

PPA:MAL 15025

ASIAN DEVELOPMENT BANK

PROJECT PERFORMANCE AUDIT REPORT

ON THE

**PAHANG BARAT INTEGRATED AGRICULTURE DEVELOPMENT PROJECT
(Loan No. 602-MAL)**

IN

MALAYSIA

February 1996

CURRENCY EQUIVALENTS

Currency Unit - Ringgit (RM)

		At Appraisal	At Project Completion	At Postevaluation
RM1.00	=	\$0.4219	\$0.3802	\$0.4082
\$1.00	=	RM2.3702	RM2.6300	RM2.4500

ABBREVIATIONS

BME	-	Benefit Monitoring and Evaluation
DOA	-	Department of Agriculture
EA	-	Executing Agency
EIRR	-	Economic Internal Rate of Return
FAMA	-	Federal Agriculture Marketing Authority
FELCRA	-	Federal Land Consolidation and Rehabilitation Authority
FIRR	-	Financial Internal Rate of Return
FOA	-	Farmers Organization Authority
MARDI	-	Malaysian Agricultural Research and Development Institute
MOA	-	Ministry of Agriculture
PCR	-	Project Completion Report
PEM	-	Postevaluation Mission
PMU	-	Project Management Unit
PSC	-	Project Steering Committee
TA	-	Technical Assistance

NOTES

- (i) The fiscal year (FY) of the Government ends on 31 December.
- (ii) In this Report, "\$" refers to US dollars.

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BASIC PROJECT DATA
Pahang Barat Integrated Agriculture Development Project (Loan No. 602-MAL[OCR])

KEY PROJECT DATA (\$ million):	As per Bank Loan Documents	Actual
Total Project Cost	50.30	28.88
Foreign Currency Cost	22.70	12.49
Bank Loan Amount/Utilization	22.70	12.49
Bank Loan Cancellation	--	10.21

KEY DATES:	Expected	Actual
Fact-finding		13-31 Jul 1981
Preappraisal		14 Sep-2 Oct 1981
Reformulation		10-28 May 1982
Appraisal		9-28 Aug 1982
Loan Negotiations		18-20 Oct 1982
Board Approval		23 Nov 1982
Loan Agreement		23 Dec 1982
Loan Effectivity	23 Mar 1983	12 May 1983
First Disbursement		12 Nov 1984
Final Disbursement		27 Sep 1991
Loan Closing	31 Mar 1991	7 Feb 1992
Project Completion	31 Dec 1990	31 Dec 1991
Months (Effectivity to Completion)	93.1	103.7

KEY PERFORMANCE INDICATORS (%):	Appraisal	PCR	PPAR
Economic Internal Rate of Return:			
- Whole Project	20.0	not calculated	15.2
- Estate Development Component	18.0	11.2	15.6
- Cocoa and Fruit Component	40.6	13.8	25.7
Financial Internal Rate of Return	not calculated	not calculated	12.3

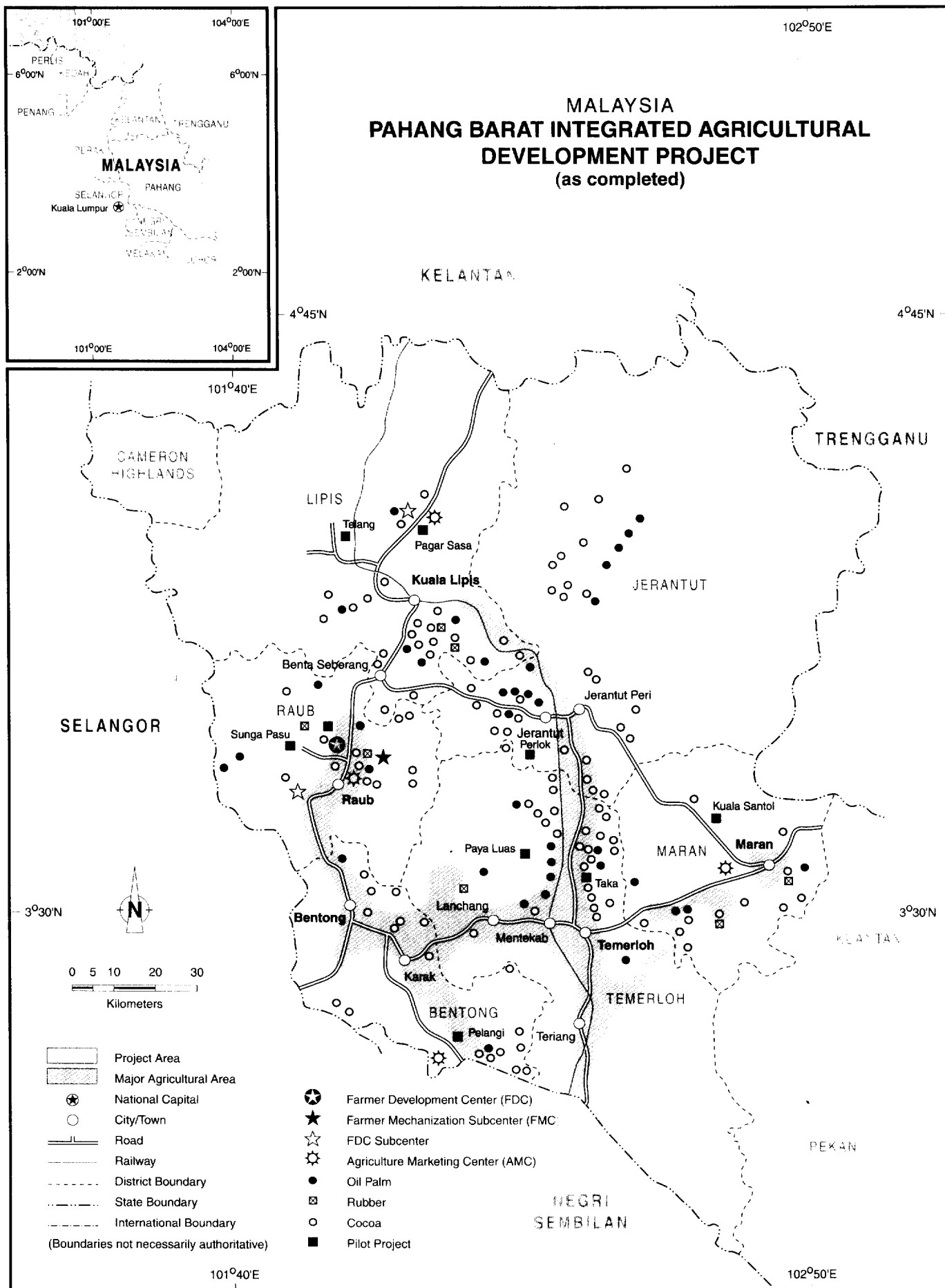
BORROWER: Malaysia

EXECUTING AGENCIES:

- The Federal Land Consolidation and Rehabilitation Authority (FELCRA) in the Ministry of Rural Development (formerly the Ministry of Land and Regional Development)
- The Ministry of Agriculture (MOA) through specific supporting agencies
 - The Department of Agriculture (DOA)
 - The Federal Agricultural Marketing Authority (FAMA)
 - Farmers Organization Authority (FOA)
 - Malaysian Agricultural Research and Development Institute (MARDI)
 - Department of Irrigation and Drainage

MISSION DATA:

Type of Mission	No. of Missions	Person-days
Fact-finding/Preappraisal	3	266
Appraisal/Loan Negotiation	1	140
Inception	1	27
Review	7	72
Special Loan Administration	2	18
Project Completion Review	1	49
Postevaluation	1	18



I. HIGHLIGHTS

1. **Objectives and Scope.** The Project was formulated to develop a viable smallholder agriculture. The main objectives were to (i) provide beneficiaries with an economic base that would encourage their continued participation in agriculture, (ii) improve on-farm employment opportunities for the next generation of the rural population, and (iii) maintain the vitality of this important sector in the Malaysian economy. The Project had five components: (i) smallholder estate development, which included the development of 6,000 hectares (ha) of smallholder rubber and 4,000 ha of oil palm; (ii) cocoa and fruit crop development, which involved the planting of 2,500 ha of cocoa and fruit trees; (iii) establishment of nine experimental pilot villages development schemes; (iv) strengthening of agricultural support and land-use planning services; and (v) consultancy, training, and Project management.
2. **Cost, Financing, and Schedule.** The total cost of the Project was estimated at \$50.3 million, of which the Bank's loan was \$22.7 million. The actual cost of the Project was \$28.9 million, or about 57 percent of the estimated cost. Disbursements under the Bank's loan amounted to \$12.5 million or about 55 percent of the approved amount. The cost underrun was substantial because of (i) land development costs and price contingencies estimated at appraisal were high due to the energy crisis at that time (1982); (ii) contractors and suppliers bids for civil works were significantly lower than the engineer's estimates; and (iii) the cost of pilot development schemes and the Project training had been overestimated at appraisal. The Project was completed in December 1991, after a delay of about 12 months from the original schedule.
3. **Implementation.** The Project has achieved all physical targets consistent with its scope. The areas planted to tree crops had been exceeded by about 15 percent for the smallholder estate component and by about 31 percent for the cocoa and fruit development component. Although local budget constraints (the economy was then in recession) led to some delays in the early stages of Project implementation in 1983 and 1984, the Project succeeded in establishing 50 schemes of smallholder estates comprising 37 schemes for oil palm (8,894 ha) and 13 schemes for rubber (2,549 ha), totalling 11,443 ha as against the appraisal target of 10,000 ha. The smallholder schemes are managed by professional plantation managers and field assistants with laborers provided by the private contractors. Federal Land Consolidation and Rehabilitation Authority (FELCRA) provides technical and management inputs in the overall operation of the schemes. The cocoa and fruit crop development component established 3,284 ha of small farms as against the appraisal target of 2,500 ha. Initial yields from the plantations are in line with the appraisal projections. Nine pilot development schemes were established as envisaged. Under the schemes, farmers participated in new agricultural enterprises designed to assist them in adopting new technology and commercial farming. This encouraged farmers in the region to diversify their cultural practices. They now demonstrate a greater willingness to venture into the cultivation of crops that are new to them, and they are also more receptive to new farming technology. All planned civil works were completed to a satisfactory standard. Subsequent maintenance of civil works and Project equipment has been of high standard. The main implementation deficiency relates to the delay in recruiting participants for the smallholder estates development component. Although the FELCRA has shortlisted all potential beneficiaries, only about 10 percent of the anticipated 4,200 beneficiaries for the FELCRA smallholder estates component were formally recruited at the time of the Postevaluation Mission (PEM).
4. **Institutional Aspects.** The Project provided the staff of the Ministry of Agriculture (MOA) with experience in implementing projects concentrating on commercial agro-based industry, consolidating smallholdings, and assisting farmers in producing high-value produce

meeting the requirements of the markets. The pilot development schemes provided opportunities for the Department of Agriculture (DOA) extension and technical staff to work closely with the farmers on new commercial ventures and adoption of new technologies. Community development activities also provided opportunities for DOA staff to cooperate with other non-DOA agencies, particularly those concerned with youth and welfare, and to appreciate the potential holistic nature of the pilot development schemes. The establishment of farmer groups under the Project was significant and could form the basis for corporate or estate-style farming in the future. Such a development would allow a more efficient allocation of labor and improve the efficiencies of postharvest processing and marketing of smallholder produce.

