor. Ortigas Ave., Quezon City
Quintin Syquia, Prop.
TAN S2323 A1761 A-0 VAT No. 31 8-001901
Tel. 632-9601 Easy Call 869-1111 Pager 211593

DELIVERY RECEIPT

N: 352

TO: BUREAU OF AGRICULTURAL RESEARCH
DATE: April 27, 1992
ADDRESS: Dept. of Agriculture, 3rd Flr. ATI Bldg., Elliptical Road
Diliman Q.C.

Salesman	P. O. No.	Invoice No. 874	Terms C.O.D.
----------	-----------	-----------------	--------------

Received the following items in good order and condition.

QTY.	UNIT	ITEM DESCRIPTION	UNIT PRICE	AMOUNT
2	units	GENESIS PC/AT 386SX 25" IBM COMPATIBLE SYSTEM - 4MB Memory on board (33MHZ) - VGA Card - Super IDE Controller Card - 1 x 1.2MB Floppy Disk Drive - 1 x 1.44MB Floppy Disk Drive - Mini Tower Case with Power Supply - Extended keyboard ^{9102 keys. PHIL-C63}		
2	units	85MB Hardisk (SN: 1199000000 / 1199000000)	50,000.	100,000.00
2	pcs.	80387 Matco processor for SX		
2	units	Anbonn VGA Colored Monitor 14" (SN: 1199000000 / 1199000000)	16,600.	33,200.00
2	units	Epson 10-1170 printer with cable (SN: 1199000000 / 4199000000)	27,500.	55,000.00
1	unit	Flyer 80386SX Laptop (SN:)		57,000.00
				<u>245,200.00</u>

FREE : 2 set CPU cover
2 sets Printer cover
2 set ...

PAID APR 22 1992

CONDITIONS

This Delivery Receipt is subject to the following terms and conditions.
* Our responsibility ceases after the merchandise is delivered and acknowledged to be in good order and condition.
* All overdue accounts will be charged 36% per annum.
* Should any legal action arise out of this transactions the customer agrees to submit to the jurisdiction of the courts of Makati.
* An additional sum equal to twenty-five (25) percent of the amount due but in no case less than one thousand pesos (P1,000.00) will be charged the vendor to cover collection costs and attorney's fees.

Please make all checks payable to
GENESIS COMPUTER SYSTEM
crossed with or "payee account only"

Received the above articles in good order and condition.

Delivered by: _____
Checked by: _____

By _____
AUTHORIZED SIGNATURE

DATE _____

Approved: _____
GENESIS COMPUTER SYSTEM

Interaction among participants and course coordinators have been to the full satisfaction of the evaluators. Resource persons were found to be very knowledgeable and adept in the subject matter. Their mastery of the software and operational research has been skillfully articulated in imparting their knowledge of the analytical tool. Their discussions adequately covered their respective topics. Their ability to draw trainee participation has helped in emphasizing the relevance of their subject matter on the overall program.

In general, the participants acknowledged their lack of background on SAS-OR before undergoing the training. At the end of the 8-day activity, they expressed understanding of the program.

Overall, the attainment of the course objective has been realized at 80% fulfillment.

TRAINING REPORT
"ON INTENSIFYING THE UTILIZATION OF
OPERATIONS RESEARCH IN THE
MANAGEMENT OF AGRICULTURE
DEVELOPMENT PROJECT"
Philippines
(August 31 - September 7, 1992)

I. RATIONALE

The origin of Operations Research (OR) emerged in Britain during World War II. British used quantitative methods in the employment of the radar, their new found invention. The work was named "Operational Research" because scientists of various disciplines were gathered to analyze operational problems in the war against Germany. During that time, OR was used in solving problems in convoy operations, anti-submarine operations, strategic bombing operations and mining operations.

Today, OR is being used by large private corporations which are making large profit because of OR application. Oil companies were the first to use OR. Then there are individual, manufacturing and government sector hospitals, libraries, financial institutions and advertising companies adopting OR.