5. **Environmental Impact.** There were no significant adverse effects on the environment. Although minor soil erosion occurred during land clearing, mitigating measures such as the immediate planting of cover crops and terracing of steeper slopes minimized runoff and soil erosion. The established tree crop plantations with perennial crop covers have had positive impacts on the environment.

6. **Cost/Benefit Assessment.** The economic internal rate of return (EIRR) for the Project was recalculated at about 15 percent compared with about 20 percent at appraisal mainly because higher commodity prices were envisaged at Project formulation.

7. **Overall Performance and Sustainability.** In view of the good Project management and physical performance, and the PEM's assessment that the Government could eventually recruit the remaining shortlisted beneficiaries by 1996, the Project is considered to be generally successful. Physical targets were met, planting targets were exceeded, and yield expectations for oil palm, rubber, and cocoa are being achieved. Civil works were executed to a high standard and are well maintained. Most of the established plantations are coming into production and incomes for the existing Project smallholders have increased. Their incomes are expected to increase further as the plantation crops reach maturity. The Project showed flexibility in accommodating changing economic circumstances by increasing the area of the less labor-intensive oil palm, and reducing that of rubber. The farmers are well organized, smallholdings are well maintained, and production operation is sustainable.

8. **Feedback.** Regular updates to the Bank by FELCRA and MOA regarding the status of beneficiaries selection and recruitment for the smallholder estates development component would allow the Bank to monitor the progress of this important aspect of the Project. The Project experience illustrates the need to ensure detailed Project preparatory work so as to minimize delay. This is particularly relevant to such aspects as participant selection and land acquisition, which can involve other non-Project agencies. In view of the labor constraint in the rural sector and the changing structure of the Malaysian economy, future investments in agricultural development projects need to be carefully assessed taking into account the labor shortage situation.

II. BACKGROUND

A. Rationale

9. The goals of the Project were to develop economical smallholdings, complemented by capital and management resources, and to encourage smallholder beneficiaries to adopt new technology and improved agricultural practices. This would increase overall agricultural production and raise the income levels and living conditions of poor smallholders who would be attracted to remain on their holdings rather than migrate to the city. This rationale was consistent with the national strategy for rural development and poverty reduction of the Fourth Malaysia Plan (1981-1985).

B. Formulation

10. The Project was preceded by a Government-funded feasibility study prepared by a local consulting firm in May 1981. A Fact-finding Mission from the Bank visited Malaysia in July 1981. Considering the findings of the Bank's Mission, the Project concept on developing smallholdings was slightly modified to emphasize rubber rehabilitation rather than new plantings. The Project was subsequently appraised in August 1982.

C. Objectives and Scope

11. The Project was formulated to develop a viable smallholder agriculture. The main objectives of the Project were to (i) provide smallholders with an economic base that would encourage their continued participation in agriculture, (ii) improve on-farm employment opportunities for the next generation of the rural population, and (iii) maintain the vitality of this important sector in the Malaysian economy.

12. The Project included five components: (i) smallholder estate development, comprising the development of 6,000 ha of rubber and 4,000 ha of oil palm in accordance with the models already successfully developed by FELCRA; (ii) planting of 2,500 ha of cocoa and fruit crops; (iii) establishment of nine experimental pilot development schemes; (iv) strengthening of agricultural support and land-use planning services; and (v) consultancy, training, and Project management.

D. Financing Arrangements

13. The total cost of the Project as estimated at appraisal was \$50.3 million comprising \$22.7 million in foreign exchange cost and \$27.6 million in local currency cost equivalent. A Bank loan of \$22.7 million from the ordinary capital resources was approved on 23 November 1982 to finance the entire foreign exchange cost of the Project. The balance, equivalent to 55 percent of the total cost, was to be financed by the Borrower (\$27.6 million). The Borrower was Malaysia and the Executing Agencies (EAs) were (i) FELCRA, and (ii) MOA supported by DOA, Federal Agricultural Marketing Authority (FAMA), Farmers Organization Authority (FOA), Malaysian Agricultural Research and Development Institute (MARDI), Department of Irrigation and Drainage, Department of Fishery, and the Department of Veterinary.

E. Completion

14. The Project was completed in December 1991 and the Bank loan was closed on 7 February 1992 to accommodate late submission of withdrawal applications for civil works and equipment purchases contracted prior to Project completion. The Project Completion Report¹ (PCR) was prepared by the Bank's then Agriculture Department in December 1992 and circulated to the Board on 8 January 1993. The PCR is a comprehensive document providing detailed Project information on scope, costing, implementation, and operational aspects. However, the PCR lacked in-depth economic and socioeconomic analysis. Major concerns relating to Project beneficiary participation and related cross-cutting issues needed further elaboration.

F. Postevaluation

15. The Project Performance Audit Report (PPAR) focuses on pertinent aspects of the Project and assesses the effectiveness of the Project in terms of achieving its objectives and generating benefits, and the sustainability of the Project's operations. It also deals with important issues such as Project participant selection, labor constraints, the out-migration of rural youth, and the role of supporting agencies.

16. The PPAR is based on a review of the PCR, the Appraisal Report, material in Bank files, and the findings of the PEM that visited Malaysia from 25 July to 12 August 1995. The PEM inspected Project sites at Pahang Barat and held discussions with officials of concerned Government agencies, beneficiaries of the Project, and the private sector involved in marketing smallholder produce. Information was also derived from a socioeconomic survey that was conducted from April to June 1995 under the Bank's technical assistance (TA).² The survey assessed the socioeconomic benefits of the Project beneficiaries in Pahang Barat and evaluated the impact of the Project on the environment in the Project area. Copies of the draft PPAR were provided to the Borrower, MOA, FELCRA, and Bank staff for review and comments. Comments received have been taken into consideration and incorporated in the final Report.

III. IMPLEMENTATION PERFORMANCE

A. Design

17. It was envisaged at appraisal that rubber and oil palm plantations would be developed in accordance with FELCRA's development strategy. This meant that intensively managed economic-sized estates (ranging from 100 ha to 1,000 ha), which were owned and managed by smallholders, would have to be developed on a shared-ownership basis and supervised by FELCRA staff. Participants would be selected from among the poor smallholders living near the schemes and who will work at the schemes to supplement their income. This

¹ PCR: MAL 15025: *Project Completion Report of the Pahang Barat Integrated Agriculture Development Project*, December 1992.

² TA No. 2145-MAL: *Postevaluation of Pahang Barat Integrated Agriculture Development Project (Loan No. 602-MAL)* for \$100,000, approved on 30 August 1994.

aspect of the Project concept and approach was appropriate. However, the labor shortage situation, which was already evident at the time of appraisal, was not fully assessed at Project formulation stage. Smallholders for the FELCRA schemes were to be recruited after the plantation establishment phase. The current rural labor shortage situation resulted in a delay in the recruitment of most smallholders from the surrounding villages. During implementation of the Project, few locals were interested to work in the FELCRA schemes as they could earn higher wages from urban jobs. Local contractors hired mostly immigrant labor to do the work. The current situation concerning the lack of beneficiaries in many established schemes was not anticipated when the Project was conceptualized. The design did not emphasize the importance of early smallholder participation and no specific time-bound schedule for participant selection was provided. The issue of pros and cons of allocating land title or share of ownership to beneficiaries was also not addressed at appraisal. Neither did the design take into account the vital role of the Pahang state government in beneficiaries selection, a process that is often complicated and influenced by political considerations.

18. Lack of a detailed assessment of the rural labor constraint also resulted in the unrealistic cropping recommendation. Because of the rural labor shortage, the Project design that emphasized a higher proportion of the labor-intensive crop (rubber) was changed to emphasize a higher proportion of the less labor-intensive crop (oil palm) during implementation. It was envisaged at appraisal that 4,000 ha would be planted to oil palm and 6,000 to rubber. At Project completion, 50 schemes covering 11,443 ha had been established, comprising 39 schemes (8,894 ha) for oil palm and 11 schemes (2,549 ha) for rubber (see Appendix 1 for the Project physical achievements). The ratio of 40:60 for oil palm and rubber at appraisal was changed to 80:20 during implementation because of the lower labor demand and better financial viability of oil palm vis-a-vis rubber. This design deficiency was corrected during implementation through the flexible approach adopted by the Project management and supported by the Bank's supervision missions.

19. The Project design allowing for flexibility in the implementation of the pilot development schemes was considered appropriate and assisted the Project management in identifying a range of technically feasible development activities and programs for adoption by the Project farmers. The pilot development schemes provided demonstration effects to the farmers in the rural villages, encouraging them to participate in new agricultural enterprises designed to assist them in adopting new technology and commercial farming.

B. Contracting, Construction, and Commissioning

20. The work carried out by the contractors was generally satisfactory. The land development, clearing, and planting programs were completed on time. Infrastructure comprising 16 office buildings, 76 staff houses, 5 storehouses, and 5 shade structures and other buildings under the support services component were completed satisfactorily by the end of 1991. The buildings were of good quality and have subsequently been well maintained.

21. Equipment (vehicles, machinery, and office equipment) specified under the Project was acquired, has been well maintained, and is being used in the current Phase II Second Pahang Barat Integrated Agriculture Development Project (Loan No.1238-MAL for \$28.5 million, approved on 29 June 1993).

C. Organization and Management

22. The Project Director was guided by a Project Steering Committee (PSC) co-chaired by the Secretary General of MOA and the Chairman of State Agriculture and Rural Development Committee of Pahang state government. PSC was installed from the commencement of the Project and provided appropriate guidance to Project Management Unit (PMU) on all aspects of Project implementation. In addition, a Technical Committee (TC) was formed at the state level, consisting of the state directors of all concerned MOA agencies and FELCRA. TC was chaired by the Project Director and was responsible for ensuring that policies and guidelines set by PSC were followed by the concerned line agencies at field level. This arrangement has worked well in the Project. Overall, the Project organization and management arrangements worked smoothly.

23. During Project implementation, the Bank fielded ten review and special project administration missions with a staff input of about 117 person-days. In terms of number of missions, this was considered adequate. The review missions fielded averaged ten days duration and concentrated mainly on financial disbursement and physical progress. The issues of beneficiaries selection and Project benefit monitoring and evaluation (BME) were not adequately addressed.

D. Actual Cost and Financing

24. The actual Project cost was \$28.9 million as against the appraisal estimate of \$50.3 million (base cost was \$36.1 million). About \$12.5 million or 55 percent of the Bank loan was utilized. The Bank approved a total of four partial cancellations amounting to \$10.2 million loan saving. The cost underrun was substantial mainly because (i) land development estimates and price contingencies at appraisal were high because of the energy crisis at that time (1982), (ii) contractors and suppliers bids for civil works were significantly lower than the engineer's estimates, and (iii) the cost of pilot development schemes and Project training had been overestimated. A comparison of the appraisal estimates and actual costs is given in Appendix 2.

25. The actual development cost per hectare for the crop established was lower than the appraisal estimate (35 percent for the smallholder estates and 17 percent for cocoa and fruit). The figures used in the appraisal were based on the clearing of thick secondary forests. In practice, a large proportion of the smallholder estates were located in either replanted areas or abandoned agricultural land where the basic infrastructure was already in existence. Land clearing and drainage costs in such areas were significantly lower than the appraisal estimates.

26. The main item where the actual expenditures exceeded the appraisal estimates was land acquisition (costing the Project about \$1.6 million, or more than ten times the appraisal estimate). The problem of land acquisition was more serious than had been expected at appraisal, and it was partly responsible for the delay in the first two years of Project implementation.

E. Implementation Schedule

27. The Project was completed on 31 December 1991 compared with the scheduled date of 31 December 1990. There was a delay of about one year over the envisaged implementation period of 93 months. The delay was attributed partly to the budgetary constraints resulting from the economic recession during 1983 and 1984, and to the long process of land acquisition from the state government. The economic recession at the commencement of the Project constrained the Borrower's ability to provide adequate funds in a timely manner to implement the Project. However, budget allocations were sufficient from 1985, and the improved Project management performance substantially made up for the initial delays. In view of the achievement in the expanded scope of smallholder land development schemes (see paras. 30 and 32), the one-year delay in completing the Project was considered not serious.

F. Compliance with Loan Covenants

28. In general, the Borrower's compliance with the loan covenants was satisfactory. Partial compliance occurred with a shortfall in the selection and recruitment of village farmers as beneficiaries from the six Project districts for the FELCRA smallholder estate development schemes resulting in its failure to form appropriate farmer participants committees to manage FELCRA smallholder estates (schedule 6, para. 13 of Loan Agreement), and a BME system that was not adequately implemented. Details on the compliance with loan covenants and PEM's comments are provided in Appendix 3.

IV. PROJECT RESULTS

A. Operational Performance

29. Although the selection and recruitment of FELCRA estates beneficiaries (poor village farmers) by the Pahang state government are still ongoing, the overall physical performance of the Project is satisfactory. All physical targets were achieved and, in some cases, exceeded (see also paras. 20, 30, and 32). Details on Project physical achievements are given in Appendix 1.

1. Smallholder Estates Development

30. FELCRA was the EA responsible for the implementation of the smallholder estate development component. Development took place in 50 schemes both as rehabilitation on existing small farms and as new development on the acquired state land. The total area to be planted by the Project was 4,000 ha oil palm and 6,000 ha rubber. The actual area realized was 8,894 ha oil palm and 2,549 ha rubber, totalling 11,443 ha or about 115 percent of the appraisal target. The change in ratio of rubber to oil palm was attributed to (i) the Government policy to give priority to oil palm expansion, (ii) shortage of labor and the lower labor-intensive requirements of oil palm cultivation, (iii) shorter maturity period of oil palm plantations, (iv) greater financial return of palm oil production, and (v) farmer preference for oil palm cultivation. Even though there were some delays in the initial stage of Project implementation in 1983/84 because of local budget constraints and land acquisition problems (see para. 27), the provision of adequate local funding by the Government from 1985 onward enabled PMU and

FELCRA to effectively implement the activities; by the end of 1989, all plantings had been completed. Generally, estate development and the associated road work were well executed and subsequent husbandry/maintenance was satisfactorily carried out. However, damage by elephants and occasional delays in fertilizer deliveries affected growth in some remote areas. At the time of the PEM visit (August 1995), some 7,680 ha of oil palm and 1,207 ha of rubber have come into production, representing about 86 percent of the oil palm and 47 percent of the rubber plantings, respectively. Although FELCRA has not recruited most of the smallholders, the schemes are being managed by professional managers and field assistants (similar to other non-Project FELCRA schemes), with immigrant laborers supplied by local contractors. FELCRA field staff act as plantation managers and are responsible for all technical and management matters of the schemes. It is envisaged that when the majority of the smallholders are recruited by 1996, the immigrant laborers will be replaced by the smallholders and the plantation will not suffer from any fall in production as there is little or no change in production management staff. Initial yields from the rubber and oil palm production areas are in line with the yield estimates envisaged at appraisal. Currently, the schemes with young rubber and oil palm trees are achieving an average yield of about 1.2 metric tons (t) of dried rubber and 18 t of fresh fruit bunches per hectare, respectively. These yields are expected to increase over the next ten years as the trees mature.

31. The Pahang state government is responsible for selecting the FELCRA smallholding estate beneficiaries, but the process was significantly delayed because of (i) the need to identify and select the real poor and interested farmers from the surrounding villages (see also para. 53), and (ii) slow bureaucratic procedure of shortlisting and the formal recruitment process. Farmers with a family income of less than the national poverty level (the national level is currently set at a monthly average of RM405 for a family of five members) are given top priority in the selection process. The state selection committee has so far identified about 4,000 families and the screening process is currently ongoing. The PEM is advised that the participants selection process is expected to be completed by the end of 1995 and recruitment by 1996. The failure to select FELCRA beneficiaries by the time of Project completion is a weakness of Project implementation and remains a major issue for Project follow-up activities. Currently, the smallholder estate development component contributes to the income of only 435 participant families or about 10 percent of the appraised target.

2. Cocoa and Fruit Crop Development

32. The total cocoa and fruit tree area to be planted by the Project was 2,500 ha. Actual plantings were 3,284 ha, or about 131 percent of the appraisal target. The DOA staff and farmers worked closely with MARDI, which introduced the newly tested, high-yielding cocoa clones and advised on improved planting techniques. These technologies were readily accepted by the farmers. The farmers also developed their own nurseries, which markedly increased seedling survival rates and eliminated seedling transportation cost. The Project supported the development of cocoa bean fermentation by the farmers, leading to a significant improvement in the quality of beans. Cocoa trees are currently growing well and achieving an average yield of about 0.8 t dried beans, which is in line with the yield profile envisaged at appraisal. Through the Project's promotion, fruit growing has become popular among Project farmers. DOA provided valuable advice to the farmers in the adoption of improved varieties of fruit trees such as durian, banana, mango, star fruit, jackfruit, and rambutan. The Project provided advanced and improved planting materials (such as bud wood, rootstock, seedlings, and seeds) to the farmers. That was followed by appropriate extension service for improved intercropping management of cocoa and

fruit trees. Most of the fruit trees are into production and further attention is necessary in assisting the farmers to develop an effective marketing system for the smallholders in terms of produce quality control, packaging of perishable fruits, transportation, and developing market outlets.

3. Pilot Development Schemes

33. All nine pilot development schemes envisaged in the appraisal were established. With about 2,038 participating farmers, they covered a wide range of activities including poultry, cattle grazing and feedlot operation, aquaculture, food processing, exotic fruit tree cultivation, and planting of maize and other short-term crops. The implementation of these activities is by farmer groups on a shared part-time basis. Of the 74 pilot projects, the fishpond category showed the least satisfactory performance. Two out of the six failed, and the returns from four were far from encouraging. One failed shortly after the initial stage because the onset of floods wiped out all its fish fry; disease was another cause. The high initial development cost and the choice of fish species that turned out to have low market value contributed to the poor financial return of this subproject. The Project office has since learned from these mistakes and is currently guiding farmers to undertake pilot fish cage culture and to convert idle paddy land into fish estates. Initial results indicated that fish cage culture could be a profitable enterprise when fish species of high market value were to be reared. The concept of establishing a fish estate is essentially the conversion of vast areas of paddy fields (with sizes ranging from 2 to 4 ha or larger) into fish culture ponds at a very low development cost. The rearing of hardy local varieties would lower the maintenance cost considerably and, at the same time, raise the success rate.

34. Technically, the majority of the pilot development activities have sound bases and are satisfactorily implemented. The overall programs have been developed to test a variety of approaches ranging from the traditional "top down" to the more participatory "bottom up" method involving intensive community development. The pilot schemes are managed mostly by farmer groups with the guidance of DOA extension officers. Although a few pilot ventures are found financially non-viable, preliminary results indicate that most ventures are encouraging. The PEM noticed that in all the pilot schemes, the grant element¹ seems to be the major factor attracting the beneficiaries' participation. There is no cost recovery element incorporated in these pilot schemes and hence the farmers are not subject to any risks except their labor input during the initial stages.

35. With less than 10 percent failure (7 out of 74 pilot ventures), the overall performance of the pilot development component is considered encouraging. Its initial success (with good financial returns) has encouraged farmers in the region to diversify their cultural practices. With guidance from the Project and DOA extension workers, the farmers demonstrated greater willingness to venture into the cultivation of crops that were new to them and were also more receptive to new farming technology. However, these pilot schemes need further refinements and testing before they can be replicated in other areas.

¹ In all pilot development schemes, farmers are provided with initial capital and operational costs such as planting materials, rearing or processing equipment, fertilizers, and chemicals. Farmers contribute only land and labor.

4. Support Services

36. The support services component provided buildings, equipment, and transport facilities to DOA, FOA, FAMA, and MARDI to strengthen their capacity to support the Project beneficiaries. The supporting agencies constructed agricultural marketing centers, farmers development centers, and farm mechanization centers. These centers are all well managed and operated. In all cases, the civil works construction is satisfactory and building maintenance is good. However, the farm mechanization center at Raub was closed for lack of demand for its services for paddy cultivation. The equipment was transferred to other areas where there is need for the machinery services, and the building is currently used for women in development activities. MARDI provided the adaptive research facilities and conducted applied research for cocoa and fruit tree development. Ten buildings, seven four-wheel-drive vehicles, and six trucks were provided under the component. These facilities have contributed significantly to the ability of the supporting agencies to assist the farmers with farm production and marketing. The supporting agencies' performance has been generally satisfactory and they achieved reasonable success in assisting the farmers in adopting new technologies, especially in the pilot development schemes and cocoa and fruit tree development. However, in terms of assisting farmers in marketing cocoa and other produce and obtaining a better price, both FOA and FAMA need to strengthen their marketing services and improve their management. In many instances, FAMA and FOA were not able to offer prices higher than those offered by the middleman. FOA activities in input supply and produce marketing are increasingly being eroded by private dealers. Both FAMA and FOA were established in the early 1960s, and there is need for the Government to review and reassess their functions in light of the current changing economic situations in the Malaysian economy.

5. Consultancy and Training

37. Of the 52 person-months of international consulting services provided under the Project, 30 person-months were utilized in rural planning; the remaining services were carried out by domestic experts from the supporting agencies. The international expert in rural planning was recruited in accordance with the Bank's guidelines, and he formulated development plans for the pilot development schemes that proved successful and acceptable to the beneficiaries. The cocoa and fruit crop extension specialist provided by MARDI designed a cocoa and fruit crop extension program that focused on the beneficiaries' participation. A high degree of success was achieved in transferring new technology, especially in developing on-farm cocoa nurseries and adopting new cocoa clones and husbandry methods. The land use planner from DOA carried out a land capability study on 758,000 ha which exceeded the target of 590,000 ha by 28 percent.

38. Six DOA Project staff undertook overseas training courses in the fields of project management, community development, and fish culture. The staff trained abroad have now returned to the Project to serve PMU. In addition, 30 Project staff participated in in-country training in rural development. One hundred and fifty farmers underwent short-term training courses in human development conducted by DOA. About 2,000 beneficiaries received various forms of training such as attending Project field days, lectures on production and marketing, and field demonstrations. The PEM's discussions with the trainees indicated that in general, the training provided by the Project and supporting agencies' extension staff was useful and effective.

6. Benefit Monitoring and Evaluation

39. A BME system was to be set up by the Project, but this was not effectively carried out. Project design allocated the responsibility for BME to DOA for the cocoa and fruit development component and the pilot development scheme component. FELCRA was given the responsibility for BME for the smallholder estate development component. While some incomplete baseline information and data on Project implementation progress were periodically collected by PMU, this was done in an ad hoc manner and no systematic BME was implemented. The Project design did not provide specific input and output indicators or specific guidance to the EA for implementing an effective BME system. Bank supervision also did not give emphasis to setting up an effective BME, thus resulting in poor data base and poor feedback for effective decision making. Although the Project has a poor BME record, it was able to successfully implement all physical activities as envisaged mainly because of the continuous service/input of certain key and competent Project management staff.¹ Implementation of the Project would be seriously affected if the input/services of such staff are terminated or if they are transferred. Hence establishment of an effective and proper BME system is essential to Project implementation, monitoring, and evaluation during both the construction and post-Project phases.