Operations Research (OR) seeks the determination of the best course of action of a decision maker under the restriction of limited resources. It is directed at supporting the manager in his decision making and operational problems. This in line with the Accelerated Agricultural Production Project - Research and Outreach Subproject (AAPP-ROS) objective of enhancing Research Management which is being institutionalized in the Department of Agriculture through Bureau of Agricultural Research (BAR).

Many of the problems faced in the management of dissemination of agricultural technology involve allocation of limited resources and optimal scheduling of activities in project management. Thus, techniques in OR like linear programming and critical path analysis are applicable in solving these problems.

This training course in OR provides development of capability to use OR techniques in these areas of application.

II. OBJECTIVE OF THE TRAINING COURSE

This training course was conducted with the following objectives:

1. Understand the basic concepts and methodology of OR;
2. Be familiar in the use of OR techniques in
 - a. resource allocation
 - b. transportation and assignment
 - c. activity scheduling
3. Formulate problems as OR models in linear programming and in project management;
4. Use computer software in OR, particularly SAS/OR; and
5. Do supervised case study of actual problems using the OR methodology.

III. FORMAT OF THE TRAINING COURSE

The training course was divided into three (3) modules:

1. Module I. Basic OR Concept

In this module, the participants were taught, through lectures, the operations research approach to solving problems (OR methodology) and the basic theories and principles in linear programming and critical path analysis. These concepts enabled them to understand how OR can be used to support their decision making and operational problems in the management of agricultural research.

2. Module II. OR Model Construction and Computer Based Solution

This module develops skills and techniques in the construction of appropriate OR models and use of computer OR software. In particular, they learned how to formulate optimization problems and use of OR computer softwares using

the most suitable OR model representing the system. Moreover, they were exposed to and taught the use of SAS/OR for solving their formulated OR problem on hands-on basis.

3. Module III. OR Case Studies

The participants were supervised in working out their own actual problems using the OR methodology, the models and techniques they have learned from Modules I and III.

IV. LIST OF PARTICIPANTS

A total of ten (10) DA Staff participated in this training course. Participants were selected from different divisions; one (1) from Technology Packaging, 1 from Planning and 1 from Research Division.

DA Region 3:

Ms. Libertad Trinidad
Supervising Agriculturist
Technology Packaging Division
DA Region 3, San Fernando,
Pampanga

Ms. Lilian C. Garcia
Agriculturist II
Planning Division
DA Region 3, San Fernando,
Pampanga

Ms. Benjamin Baltazar
Agriculturist II
Research Division
DA Region 3, San Fernando,
Pampanga

DA Region 10:

Ms. Wilfreda Maslog
Agriculturist II
Research Division
Dalwangan, Bukidnon

Ms. Alanita Ares
Agriculturist II
Research Division
Dalwangan, Bukidnon

DA-BAR:

Mr. Amador Macabeo
Agriculturist II
Program Development Division (PDD)

Mr. Rocky Marte
Project Development Officer III
Program Development Division (PDD)

Ms. Cecilia B. Alcantara
Agriculturist II
Research Coordination Division (RCD)

Mr. Ricarte Castro
Agriculturist II
Research Coordination Division (RCD)

Mr. Luis Alejandro I. Tamani
Information Systems Analyst I
Information Systems Division (ISD)

V. TRAINING COURSE SCHEDULE

DAY 1 (Monday)	8:00 - 9:00	Registration
	9:00 - 11:00	Opening Ceremonies
	11:00 - 12:00	Leveling of Expectations: Objectives, Procedures
	12:00 - 1:00	Lunch Break
	1:00 - 3:00	Lecture: Intro. to SAS, SAS/OR
	3:00 - 5:00	Laboratory: Data Sets and Data Sets Management
DAY 2 (Tuesday)	8:00 - 10:00	Lecture: Linear Programming
	10:00 - 10:30	Coffee Break
	10:30 - 12:00	Lecture : LP Formulations
	12:00 - 1:00	Lunch Break
	1:00 - 5:00	Laboratory: SAS/OR(PROC LP)
DAY 3 (Wednesday)	8:00 - 10:00	Lecture: LP Sensitivity Analysis
	10:00 - 10:30	Coffee Break
	10:30 - 12:00	Lecture: LP Sensitivity Analysis (continuation)
	12:00 - 1:00	Lunch Break
	1:00 - 5:00	Laboratory: SAS/OR (PROC LP)