B. Institutional Development

40. In implementing the Project, MOA staff gained extensive experience in promoting Government policies for agricultural development in the areas of commercialization, small-farms consolidation, and experimenting with new agro-based ventures in accordance with the needs and requirements of the farmers. The pilot development schemes provided opportunities for a range of DOA supporting agencies to work closely together and develop a closer working relationship. Resolving Project community development issues provided much opportunities for DOA staff to cooperate with other state government agencies, particularly those concerned with youth and welfare and to appreciate the potential holistic nature of the pilot development schemes.

41. Project farmers were trained in new skills including cocoa nursery establishment and maintenance, cocoa bean fermentation and drying, improved crop production techniques, livestock husbandry, aquaculture, and others. In addition, beneficiaries were exposed to motivation courses and to the planning and programming associated with the pilot development schemes. The Project also contributed to the formation of many farmer groups that were trained to manage and operate their own enterprises under the pilot development schemes. The formation of groups was significant and could lead to the development of joint or corporate type farming, which may be necessary in the future to achieve economies of scale (such as toward mechanization and commercialization) and to overcome the problem of labor scarcity in the rural sector.

¹ The Project Director is an experienced project implementation and management officer, and she was involved in the Project from the feasibility study to completion stage. Her continuity in Project implementation was the key to the successful implementation of the Project despite the poor BME record.

C. Economic and Financial Reevaluation

42. Economic reevaluation for the Project was carried out by the PEM, using the same general methodology as that used at appraisal (see Appendix 4). The EIRR was reestimated at about 15 percent, compared with the appraisal estimate of about 20 percent. The PCR did not include the EIRR estimate for the whole Project. The reestimated EIRR was based on major direct benefits that accrued to the Project, viz., palm oil, palm kernel oil, rubber, cocoa, and fruit, but because of lack of data, it did not include the benefits from the pilot development schemes. This tended to underestimate the EIRR slightly as pilot development is a small Project component (about 2.5 percent of the Project cost). The EIRRs for the smallholder estate development component and the cocoa and fruit tree component were reestimated at 15.6 percent and 25.7 percent, respectively, compared with the appraisal estimates of 18 percent and 41 percent, respectively.¹ The overall EIRR decreased mainly because the actual and currently projected commodity prices (cocoa, rubber, and palm oil) were significantly lower than those projected at the time of appraisal. Sensitivity analysis conducted for the Project as a whole showed sensitivity to changes in commodity prices (see Table 12 of Appendix 4). Details of the EIRR reevaluation are given in Appendix 4.

43. The Project's financial internal rate of return (FIRR) was not calculated either at appraisal or at PCR. From available data and excluding the benefits from the pilot development schemes (no production data were available), the PEM estimated that the FIRR for the Project is about 12 percent. The calculated FIRRs for the subcomponents (oil palm, rubber, cocoa, and fruit plantations) ranged from over 56 percent for fruit to 12 percent for rubber (see Appendix 4). The high FIRR for fruit plantations is attributed to the improved fruit tree varieties that currently fetch high market prices (such as durian and mango). With the generally expanding economy, the market for local exotic fruits is expected to remain buoyant.

D. Socioeconomic and Sociocultural Results

44. The Project has had a positive impact on farm incomes. The future impact on smallholders' incomes, particularly on participants of the oil palm, rubber, and cocoa/fruit tree farms, would be much greater as the trees become mature and yields increase. As shown by a socioeconomic survey conducted under the Bank's small-scale TA (see para. 16), the average monthly household incomes for farmers living in the Project areas rose from RM292 in 1984 to RM400 in 1994. This income level is expected to increase as more cocoa and fruit trees come into production. Households in the FELCRA smallholder estates (for those who had joined the scheme) had monthly household incomes of RM319 in 1984 (prior to joining the Project) and RM496 in 1994 (with oil palm or rubber coming into production). These incomes are anticipated to rise significantly higher as oil palm and rubber trees reach maturity or full production stage. Cocoa and fruit tree farmers had estimated monthly household incomes of RM362 in 1984 and RM490 in 1994. Cocoa trees have just started to produce, and thus incomes for this group are anticipated to increase significantly in the future. Beneficiaries in the pilot development schemes had average monthly household incomes rising from RM366 in 1984 to RM453 in 1994. Opportunities for increased income from aquaculture and fruit production appear particularly promising. The full Project income effect has not been captured at the time of the PEM because

¹ The whole Project EIRR (15 percent) was lower than the FELCRA estate and cocoa/fruit component EIRR because the benefits from the pilot development schemes were not included in the whole Project EIRR analysis.

of the perennial nature of the crops planted. However, the standard of living, as reflected in the ownership of consumer durables, has risen sharply, presumably as a consequence of both on-farm Project activities and off-farm sources (such as remittances from farmers' children working in the cities).

45. The average age of the farmers (beneficiary head of household) is about 55 years with some 36 percent over 60 years. The proportion of those with no schooling is falling, 22 percent in 1995 compared with 25 percent in 1987 and 28 percent in 1984. The average number of workers per family is 1.8. Some farmers said they were too old for active farm work such as land preparation. Out-migration of young people to Kuala Lumpur since the 1970s has been a major constraint to rural labor availability. In the Project area, out-migration has slowed since 1991, particularly among families of cocoa smallholders and beneficiaries of the pilot development schemes partly because of the good incomes from the Project schemes and partly because of the establishment of an industrial park in Pahang Barat which provides employment to local people. A summary of the salient findings of the socioeconomic survey conducted under the Bank's TA (No. 2145-MAL) is given in Appendix 5.

E. Women in Development

46. Women in development was not a major issue at the time of appraisal, and was not addressed in the Project design. Paddy, which needed a heavy labor input from women, was an important crop in the early 1980s, but has almost been abandoned now. The Project provided ample opportunities for women to be involved in various activities such as in the pilot development schemes and plantations. In the pilot development schemes, the Project initiated food processing cottage enterprises (such as making chili sauce and dry food snacks to supply the local supermarkets and sundry shops) for women. The planting of annual crops such as maize in idle paddy land has attracted many women to the cultivation and marketing of the produce. Women are usually responsible for the harvesting of farm produce, upkeep of the farm in terms of maintenance, crop protection, and marketing.

F. Environmental Impacts and Control

47. The impact of the Project on the environment has been minimal. No adverse environmental impacts were detected in the establishment of smallholder estates and other Project facilities. During the initial clearing stages of smallholder estate development, FELCRA took various measures to minimize soil loss, such as careful site selection, quick planting of cover crops immediately after land clearing, terracing of steeper slopes, and proper construction of roads and drains. Within two months of land clearing, there was complete establishment of ground cover to minimize topsoil erosion. The cocoa and fruit trees as well as the pilot development schemes were established in small scattered blocks and involved mostly rehabilitation of existing small farms and idle lands that were earlier planted with other crops. The use of agrochemicals on a per-hectare basis was very minimal to cause any pollution. It was also noted that only biodegradable pesticides were used.

G. Gestation and Sustainability

48. The smallholder oil palm and rubber estates were well established and the majority of the planted areas are gradually coming into full production. A small proportion of the planted areas located near the jungle fringes had to be replanted because of extensive damage caused by wild elephants. This has resulted in some small uneven patches of trees coming into

production. As noted in para. 30, the initial crop yields from the harvested area are generally in line with the appraisal estimates. Operations continue to be supervised by FELCRA officers, and this component is considered sustainable. The cocoa and fruit tree component is considered generally sustainable because of farmers' preference and good market outlets. The small size of many cocoa holdings, coupled with the fact that cocoa is interplanted with fruit trees (such as durian, banana, etc.) makes the holdings likely to be sustainable even during periods of low cocoa prices.

49. As discussed in para. 35, the various approaches tried under the pilot development schemes require further fine-tuning before they can be considered replicable and sustainable. Funding for this fine-tuning is being pursued under the Bank-supported Second Pahang Barat Integrated Agriculture Development Project (see para. 21).

V. KEY ISSUES FOR THE FUTURE

A. Out-migration of Rural Youth

50. Agricultural labor as a percentage of the country's total labor force has declined from 38 percent in 1982 to 20 percent in 1995. The Government's general development policy is aimed at providing education and training to create a literate labor force. The Malaysian labor force is expected to be progressively more educated, better trained, and more mature. Higher wages in the industry sector are expected to cause more rural youths to seek employment in the urban sector.

51. The high incidence of out-migration in the Project area results in serious rural labor shortage and is a major concern. Almost two thirds of the farmers interviewed in the socioeconomic survey (see paras. 44 and 45) thought that their children would not be attracted to farming in the future. The common reasons cited for this were the higher and stable income in nonagriculture sectors and a general lack of interest in agriculture. There is an urgent need to rapidly commercialize and modernize the agriculture sector to reduce rural-urban migration. While the smallholder estates development and cocoa/fruit tree components are expected to generate reasonably high incomes to enable the present generation of farmers (average age of 55 years) to remain on the farms, a major task is to provide attractive on-farm employment opportunities for the next generation of the rural population to remain in the rural sector. To this end, the pilot development schemes should be actively pursued to develop innovative farming models that are less labor intensive and involve corporate-type farming to produce high-value commodities with good and sustainable market potentials. Rural-urban out-migration and lack of interest among the younger generation to continue farming are two major issues that need to be seriously addressed in similar future projects in Malaysia.

B. Beneficiaries Recruitment

52. In the course of Project implementation, the smallholder sector underwent a drastic change and experienced severe labor shortage. This, coupled with out-migration of rural youth, made it very difficult for the EA to recruit qualified beneficiaries in a timely manner for the FELCRA smallholder estate schemes.

53. The FELCRA smallholder estate development component aimed to provide poor farmers with an economic base and to enable them to earn attractive incomes so that they would

be encouraged to continue participating in agriculture. While the plantations are gradually coming into production, the recruitment of the majority of poor smallholders has not yet been fully achieved because of the smaller and diminishing pool of available and qualified farmers. Although the PEM noted that, eventually, FELCRA and the Pahang state government should be able to complete the recruitment process, possibly by 1996, the present FELCRA policy on smallholder estate development needs to be reviewed, taking into account the changing resource endowments of the country and with a view to developing a more practicable model of smallholder estate crop production for the future.

C. Role of Supporting Agencies

54. As pointed out in para. 36, FOA and FAMA were not effective in assisting small farmers to obtain a competitive price for their produce. The two organizations were established in the 1960s to assist the small farmers in developing efficient farmers cooperatives and in marketing their produce. The structural change in the Malaysian economy (resulting from rapid industrialization) from the early 1980s and ongoing appears to have rendered their functions outdated. In the light of the modified Government policy on small farmers' development to commercialize farming as stipulated in the current Sixth Malaysia Plan, there is need to fully review and assess the objectives and functions of these supporting agencies.

VI. CONCLUSIONS

A. Overall Assessment

55. The Project has demonstrated that MOA, through the office of PMU, has done a commendable job in implementing the Project. Flexibility in implementing the Project components in accordance with changing resources of the rural sector (such as switching to a larger area with the less labor-intensive oil palm crop and initiating food processing cottage industries for rural women) was adopted. Project physical targets were met, and crop planting targets exceeded. Yield expectations for rubber, oil palm, and cocoa are being achieved. Civil works were properly executed and are currently well kept. Equipment and vehicles are well maintained to support the follow-up activities. The less satisfactory aspect of the Project was the much delayed selection and recruitment of smallholder estate beneficiaries and the weak data base in PMU. The Project, as a whole, has created significant employment opportunities for poor smallholders in the Pahang Barat Project area, and transformed the once abandoned and neglected farmlands into viable and productive tree crop plantations. Taking into account the PEM's assessment that the Pahang state government will be able to recruit the majority of FELCRA smallholders by 1996, the Project is on the way to satisfactorily achieve its objectives. Overall, the Project is rated generally successful.

B. Lessons Learned

56. The resource environment of the rural sector under which a project is to be implemented and the rural development policy of the Government should be adequately assessed during the design and formulation stage. In the case of the Project, the rural sector is rapidly undergoing changing resource endowments where out-migration of rural youth and rural labor shortages were imminent. The Project, as formulated, continued to emphasize the more labor-intensive rubber than the less labor-intensive oil palm. The policy of the EA on beneficiary selection and the allocation of land (established smallholdings) to the participants were also not

adequately addressed. It is therefore important that Project design embrace implied policy issues (e.g. resource environment and beneficiary/smallholding allocation policies). In future similar projects, the existence of rural labor shortage at the time of project formulation and its implications should be fully assessed, particularly for a rapidly developing economy where the rate of rural-urban migration is high.

57. In the light of weak BME expertise in the Project EA (para. 39), the Project design should emphasize the provision of more detailed information in designing an effective BME system to enable the EA to execute the program. If the EA is weak on BME, technical assistance on BME methodology should be provided. Although it is now standard procedure during the design and appraisal stage for the Bank to formulate a project framework, a detailed BME program should also be formulated in cases where the EAs are weak in BME.

58. Another lesson learned from the implementation of this Project is that the Project management adopted a flexible approach in implementing the FELCRA smallholder development schemes by establishing a higher proportion of less labor-intensive oil palm to lessen the impact of the labor constraint (see para. 30). A similar flexible approach was also adopted in the pilot development schemes as highlighted in paras. 33 and 34. Flexibility (the process approach) should be a key element in Project implementation. The benefits of adopting a flexible approach during implementation may be cited as a lesson learned.

C. Follow-up Actions

1. For the Borrower

59. As noted in para. 31, there is an urgent need for FELCRA smallholder beneficiaries to be selected. The Pahang state government will select participants from among small farmers with incomes below the poverty line. FELCRA and MOA need to inform the Bank of the status of beneficiary selection and recruitment. The selection procedures should be transparent and the program expeditiously implemented.

60. There is a need for FELCRA to establish baseline information for the new smallholder estate beneficiaries selected by the Project. The socioeconomic data to be collected from the newly recruited beneficiaries should be consolidated and analyzed. A subsequent socioeconomic survey to be conducted five years after the recruitment would provide information for an impact study of this major component of the Project.

61. MOA should keep the Bank informed on the progress of the refinement of the pilot development schemes. This is important as the success of this component in developing new innovative models is the key to convincing the next generation of the rural population to remain in the rural sector and maintain the vitality of this important sector in Malaysia.

2. For the Bank

62. The Bank should continue to monitor Project progress with respect to the selection and recruitment of FELCRA smallholder beneficiaries, and the results of the pilot development schemes.

APPENDIXES

Number	Title	Page	Cited On (page,para.)
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2	Project Cost Summary	19	6,24
3	Status of Compliance with Major Loan Covenants	20	7,28
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PROJECT PHYSICAL ACHIEVEMENTS

Physical Target	Appraisal	Actual Achievement	Difference	% of Appraisal Target
Rubber Area	6,000 ha	2,549 ha	(3,451)	42
Oil Palm Area	4,000 ha	8,894 ha	4,894	222
Cocoa Area ^a	2,000 ha	3,284 ha	1,284	164
Fruit Trees Area ^b	500 ha	400 ha	(100)	80
Total Plantings	12,500 ha	15,127 ha	2,627	121
Establishment of Pilot Projects	9 schemes	9 schemes	0	100
Civil Works				
Access Roads	600 km	1,164 km	564	194
Buildings	239 units	239 units	0	100
Smallholder Estate Families Settled	4,200	435	(3,765)	10
Cocoa and Fruit Beneficiaries	3,000	about 3,000		
Pilot Scheme Beneficiaries	900	2,038	1,138	226
Land Use Study	590,000 ha	758,000 ha	168,000	128

^a Includes 580 ha of cocoa planted within the pilot projects.

^b Some fruit trees interplanted with cocoa.

PROJECT COST SUMMARY
(\$'000)

Component	Per Appraisal			Actual		
	FC ^a	LC ^b	Total	FC	LC	Total
A. Smallholder Estate Development						
1. Land Development	9,762	13,219	22,981	7,033	11,404	18,437
2. Civil Works	1,191	2,770	3,961	1,174	340	1,514
3. Equipment and Vehicles	813	91	904	447	235	682
Subtotal	11,766	16,080	27,846	8,654	11,979	20,633
B. Cocoa and Fruit Crop Development						
1. Crop Planting	1,521	1,229	2,750	1,929	959	2,888
2. Nursery Development	28	21	49	0	0	0
3. Civil Works	330	769	1,099	455	560	1,015
4. Equipment and Vehicles	281	31	312	332	78	410
Subtotal	2,160	2,050	4,210	2,716	1,597	4,313
C. Pilot Development Schemes						
1. Civil Works	245	336	581	144	155	299
2. Equipment and Vehicles	51	7	58	58	17	75
3. Mini Project Inputs/Facilities	435	435	870	142	182	324
Subtotal	731	778	1,509	344	354	698
D. Supporting Services						
1. Land Acquisition		132	132		1,587	1,587
2. Civil Works	228	530	758	358	537	895
3. Equipment and Vehicles	512	115	627	323	89	412
Subtotal	740	777	1,517	681	2,213	2,894
E. Consultants, Training, and Project Management						
1. Equipment and Vehicles	18	4	22	27	23	50
2. Consulting Services	418	69	487	53	194	247
3. Training	448	52	500	16	30	46
Subtotal	884	125	1,009	96	247	343
Total Base Cost	16,281	19,810	36,091	12,491	16,390	28,881
Physical Contingencies	1,375	1,803	3,178	—	—	—
Price Escalation	5,044	5,987	11,031	—	—	—
Total Costs	22,700	27,600	50,300	12,491	16,390	28,881

^a Foreign currency

^b Local currency

STATUS OF COMPLIANCE WITH MAJOR LOAN COVENANTS

Covenant/Reference in Loan Agreement	PEM's Comments
<p>The Borrower shall make available or cause to be made available, to each of the Project Executing Agencies, promptly as needed, the funds, facilities, services, lands and other resources which are required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.</p> <p><i>(Loan Agreement, Article IV, Sec. 4.02).</i></p>	<p>Complied with but with initial delay during the years 1983 and 1984. This had substantially affected physical progress during the first two years of Project implementation.</p>
<p>The Borrower shall cause the Project to be carried out in accordance with plans, design standards, specifications, work schedules, and construction methods acceptable to the Borrower and the Bank. The Borrower shall furnish or cause to be furnished to the Bank, promptly after their preparation, such plans, design standards, specifications, and work schedules, and any material modifications subsequently made therein, in such detail as the Bank shall reasonably request.</p> <p><i>(Loan Agreement, Article IV, Sec. 4.03(b))</i></p>	<p>Complied with</p>
<p>The Borrower shall ensure that the activities of the Project Executing Agencies and its other departments and agencies with respect to the carrying out of the Project and operation and maintenance of the Project facilities are conducted and coordinated in accordance with sound administrative policies and procedures.</p> <p><i>(Loan Agreement, Article IV, Sec. 4.04)</i></p>	<p>Complied with</p>
<p>The Borrower shall make, or cause to be made, arrangements satisfactory to the Bank for insurance of the Project facilities included under Parts B, C, D, and E(iii) of the Project to such extent, such risks, and in such amounts as shall be consistent with sound practice.</p> <p><i>(Loan Agreement, Article IV, Sec. 4.05(a))</i></p>	<p>Complied with</p>
<p>The Borrower shall furnish the Bank quarterly reports on the carrying out of the Project and on the operation and management of the Project facilities. Such report shall indicate progress made and problems encountered during the quarter review, steps taken or proposed to be taken to remedy these problems and proposed program of activities and expected progress during the following quarter.</p> <p><i>(Loan Agreement, Article IV, Sec. 4.07(b))</i></p>	<p>Complied with</p>

STATUS OF COMPLIANCE WITH MAJOR LOAN COVENANTS

Covenant/Reference in Loan Agreement	PEM's Comments
<p>In any event not later than six months after the closing date for withdrawals from the Loan Account, the Borrower shall prepare and furnish to the Bank a report on the execution and initial operation of the Project, their costs and the benefits derived from them, the performance of the Borrower of its obligations under the Loan Agreement, and the accomplishment of the purposes of the Loan. (<i>Loan Agreement, Article IV, Sec. 4.07(c)</i>)</p>	Complied with
<p>The Borrower shall enable the Bank's representatives to inspect the Project, the goods financed out of the proceeds of the Loan and any records and documents relevant to the Project. (<i>Loan Agreement, Article IV, Sec. 4.08</i>)</p>	Complied with
<p>The Borrower shall establish a Project Steering Committee (PSC) assuring coordination of all planning and phasing of Project implementation activities by Project Executing Agencies. (<i>Loan Agreement, Schedule 6, para. 1</i>)</p>	Complied with
<p>The Director-General of Federal Land Consolidation and Rehabilitation Authority (FELCRA) shall have overall responsibility for the implementation of Part A of the Project. (<i>Loan Agreement, Schedule 6, para. 2</i>)</p>	Complied with
<p>The Borrower shall establish a Technical Committee (TC) to ensure that the policies and guidelines set by PSC are followed at field level and to provide information to the Project Management Unit (PMU) concerning problems in Project implementation. (<i>Loan Agreement, Schedule 6, para. 3</i>)</p>	Complied with
<p>The Borrower shall establish a PMU at Temerloh headed by a full time Project Director to ensure the dispatch to the Bank of all requests and documentation for loan disbursements for Parts B-E and progress reports. (<i>Loan Agreement, Schedule 6, para. 4</i>)</p>	Complied with