DAY 4 (Thursday)	8:00 - 10:00	Lecture: Integer Programming
	10:00 - 10:30	Coffee Break
	10:30 - 12:00	Lecture : Integer Programming Formulations
	12:00 - 1:00	Lunch Break
	1:00 - 5:00	Laboratory: SAS/OR(PROC LP)
DAY 5 (Friday)	8:00 - 10:00	Lecture: Transportation Problem
	10:00 - 10:30	Coffee Break
	10:30 - 12:00	Lecture : Assignment Problems
	12:00 - 1:00	Lunch Break
	1:00 - 5:00	Laboratory: SAS/OR (PROC TRANS, PROC ASSIGN)
DAY 6 (Saturday)	8:00 - 10:00	Lecture: Critical Path Analysis
	10:00 - 10:30	Coffee Break
	10:30 - 12:00	Lecture : Critical Path Analysis (Continuation)
	12:00 - 1:00	Lunch Break
	1:00 - 5:00	Laboratory: SAS/OR (PROC CPM, PROC GANTT)
DAY 7 (Sunday)	8:00 - 12:00	Case Study
	12:00 - 1:00	Lunch Break
	1:00 - 5:00	Case Study
DAY 8 (Monday)	8:00 - 12:00	Case Study
	12:00 - 1:00	Lunch Break
	1:00 - 4:00	Case Study Presentation of Results
	4:00 - 6:30	Training Integration/ Evaluation
	6:30 - 7:00	Closing Ceremonies

VI. TRAINING MANAGEMENT

The training was coordinated by the project team, headed by Ms. Cynthia D. de Mesa-Corvite, PGTF country representative, with the collaboration of the Institute of Mathematical Sciences and Physics (IMSP) headed by Dr. Felino Lansigan from the University of the Philippines at Los Baños, College, Laguna. Five (5) experts staff of Institute of Mathematical Science and Physics (IMSP) in Operations Research acted as resource persons/trainors and were assisted by the four (4) trainors from Bureau of Agricultural Research (BAR).

VII. TRAINING OUTPUTS

During the first three (3) days of the training course, participants were taught of the basic principles in Operations Research. It was on the fourth day when trainors started teaching them the application of SAS-OR using linear programming, profit maximization, resource allocation and scheduling. Participants were trained also to solve their own case study.

Da-Region 3 presented their problem using linear programming in crops prioritization considering different constraints like labor, land, capital and others. DA-Region 10, on the other hand, reported on profit maximization through effective land use.

The relevance and usefulness of the SAS-OR in the different aspects of Agriculture has been realized by the trainees. Although the concepts and theoretical foundation of the analytical tool has been found to be difficult to grasp in such a span of time, the amount of practical work and workload given throughout the course has been within the capability of the participants. In general, the course has been evaluated favorable.

The modular set-up of the course has been found effective in understanding the essence of SAS-OR. In general, the participants have expressed a strong agreement that the course has imparted knowledge that which is relevant and applicable to their jobs. The course was said to be highly recommendable.

There was a split consensus on the evaluation statement "the duration of the course was exactly right", where 4 disagreed and 4 agreed out of 8 responses. This may have been affected by the participants' enthusiasm to apply their newly acquired knowledge to their respective regions and at the same time cognizant of the fact that more

exposure to the software and to exercises in its application are needed under the guidance of the trainers. There seems to be a prevailing sentiment that there is more of SAS-OR to be explored than that which was presented in the duration of the course.

This would also reflect the confidence of the participants in using the program. Though there was an increase in their percentage of confidence in using the tool before and after undergoing the training, there still exist qualms as to the participants' effectiveness in implementing the analytical tool.