STATUS OF COMPLIANCE WITH MAJOR LOAN COVENANTS

Covenant/Reference in Loan Agreement	PEM's Comments
<p>The Borrower shall ensure that all land, rights in land, water rights, and other rights or privileges required for the Project are acquired or made available on a timely basis in order to avoid delays in Project implementation. (<i>Loan Agreement, Schedule 6, para. 6</i>)</p>	<p>Complied with. Initial delays in land acquisition from state government.</p>
<p>The Borrower shall ensure that lands to be developed as smallholder estates under Part A of the Project shall be selected by FELCRA. The Borrower shall ensure that the State of Pahang shall take all necessary action to promptly make available to FELCRA the blocks of land to be developed. (<i>Loan Agreement, Schedule 6, para. 7</i>)</p>	<p>Complied with</p>
<p>The Borrower shall ensure that only previously underutilized lands are selected for development under Part B of the Project and that all such areas selected shall vary in size from a minimum of 0.5 ha to a maximum of 2.0 ha. DOA staff shall select the smallholders to participate and such smallholders shall own not less than 1.5 ha nor more than 2.5 ha of land. (<i>Loan Agreement, Schedule 6, para. 8</i>)</p>	<p>Complied with</p>
<p>The Borrower shall ensure that land to be developed under Part C of the Project shall be selected by a Rural Planning and Pilot Area Implementation Section to be created in the PMU established in Temerloh. (<i>Loan Agreement, Schedule 6, para. 9a</i>)</p>	<p>Complied with</p>
<p>Selection of the six sites for development under Part C(i) of the Project shall be made so as to situate each of such six proposed Pilot area scheme sites near a village of about 100 families. (<i>Loan Agreement, Schedule 6, para. 9b</i>)</p>	<p>Complied with</p>
<p>The Borrower shall provide to the Bank its proposed training programs in fruit crop extension methods, rural planning and land use planning and criteria for the selection of candidates for the training, proposed location of training courses, and funding arrangements for participants. (<i>Loan Agreement, Schedule 6, para. 10</i>)</p>	<p>Complied with</p>

STATUS OF COMPLIANCE WITH MAJOR LOAN COVENANTS

Covenant/Reference in Loan Agreement	PEM's Comments
<p>The Borrower shall ensure that adequate incremental staff are available for the Project, and in this connection agrees to redeploy existing staff and/or hire new staff, as shall be required for efficient Project implementation. (<i>Loan Agreement, Schedule 6, para. 11</i>)</p>	<p>Complied with</p>
<p>The Borrower shall provide in a timely manner all necessary funds, facilities, and other resources required for the purpose of the efficient operation and maintenance of the Project facilities. The actual operation and maintenance of each specific Project facility, both during Project implementation and thereafter, shall rest with the Project Executing Agency responsible under the Project for provision of that specific Project facility. (<i>Loan Agreement, Schedule 6, para. 12</i>)</p>	<p>Complied with but with delay.</p>
<p>FELCRA shall have the specific responsibility in conjunction with the appropriate farmer participants committee, of managing the smallholder estates to be developed under Part A of the Project. (<i>Loan Agreement, Schedule 6, para. 13</i>)</p>	<p>Partly complied with. Majority of participants have not yet been selected.</p>
<p>The Borrower shall ensure that each Project Executing Agency shall prepare and submit promptly to the PMU for its consolidation regular quarterly reports containing information on the progress made and problems encountered during the quarter under review, expected activities during the following quarter, and the financial status of the different parts of the Project. (<i>Loan Agreement, Schedule 6, para. 14</i>)</p>	<p>Complied with but with delay.</p>
<p>Benefit monitoring and evaluation (BME) for Part A of the Project shall be carried out by the Planning and Development Division of FELCRA, and shall have three phases: (i) a benchmark survey of sample schemes to be developed during the first year of Project implementation; (ii) a monitoring survey and evaluation of such sample schemes in the seventh year of Project implementation; and (iii) a full development survey of such sample schemes 12 years after Project commencement. (<i>Loan Agreement, Schedule 6, para. 16</i>)</p>	<p>Partly complied with. Weak data base information and no systematic BME implemented. Benchmark survey of only three schemes was carried out by FELCRA.</p>

STATUS OF COMPLIANCE WITH MAJOR LOAN COVENANTS

Covenant/Reference in Loan Agreement	PEM's Comments
<p>BME for Parts B and C of the Project shall be carried out by the Planning and Development Division of MOA, and shall have three phases: (i) a benchmark survey of selected areas, to be undertaken within six months after the date of loan effectiveness; (ii) a monitoring survey and evaluation of such selected areas by the end of April third year of Project implementation; and (iii) a full development survey at the completion of implementation in the seventh year of the Project.</p> <p><i>(Loan Agreement, Schedule 6, para. 17)</i></p>	<p>Partly complied with. Weak data base information. No systematic BME implemented.</p>
<p>The Borrower shall ensure that the proposed BME work plans of FELCRA and MOA shall be prepared in accordance with Bank's Guidelines on Logical Framework Planning and Project Benefit Monitoring and Evaluation and that necessary funds, facilities, and resources for carrying out all such BME activities shall be made available on a timely basis.</p> <p><i>(Loan Agreement, Schedule 6, para. 18)</i></p>	<p>Partly complied with. Very minimal BME activities carried out. Data or information collected was not systematically compiled because of lack of BME system in FELCRA and MOA.</p>

FINANCIAL AND ECONOMIC REEVALUATION

A. Methodology and Assumptions

1. The methodology used in the financial and economic reevaluation follows the Bank's *General Guidelines for the Economic Analysis of Projects*. The financial internal rate of return (FIRR) and the economic internal rate of return (EIRR) are reestimated for the Project as a whole. The EIRRs are also reestimated for the smallholder estate development component and the cocoa and fruit development component. Major assumptions underlying the reestimation are given below.

- (i) The **economic life** of the Project is 25 years. This time frame has been selected to cover a crop cycle for oil palm and rubber, which are the main perennial crops grown under the Project.
- (ii) The **foreign and local costs** are expressed in constant 1995 prices, using a dollar deflator for costs expressed in foreign exchange and a domestic deflator for local costs. Foreign costs were converted to 1995 prices using the World Bank Manufacturing Unit Value Index (MUV) as of May 1995 for recent past and future values. Local costs were converted to 1995 prices using the local consumer price index as given in Table 1.
- (iii) The **economic prices** are derived, based on the May 1995 World Bank Commodity Price Projections. The derivations of farm-gate financial and economic prices for palm oil, rubber, and cocoa are given in Tables 2, 3, and 4.
- (iv) The **quantifiable benefits** were derived from a benefit stream quantified on the basis of farm output. Major benefits from the Project as a whole were derived from the current and projected oil palm, rubber, cocoa, and fruit productions. Benefits from the pilot development schemes were not included in the reevaluation because of insufficient information and data on production and prices from PMU and the farmers. Under the "without Project" situation, it is assumed that the Project area for the oil palm plantations would be like the adjacent areas which remain as secondary forests. Similarly, for the area under cocoa and fruit trees development, it is assumed to remain undeveloped as most of the existing crops are old and nonproductive.
- (v) The **investment costs** included in the analysis comprised (a) costs of all civil works and land development, (b) costs of vehicles and equipment, (c) costs of consultancy and training, and (d) cost of supporting services. The economic investment costs included in the economic analysis are exclusive of all transfer payments such as duties and taxes.

- (vi) The **conversion factors** were derived from the Economic Planning Unit, Prime Minister's Department, Kuala Lumpur. These factors were adopted in all agriculture projects in Malaysia. The major factors used in the analysis were:

standard conversion factor	:	0.90
semiskilled and skilled labor	:	1.00
unskilled labor	:	0.90

2. Other supporting information and calculations for the FIRR and EIRR are given in Tables 1 to 4.

B. Results of EIRR and FIRR Reestimation

1. Smallholder Estate Development Component

3. On the basis of the directly quantified costs and benefits derived from the oil palm and rubber development, the EIRRs are reestimated at about 15.6 percent compared with the 11.2 percent at Project Completion Report (PCR) and 18.0 percent at appraisal. Details of reestimation are given in Tables 5, 6, and 7.

2. Cocoa and Fruit Development Component

4. On the basis of the directly quantified costs and benefits derived from the cocoa and fruit planted area, the EIRRs are reestimated at about 26 percent compared with the 14 percent at PCR and 41 percent at appraisal. Details are given in Tables 8, 9, and 10.

3. Whole Project

5. The FIRR and EIRR for the whole Project were reestimated at about 12 percent and 15 percent, respectively (see Tables 11 and 12). No FIRR was estimated at PCR and at appraisal. The EIRR for the whole Project was estimated at about 20 percent at appraisal.

C. Sensitivity Analysis

6. Sensitivity analysis was conducted to examine the effects of prices and yield level on the EIRR. As the crops are all perennial crops, the harvesting techniques are standard for rubber, oil palm, and cocoa. The only factors that are beyond control are commodity prices and weather, which affects yield. The results of the sensitivity analysis are presented in Table 12. The EIRR is sensitive to the price factor with a sensitivity indicator of about 2.13 when the commodity prices fell by 20 percent.

Table 1: Parameters For Analysis

Year	MUV Index Year 1995=100 Foreign Prices	GDP Deflator Year 1995=100 Local Prices
1982	65.31	70.89
1983	63.82	73.52
1984	62.46	77.14
1985	62.96	74.69
1986	74.25	68.32
1987	81.54	71.59
1988	87.48	77.72
1989	86.87	79.86
1990	91.79	82.33
1991	93.83	85.96
1992	97.88	89.41
1993	95.66	92.81
1994	98.50	96.34
1995	100.00	100.00

Source: 1. World Bank Commodity Price Projections (May 1995).
 2. Ministry of Finance, Malaysia, Economic Report, 1982 to 1994.

Table 2: Derivation of Financial and Economic Farm-gate Price for Palm Oil
(constant 1995 prices)

Item	Year									Average 1996/2010
	1989	1990	1991	1992	1993	1994	1995	2000	2005	
	Actual						Projected			
Palm Oil										
(\$/t)										
Malaysian 5% c.i.f Europe ^a	345	357	408	441	436	577	520	392	350	414
Freight, financial charges & ins	53	53	53	53	53	53	53	53	53	53
f.o.b. \$/t	292	304	355	388	383	524	467	339	297	361
f.o.b RM/t	788	821	969	1,013	1,034	1,336	1,144	831	728	883
Port Charges	2	2	2	2	2	2	2	2	2	2
Transport Charges	10	10	10	10	10	10	10	10	10	10
Export Tax ^b	20	20	20	20	20	20	20	20	20	20
Ex – mill Financial Price	756	789	937	981	1,002	1,304	1,112	799	696	851
Ex – mill Economic Price ^c	778	810	958	1,002	1,023	1,325	1,133	820	717	873
Palm Kernels										
(\$/t)										
C.I.F. Europe	230	170	203	211	204	294	376	256	247	287
Freight, financial charges & ins	40	40	40	40	40	40	40	40	40	40
f.o.b. \$/t	190	130	163	171	164	254	336	216	207	247
f.o.b RM/t	513	351	445	446	443	648	823	529	507	605
Port Charges (RM/t)	10	10	10	10	10	10	10	10	10	10
Transport Charges (RM/t)	10	10	10	10	10	10	10	10	10	10
Export Tax ^b (RM/t)	30	30	30	30	30	30	30	30	30	30
Ex – mill Financial Price (RM/t)	463	301	395	396	393	598	773	479	457	555
Ex – mill Economic Price ^c (RM/t)	495	333	427	428	425	630	805	511	489	587
Fresh Fruit Bunches (ffb)										
Financial Prices (RM/t)										
Value of Oil Equivalent (20%)	166	158	187	196	200	261	222	160	139	170
Value of Kernel Equivalent (5.5%)	25	15	20	20	20	30	39	24	23	28
Ex – mill Equivalent	192	173	207	216	220	291	261	184	162	198
Less Processing Costs	30	30	30	30	30	30	30	30	30	30
Less Overheads	10	10	10	10	10	10	10	10	10	10
Less Transport to Mill	15	15	15	15	15	15	15	15	15	15
Farm – gate Price to Smallholder	137	118	152	161	165	236	206	129	107	143
Economic Price ^c (RM/t)										
Value of Oil Equivalent (22%)	156	162	192	200	205	265	227	164	143	175
Value of Kernel Equivalent (5.5%)	25	17	21	21	21	31	40	26	24	29
Ex – mill Equivalent	180	179	213	222	226	297	267	190	168	204
Less Processing Costs	27	27	27	27	27	27	27	27	27	27
Less Overheads	9	9	9	9	9	9	9	9	9	9
Less Transport to Mill	14	14	14	14	14	14	14	14	14	14
Farm – gate Price to Smallholder	131	129	164	172	176	247	217	140	118	154

ffb - fresh fruit bunches.

^a Price includes quality premium for Malaysian palm oil.

^b Tax excluded from economic calculation.

^c Conversion factor of 0.9 used for port, transport, processing and marketing costs.

^d Based on World Bank Commodity Price Projections dated May 1995.

**Table 3: Derivation of Financial and Economic Farm-gate Price for Rubber
(constant 1995 prices)**

Item	Year						Average 1996/2010
	1992	1993	1994	1995	2000	2005	
	Actual			Projected			
\$/t RSS1 ^a	1,046	1,035	1,207	1,446	1,187	1,226	1,275
\$/t Adjusted ^b	1,002	991	1,207	1,446	1,187	1,226	1,275
Freight Port Kelang – New York	120	120	120	120	120	120	120
CIF Port Kelang (\$)	882	871	1,087	1,326	1,067	1,106	1,155
CIF Port Kelang (RM/t)	2,302	2,352	2,772	3,249	2,614	2,710	2,830
Port Handling (RM/t)	30	30	30	30	30	30	30
Transport Charges (RM/t)	30	30	30	30	30	30	30
Ex-factory Price (RM/t)	2,242	2,292	2,712	3,189	2,554	2,650	2,770
Replanting/Research Cess ^c (RM/t)	144	144	144	144	144	144	144
Processing Cost (RM/t)	150	150	150	150	150	150	150
Marketing Charges (RM/t)	50	50	50	50	50	50	50
Economic Farm – gate Prices ^d (RM/t)	2,068	2,118	2,538	3,015	2,380	2,476	2,596
Financial Farm – gate Prices (RM/t)	1,898	1,948	2,368	2,845	2,210	2,306	2,426

^a Rubber (RSS no. 1) in Bales, CIF, spot New York.

^b Adjusted for 30 percent sold as latex and 70 percent as cut lump and scrap at Standard Malaysia Rubber price.

^c Tax excluded from economic calculation.

^d Conversion factor of 0.9 used for port, transport, processing, and marketing costs.

^e Based on World Bank Commodity Price Projections dated May 1995.

Table 4: Derivation of Financial and Economic Farm – gate Price for Cocoa
(constant 1995 prices)

Item	Year										Average 1996/2010
	1988	1989	1990	1991	1992	1993	1994	1995	2000	2005	
	Actual					Projected					
Dried Cocoa Bean (\$/t) ^a	1,809	1,427	1,384	1,275	1,122	1,166	1,410	1,427	1,482	1,601	1,509
Quality Differential (less 5%) (\$/t)	1,719	1,356	1,315	1,211	1,066	1,108	1,340	1,356	1,408	1,521	1,433
Freight Port Kelang to Europe (\$/t)	60	60	60	60	60	60	60	60	60	60	60
CIF Port Kelang (\$/t)	1,659	1,296	1,255	1,151	1,006	1,048	1,280	1,296	1,348	1,461	1,373
CIF Port Kelang (RM/t)	4,495	3,498	3,388	3,143	2,625	2,829	3,263	3,174	3,302	3,579	3,365
Port Handling (RM/t)	30	30	30	30	30	30	30	30	30	30	30
Transport Charges (RM/t)	60	60	60	60	60	60	60	60	60	60	60
Ex – factory Price (RM/t)	4,405	3,408	3,298	3,053	2,535	2,739	3,173	3,084	3,212	3,489	3,275
Processing Costs (RM/t)	100	100	100	100	100	100	100	100	100	100	100
Processing Margin (RM/t)	100	100	100	100	100	100	100	100	100	100	100
Dry Beans (RM/t)											
Financial Farm – gate Price	4,205	3,208	3,098	2,853	2,335	2,539	2,973	2,884	3,012	3,289	3,075
Economic Farm – gate Price ^b	4,234	3,237	3,127	2,882	2,364	2,568	3,002	2,913	3,041	3,318	3,104

^a Based on World Bank Commodity Price Projections dated May 1995.

^b Conversion factor of 0.9 used for port, transport, processing and marketing costs.

[illegible]

Fresh fruit bunches

[illegible]

Table 7: Estimation of EIRR for Smallholder Estate Development Component

Item	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
A. Oil Palm																											
Annual Planted Area (ha)																											
Total Cost (RM million)	2,910	2,875	2,451	497	161																						
Total Yield ('000 t)				11.64	31.87	61.94	97.33	129.46	155.76	169.54	179.15	183.34	186.12	183.70	180.99	178.54	178.04	174.97	172.10	168.73	163.36	160.75	160.25	154.27	148.52	97.06	
Price (RM/t)				134	131	129	164	172	176	247	217	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	
Total Revenue (RM million)				1,56	4,17	7,99	15,96	22,27	27,41	41,88	38,68	28,23	28,06	28,29	27,87	27,49	27,42	26,95	26,50	25,88	25,16	24,76	24,66	23,76	22,87	14,85	
Net Revenue RM million	(5.65)	(9.33)	(12.19)	(10.41)	(8.15)	(4.64)	2.66	8.39	12.84	27.04	23.87	13.28	13.74	13.40	12.99	12.61	12.59	12.46	12.35	11.77	11.31	10.92	10.84	9.92	9.81	6.40	
B. Rubber																											
Annual Planted Area (ha)	784	489	830	384	107																						
Total Cost (RM million)	1.60	1.70	2.65	2.41	1.89	1.61	1.62	1.79	2.51	3.28	4.18	4.77	5.19	5.35	5.44	5.55	5.60	5.68	5.71	5.72	5.72	5.72	5.72	5.57	5.38	3.67	
Total Yield (t)								408	976	1,814	2,651	3,278	3,739	4,055	4,259	4,409	4,481	4,523	4,521	4,514	4,497	4,427	4,347	4,177	4,056	2,700	
Price (RM/t)								2,068	2,118	2,538	3,015	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	2,596	
Total Revenue (RM million)								0.84	2.07	4.61	7.99	8.51	9.71	10.53	11.06	11.45	11.63	11.74	11.74	11.72	11.68	11.49	11.28	10.84	10.53	7.19	
Net Revenue (RM million)	(1.60)	(1.70)	(2.65)	(2.41)	(1.89)	(1.61)	(1.62)	(0.95)	(0.44)	1.33	3.82	3.74	4.52	5.18	5.62	5.89	6.03	6.06	6.02	5.99	5.95	5.77	5.56	5.28	5.15	3.52	
Oil Palm and Rubber (RM million)	(7.24)	(11.03)	(14.84)	(12.82)	(10.05)	(6.25)	1.04	7.44	12.40	28.37	27.89	17.02	18.26	18.58	18.60	18.50	18.62	18.52	18.37	17.77	17.26	16.89	16.40	15.20	14.06	9.92	
EIRR (%)	15.59																										

[illegible][illegible]

Table 10: Estimation of EIRR for Cocoa and Fruit Development

Item	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
A. Cocoa																											
Annual Planted Area (ha)	113	512	943	1716																							
Total Cost (RM million)	0.10	0.53	1.28	2.69	2.65	2.65	3.20	4.03	4.46	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.59	4.49	4.30	3.96	3.96	3.91	
Total Yield (t)				34	210	607	1,373	1,867	2,164	2,408	2,541	2,627	2,622	2,590	2,518	2,379	2,268	2,215	2,103	2,056	1,965	1,939	1,892	1,801	1,775	1,671	
Price (RM/t)				4,234	3,237	3,127	2,882	2,364	2,568	3,002	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	3,104	
Total Revenue (RM million)				0.14	0.68	1.90	3.96	4.41	5.56	7.23	7.89	8.15	8.14	8.04	7.81	7.38	7.04	6.87	6.53	6.38	6.10	6.02	5.87	5.59	5.51	5.19	
Net Revenue (RM million)	(0.10)	(0.53)	(1.28)	(2.55)	(1.97)	(0.75)	0.76	0.38	1.10	2.62	3.27	3.54	3.52	3.43	3.20	2.77	2.42	2.26	1.91	1.77	1.51	1.53	1.57	1.63	1.55	1.26	
B. Fruit																											
Annual Planted Area (ha)	40	80	80	100	100																						
Total Cost (RM million)	0.04	0.12	0.21	0.32	0.45	0.50	0.58	0.64	0.71	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.75	0.66	
Total Yield (t)				240	800	1,520	2,520	3,720	4,520	5,240	5,800	6,200	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	5,700	
Price (RM/t)				450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	
Total Revenue (RM million)				0.11	0.36	0.68	1.13	1.67	2.03	2.36	2.61	2.79	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.59	
Net Revenue (RM million)	(0.04)	(0.12)	(0.21)	(0.21)	(0.09)	0.19	0.55	1.03	1.32	1.60	1.85	2.03	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.13	1.93	
Cocoa and Fruit Net Revenue	(0.14)	(0.65)	(1.48)	(2.76)	(2.06)	(0.56)	1.31	1.41	2.42	4.22	5.13	5.57	5.65	5.55	5.32	4.89	4.55	4.38	4.04	3.89	3.63	3.65	3.69	3.75	3.69	3.21	
EIRR (%)	25.71																										

Year

[illegible]