Interaction among participants and that between participants and course coordinators has been to the full satisfaction of the evaluators. Resource persons were found to be very knowledgeable and adept in the subject matter. Their mastery of the software and operational research has been skillfully articulated in imparting their knowledge of the analytical tool. Their discussions adequately covered their respective topics. Their ability to draw trainee participation has helped in emphasizing the relevance of their subject matter on the overall program.

However, there is a common need for the trainers to adjust their style of discussions to the level of the trainees. It was found out that not all participants are rightfully oriented on background knowledge such as statistical analysis which could prove a great help in grasping the subject matter. There was a clamor for bringing down the discussion from the theoretical level to the practical level. The complexity of the formula and equations must be expressed and taught in a form readily understood by the layman.

The accommodations was proven to have provided comfort to the participants. The food, though palatable and savory was found to be an unbalanced diet. There was a common craving for fish, meat and vegetables.

Recreational activities such as games and sports were wanting. Socialization transcending the professional level has been sacrificed for more exposure and exercises on the program implementation.

The training environment was unanimously assessed to be very conducive to learning and that the participant composition had enhanced and facilitated knowledge acquisition. In general, the participants acknowledged

their lack of knowledge before undergoing the training. At the end of the end of the 8-day activity, they expressed a full acquisition of knowledge about the program.

Overall, the attainment of the course objective has been realized at 80% fulfillment.

Report of
Intensifying the Utilization of Operations Research
Techniques in the Management of Agriculture
Development Project in Thailand

Report of Intensifying the Utilization of Operations Research
Techniques in the Management of Agriculture
Development Project in Thailand

Background

Malaysia was awarded a project entitled "Intensifying the Utilization of Operations Research Techniques in the Management of Agriculture Development Project" by the Perez-Guerrero Trust Fund (PGTF) of the G-77 countries. Four asean countries i.e. Indonesia, Philippines, Malaysia and Thailand are participating in the project.

The area of focus in Thailand is the optimal allocation of resources among various crops to maximise incomes. The problem anticipated is the capability of the extension workers to present alternatives resulting from OR application to the farmers. We hope that extension workers be exposed to OR and be trained to disseminate the results to the farmers in the most simplified form. This should be simple enough for practical use by the farmers.

Project Objectives

The overall goal of the project is to enhance the Utilization of Operations Research Techniques in the Management of Agriculture Development projects. The wide usage of these techniques will contribute to better management of the agriculture development projects. This will inevitably contribute to increase production and thus higher income to the farmers.

The outputs of the projects are :-

- a) The officers trained in the use of OR techniques
- b) The incidences these techniques are utilized and applied
- c) A computer-based system for management are developed.

Project Activities

The activities identified under this project are as follows :-

- a) Expert consultation
- b) Workshop on Operations Research for senior executives
- c) Training of trainers on Operations Research
- d) Hardware and software management
- e) In-country training of officials on Operations Research
- f) Post-Evaluation workshop on Operations Research

Summary of implementation

a) Expert Consultation

An expert consultation was held in Kuala Lumpur Malaysia on 21-25 October, 1991.

The outputs of the workshop were :-

- workplans of training of trainers
- workplans of in-country training
- workplan of hardware and software procedure
- workplan of post-evaluation workshop
- the specific appropriate system

b) Training of trainers

It was held in Kuala Lumpur on 10-24 January, 1992. Four officials from Agricultural Extension Department were attended.

c) Hardware and software procurement

- 2 units of micro computer
- 1 P.C. viewer
- 1 printer
- SAS - OR software

d) In-country training

The report is attached in Appendix I.

e) OR implementation working group

The utilization of OR for farm planning in pilot farm was shortage of data availability. Therefore there is a need to solve this problems by consulting to the experts. The personels from Kasetsart University were invited to be a member of working group for solving the problems by improving data collection form to gain more information for Linear programming processing.

f) Case study

According to the shortage of data availability, one farm of Lopburi province was studied by working group but the result of the study was not satisfaction, since the alternatives of farm's activities were not the input of the processing of the program.

(see Appendix II.)

APPENDIX I

In-Country Training on Operations research
 Department of Agricultural Extension, Thailand

objectives :

After the training course :

1. The participants should understand the concept of OR (L.P.)
2. The participants should understand how to use SAS-Base and SAS-OR (L.P.)
3. The participants should know how to transfer L.P. to the Agricultural Extension project in their responsible area.

Duration : 11-16 May, 1992

Place : Planning Division, Department of Agricultural Extension, Bangkok, Thailand.

Content :

- Introduction to the project	1 hour
- Introduction to Operations Research	1 hour
- Linear Programming	7 hours
- Sensitivity Analysis	4 hours
- Introduction to Computer	1 hour
- SAS-Base and SAS-OR	5 hours
- Case study	15 hours
- Group Discussion	2 hours
(How to apply OR to Agricultural Extension in Thailand)	

Instructors :

- Planning Division, Department of Agricultural Extension
- Department of Agriculture and Resource Economics, Kasetsart University
- Faculty of Commerce and Accounting, Chulalongkorn University

Participants :

- 13 Subject Matter Specialists from Provincial Agricultural Extension Office
- 2 Subject Matter Specialists from Regional Agricultural Extension Office
- 2 Subject Matter Specialists from Agricultural Business Promotion Division
- 4 Subject Matter Specialists from Planning Division

Result :

1. 21 SMSs understand the concept of OR (L.P.).
2. 21 SMSs understand how to use SAS-Base and SAS-OR (L.P.).
3. 21 SMSs know the concept how to transfer L.P. to the Agricultural Extension Project in their responsible areas.

The conclusion from group discussion

1. Linear Programming should be able to apply in farm plan for farmers for maximize income.

2. The participant would like to do a pilot project by using Linear Programming to help farmers in farm plan by selecting 3-5 farmers in each province.

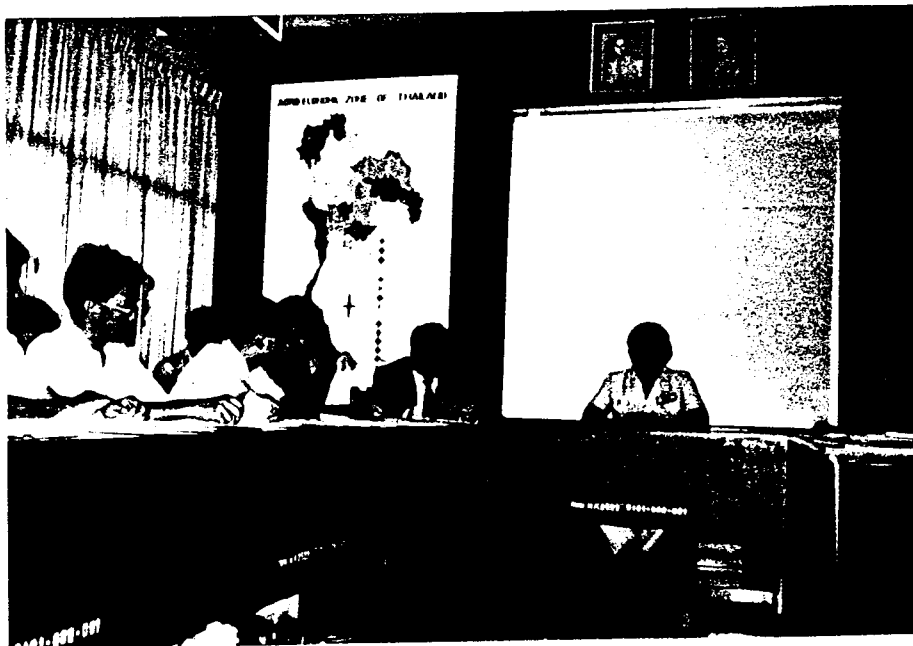
3. The participants' work plan after training course as follow :

3.1 Select 3-5 farmers & gathering data	June	1992
3.2 Data Analysis	July	1992
3.3 Study Tour to Malaysia	Aug.	1992
3.4 Implementation	Aug. - Dec.	1992
3.5 Evaluation	Dec.1992 - Feb.	1993

In Country Training
on
OR Techniques in Agricultural Extension
11-16 May 1992
Planning Division, DOAE



Mr. Charern Sukhanantapong, Director of Planning Division
Officially declared the training course open.

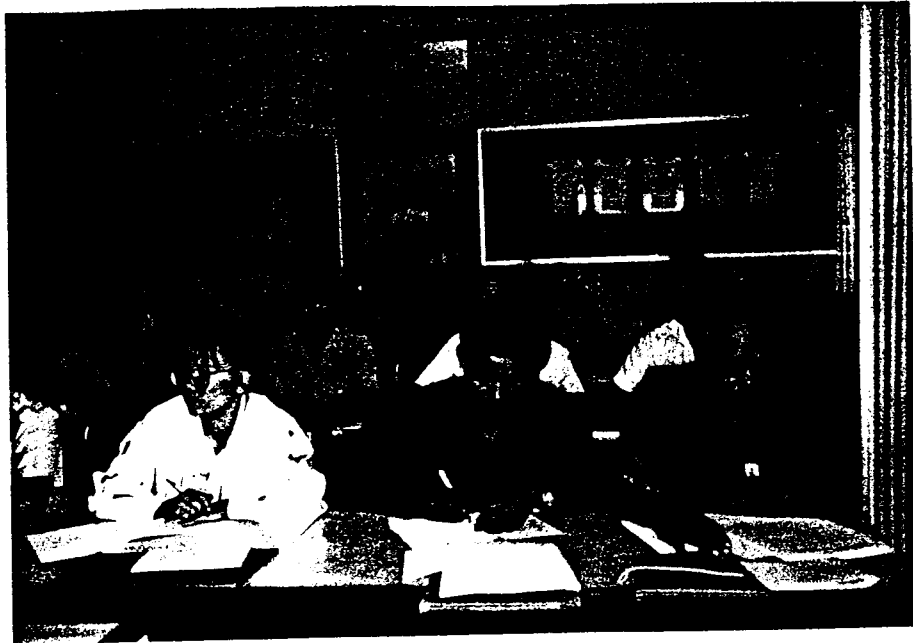


Mr. Mohamad Nok Samik briefed the participants on the Intensifying
the Utilization of OR in the Management of Agricultural Project.



21 participants from provincial Agricultural Extension Offices,
Regional Agricultural Extension Offices, Agri-business Promotion
Division and Planning Division.



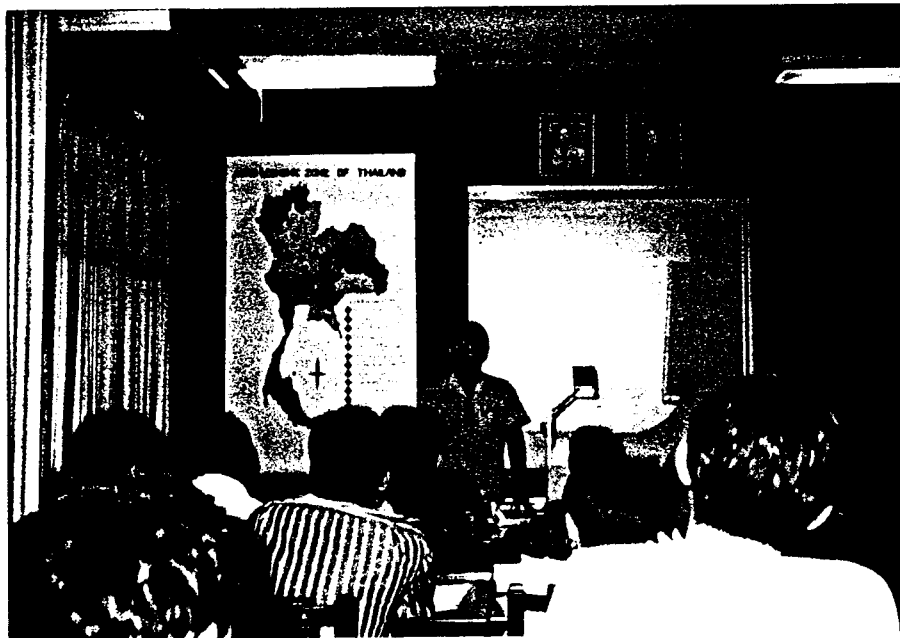


During the training session

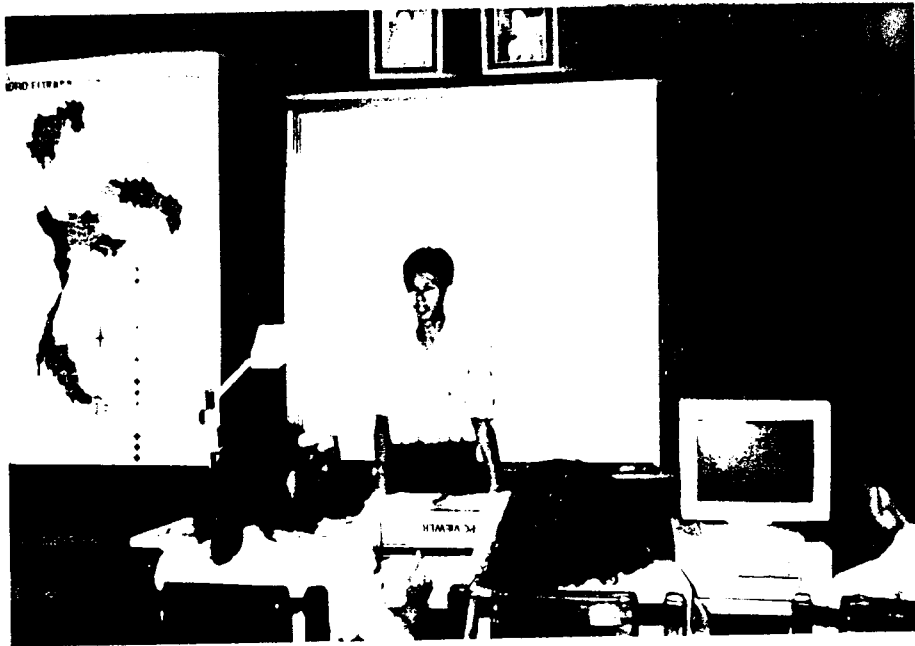




Briefing on Linear Programming by the guest lecturer from Chulalongkorn University



Briefing on Sensitivity Analysis by the guest lecturer from Kasetsart University

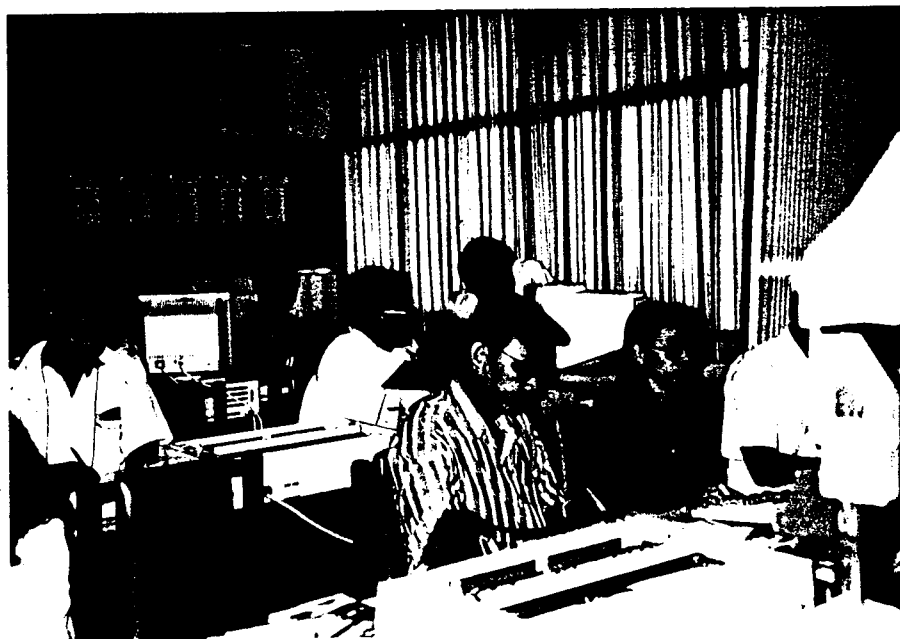


Lectures by the staff from Data Processing Sub-division on
'Introduction to Computer Application' and 'Use of BASE SAS'



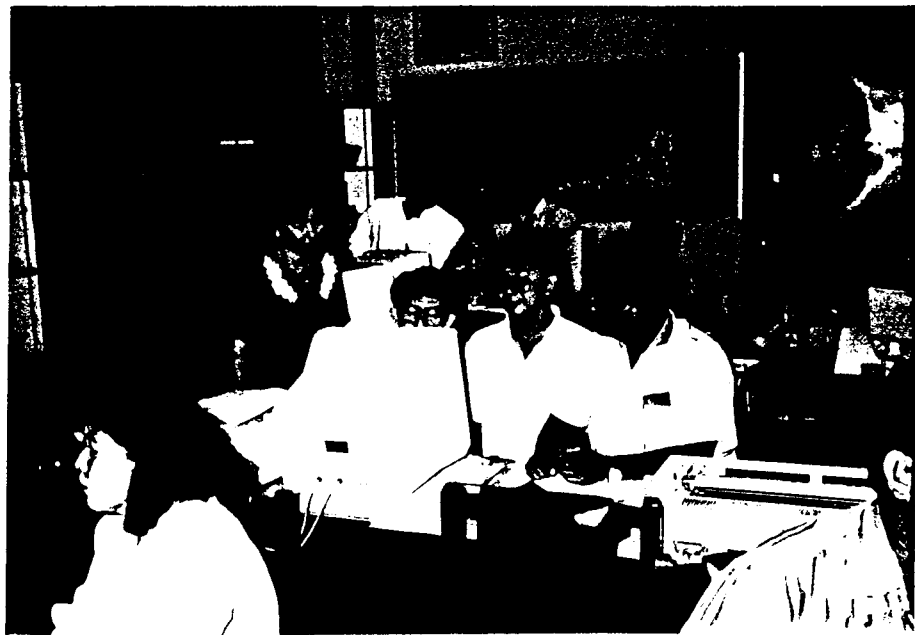


Utilization of computer for a case study on agricultural extension planning at farm level.





Group practical training





Mr. Thitirong Rungrawd, Thailand FGTF Representative, acted as the moderator during the discussion on the application of OR Techniques in Agricultural Extension.



Group photo among participants, Thailand FGTF Representative, and staff of TIS Co., Ltd., the sale representative for SAS-OR

ACKNOWLEDGEMENT

The project management is greatly indebted to the Perez-Guererro Trust Fund (PGTF) of the G77 countries as the main source of finance for the project entitled "Intensifying the Utilization of Operations Research Technique in the Management of Agriculture Development Project", hence took root from June 1991.

Thanks and appreciation are recorded for the continuous support, advice and encouragement from the Director-General of Agriculture, who incidentally is also the Country Project Coordinator. The project is described as 'smooth sailing' under his tenureship.

To all the participating countries, viz., Indonesia, Thailand, Philippines and Malaysia, the fine cooperation, contribution and participation in making the project successful warrant special mention.

Last but not least, the project management would like to take this opportunity also to thank all supporting staff of all the participating countries who had directly or indirectly contributed to the successful implementation of the project.

Thank you.

PGTF Project Management,
Department of Agriculture,
Malaysia.

31 March, 1993.