Table 12: Project EIRR Analysis

Year	Project Costs					Project Benefits (RM million)					Yield +20% Prices -20%					
	Oil		Civil	Equipment & Consulting	Training	Total	Oil			Rubber		Cocoa	Fruit	Total	Net	Prices -20%
	Palm	Rubber	Works	Vehicles			Palm	Rubber	Cocoa							
1984																
1985	5.65	1.60	0.00	0.00	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.18)	(0.18)
1986	9.33	1.70	0.20	0.48	0.52	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(7.90)	(7.90)
1987	12.19	2.65	0.19	0.38		12.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(12.36)	(12.36)
1988	11.97	2.41	0.32	1.35		16.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(16.89)	(16.89)
1989	12.33	1.89	0.63	0.89		20.96	1.56	0.00	0.14	0.11	1.81	0.36	5.22	(19.15)	(19.87)	(16.89)
1990	12.63	1.61	0.25	0.60	0.22	18.84	4.17	0.00	0.68	0.36	5.22	10.57	(10.13)	(14.66)	(15.71)	(19.87)
1991	13.30	1.62	0.58	1.25		20.70	7.99	0.00	1.90	0.68	10.57	(10.13)	(12.24)	(14.36)	(15.71)	(19.87)
1992	13.88	1.79	1.77	1.25		21.72	15.96	0.00	3.96	1.13	21.05	(0.67)	(4.88)	(9.09)	(14.36)	(15.71)
1993	14.57	1.60	1.27	2.08		23.70	22.27	0.84	4.41	1.67	29.20	5.50	(0.34)	(6.18)	(14.36)	(15.71)
1994	14.83	3.28				16.31	27.41	2.07	5.56	2.03	37.07	20.76	13.34	5.93	(6.18)	(14.36)
1995	15.00	4.18				23.49	41.88	4.61	7.23	2.36	56.07	32.58	21.37	9.87	(6.18)	(14.36)
1996	14.95	4.77				24.55	38.88	7.99	7.89	2.61	57.37	32.82	21.34	9.87	(6.18)	(14.36)
1997	14.92	5.19				25.09	28.23	8.51	8.15	0.00	44.90	19.81	10.83	1.85	(6.18)	(14.36)
1998	14.89	5.35				25.48	28.66	9.71	8.14	2.88	49.39	23.91	14.03	4.15	(6.18)	(14.36)
1999	14.89	5.44				25.61	28.29	10.53	8.04	2.88	49.74	24.13	14.18	4.23	(6.18)	(14.36)
2000	14.88	5.55				25.70	27.87	11.06	7.81	2.88	49.62	23.92	14.00	4.08	(6.18)	(14.36)
2001	14.83	5.60				25.81	27.49	11.45	7.38	2.88	49.20	23.40	13.56	3.72	(6.18)	(14.36)
2002	14.49	5.68				25.80	27.42	11.63	7.04	2.88	48.97	23.17	13.37	3.58	(6.18)	(14.36)
2003	14.16	5.71				25.54	26.95	11.74	6.87	2.88	48.44	22.90	13.21	3.53	(6.18)	(14.36)
2004	13.90	5.72				25.24	26.50	11.74	6.53	2.88	47.65	22.40	12.87	3.34	(6.18)	(14.36)
2005	13.85	5.72				25.00	25.68	11.72	6.38	2.88	46.66	21.66	12.33	2.99	(6.18)	(14.36)
2006	13.83	5.72				24.93	25.16	11.68	6.10	2.88	45.81	20.89	11.72	2.56	(6.18)	(14.36)
2007	13.83	5.72				24.81	24.76	11.49	6.02	2.88	45.15	20.34	11.31	2.28	(6.18)	(14.36)
2008	13.83	5.57				24.62	24.68	11.28	5.87	2.88	44.72	20.10	11.15	2.21	(6.18)	(14.36)
2009	13.06	5.38				23.15	23.76	10.84	5.59	2.88	43.07	18.95	10.34	1.72	(6.18)	(14.36)
2010	8.54	3.67				16.79	14.95	7.19	5.19	2.59	29.92	13.13	7.14	1.16	(6.18)	(14.36)

Sensitivity Indicator

RIIR

Base Case (%)

Prices – 20%

Prices - 20% and Yield - 20%

2.13

SUMMARY OF THE RESULTS OF THE SOCIOECONOMIC SURVEY CONDUCTED UNDER TA NO. 2145-MAL

A. Survey Methodology

1. The sample covered in the survey was selected on the basis of stratified random sampling. The target population was stratified according to the three types of Project schemes, namely, Federal Land Consolidation and Rehabilitation Authority (FELCRA) smallholder estates, cocoa smallholders' scheme, and pilot development schemes. A sample size of 10 percent was used, giving the total number of participants as 262 farm families. The area surveyed covered the six districts of Maran, Temerloh, Jerantut, Lipis, Raub, and Bentong. Details of the survey methodology are given in the consultant's report on TA No. 2145.¹

B. Summary Results

1. Demographic Characteristics

2. The majority of the participants were males (77 percent). The average female-male ratio was 0.3 (i.e., male participants outnumbered females), which was higher than Pahang state's average of 0.2 (Agricultural Census 1990). The proportion of female participants was highest in the FELCRA smallholders' development schemes (31 percent). Details are given in Table 1.

3. The mean age of the participants at the time of the survey was 55 years. More than 90 percent of them were above 30 years. Those above 60 years comprised 36 percent. The scarcity of young farmers reflected the increasing lack of interest in agriculture as a livelihood among the younger generation in the farming community.

4. The majority of the participants had at least primary school education (62 percent). The literacy rate approximated 78 percent, and the proportion of those with no schooling or limited schooling was 22 percent. This ratio was lower than that for 1987 (25 percent) and 1984 (28 percent). This change was partly due to the participation of some younger farmers who inherited their farms from their parents. Details are given in Table 2.

5. The average household size was 4.5. This was smaller than the average agricultural household size of 5.1 in Pahang recorded in 1990. In 1987, the average household size of the participants was estimated to be 5.0. The decline could be attributed to out-migration. Field observations indicated a predominance of households with young children and older parents, while older children were absent, as they had left home to work elsewhere. More than half of the participants' households were small with less than four persons per household. Those in the FELCRA smallholders development schemes were observed to have the largest average household size of 4.7. Details are given in Table 3.

¹ TA No. 2145-MAL: *Postevaluation of Pahang Barat Integrated Agriculture Development Project* (Loan No. 602-MAL) for \$100,000, approved on 30 August 1994.

2. Economic Participation

6. The average number of working-age members per household was 1.8. The ratio of working members was higher among households in the pilot development schemes and lowest for the cocoa smallholder households.

7. The labor force status of the sampled population showed a participation rate of 96 percent. The unemployment rate was 4 percent.

8. In terms of employment status, 44 percent of the labor force in the sampled population was self-employed. Around 9 percent were paid employees. Eleven percent were unpaid family workers, and housewives made up 28 percent of the labor force. The unemployment rate was highest among cocoa smallholders (7.5 percent) and lowest among the pilot development participants' families (1.5 percent). Details are provided in Table 4.

3. Out-migration

9. Out-migration from the Project area has been going on since early 1960s. The incidence of out-migration rose from 15 percent before 1984 to 19 percent between 1984 and 1990. Between 1990 and 1995, it fell to 16 percent. In terms of proportion, about 30 percent of the migrants left the Project area before 1984, and 40 percent left between 1984 and 1990. It was more prevalent among participants' households in the pilot development scheme (54 percent) than in the other schemes. It was marginally lower for the FELCRA estate smallholders schemes (23 percent). Although there was still a considerable outflow of people from the farming communities after 1990, the proportion of migrants declined, especially among the families of cocoa smallholders and owners of pilot development schemes.

10. Females outnumbered the male out-migrants. Throughout the period from 1963 to 1994, more females migrated, making up 52 percent of the total migrants.

4. Farm Income

11. FELCRA estate smallholders earned an average annual household income of RM3,829 in 1984. In 1994, it was RM5,947, an increase of 55 percent.¹ In the case of the pilot development schemes, it rose from RM4,394 in 1984 to RM5,431 in 1994 — an increase of 24 percent. For the cocoa smallholders, their annual income rose from RM4,349 in 1984 to RM5,874 in 1994, an increase of 35 percent.

12. The monthly household income for the FELCRA estate smallholders rose from RM319 in 1984 to RM496 in 1994. Among the participants in the pilot development schemes, it rose from RM366 in 1984 to RM453 in 1994. For the cocoa smallholders, it was RM362 in 1984 and RM490 in 1994.

13. The median annual household income for all participants in 1984 was RM3,500. By 1994, it was RM4,800, an increase of 37 percent over the 11-year period. The median monthly

¹ All incomes are expressed in current prices.

household income for all participants was RM292 in 1984. It rose by 37 percent to RM400 by 1994.

5. Standards of Living

14. Ownership of consumer durables and transport vehicles reflected changes in the standards of living of the participants over time. A large number owned consumer durables such as refrigerators, color televisions, radio-cassette players, and gas stoves. The trend revealed that the purchase of black and white television sets had declined, while that of color televisions had risen over time. A large proportion of these goods, especially color televisions, refrigerators, and fans, were purchased after 1985.

15. In the case of vehicle ownership, most motorcycle purchases were made before 1985. An overall gradual increase in motorcar purchases occurred after 1985. Some participants began to buy vans or lorries in the late eighties and early nineties.

6. Housing Conditions and Basic Amenities

16. All the participants stayed in residential houses. The majority (92 percent) were owner-occupiers. Only one rented his living premises. About 8 percent had other tenurial arrangements. One was the *tumpang*, an informal tenancy arrangement where some farmers rented their living quarters from relatives or close friends. No tenancy documents were executed and the rents were nominal, probably non-monetary in nature.

17. More than half of the houses (57 percent) occupied by farmers were brick-cum-timber structures and 35 percent were timber buildings. A small proportion (7 percent) were concrete with brick structures. Eighty percent of the houses had zinc roofs and the rest had asbestos roofing materials.

18. The participants perceived that their housing conditions had improved compared with those in 1984. More than 75 percent felt that their present homes were satisfactory and only 20 percent regarded themselves as being worse off than before. Two percent were of the opinion that their present houses could further be improved either through renovations or building of new ones of wood and timber.

19. Field observations of existing houses indicated that two thirds were in good condition and 29 percent were deteriorating; 1 percent of the farmers surveyed lived in dilapidated houses.

20. The participants' houses were generally provided with adequate basic amenities such as electricity and piped water supply. Almost all farmers surveyed had electricity in their homes and 90 percent had piped water, which indicated easy access to safe drinking water. Seventy-seven percent had pour-flush toilet systems in their homes and 19 percent had flush toilets. Participants expressed satisfaction with the existing garbage disposal system, and more than 90 percent were happy with the basic amenities provided.

7. Female Participation

21. About a quarter of the participants were females, which implied that direct female participation in the Project was still relatively low. However, indirect participation was higher. About 44 percent of farmers' spouses worked. Among them, 84 percent worked on the farms, highlighting their important role in farm operations. They performed such duties as fruit harvesting, maintaining the farms' general cleanliness, and providing support and assistance to their spouses in overall farm management and operations, such as tapping in the case of rubber.

8. Children's Participation

22. Not many of the participants' children worked on their farms. They represented 8 percent of the working-age population and 10 percent of the overall labor force among the sampled population. There were more female than male children working. Most of them regarded their jobs as temporary.

23. The majority of the participants perceived that it was unlikely that their children would take up farming. Sixty-four percent believed that the children were not interested. The reasons given for this included low and unstable income from agriculture (31 percent), preference for work in other economic sectors (36 percent), and the unpredictable future of farming (19 percent).

9. Participants' Perception of Benefits from the Project

24. Participation in the FELCRA estate smallholders' scheme benefited the farmers directly in terms of land ownership. Previously, the average size of their holdings was 1.1 ha. At the time of the survey, it was 2.48 ha. Most of the participants were agricultural workers who did not cultivate their land. Participation enabled them to put their farms to better use. It was also observed that 57 percent did not cultivate their holdings, which were left idle before their joining the FELCRA program.

25. The majority of the FELCRA participants joined the scheme because they anticipated a higher and more stable income from the Project. At present, 41 percent of those surveyed believed that they benefited from joining the scheme.

26. The majority of the cocoa smallholders and pilot development schemes' participants indicated that they had benefited from the program.

Table 1: Sex Distribution of Participants by Type of Project

Project	Total Participants	Sex Distribution % of Participants		Sex Ratio
		Male	Female	
Smallholders Estate Development	68	47	21	44.68
Cocoa Development Schemes	67	56	11	19.64
Pilot Development Schemes	127	99	28	28.28
Total/Average	262	202	60	22.90
				29.70

Table 2: Age Distribution of Participants by Type of Projects

Project	Total Participants	Age Distribution of the Participants					
		20-30 Years	30-40 Years	40-50 Years	50-60 Years	> 60 Years	
		No.	No.	No.	No.	No.	%
Smallholders Estate Development	68	1	1	22	22	22	32.35
Cocoa Development Schemes	67	1	5	10	27	24	35.82
Pilot Development Schemes	127	4	9	20	45	49	38.58
Total/Average	262	6	15	52	94	95	36.26
In Age of Participants	54.6	26.8	36.3	44.5	54.9	64.7	

