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**Report No. 10668**

PROJECT COMPLETION REPORT

MALAYSIA

FELDA PALM OIL MILLS PROJECT  
(LOAN 2530-MA)

MAY 29, 1992

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Agriculture Operations Division  
Country Department I  
East Asia and Pacific Regional Office

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CURRENCY EQUIVALENT

Currency Unit	=	Malaysian Ringgit (M\$)	
		<u>Year</u>	<u>Exchange Rate</u>
US\$1.00	=	1984	2.34
		1985	2.48
		1986	2.58
		1987	2.52
		1988	2.62
		1989	2.71
		1990 (Completion)	2.69
		1991	2.69

ABBREVIATIONS

BOD	-	Biological Oxygen Demand
CPO	-	Crude Palm Oil
DBMS	-	Data Base Management System
DOE	-	Department of Environment
EDP	-	Electronic Data Processing
FELDA	-	Federal Land Development Authority
FELMILL	-	FELDA Palm Oil Mills Corporation
ffb	-	Fresh Fruit Bunches, of oil palm
MIS	-	Management Information Systems
ppm	-	parts per million

WEIGHTS AND MEASURES

Metric System

FISCAL YEAR

January 1 - December 31

THE WORLD BANK  
Washington, D.C. 20433  
U.S.A.

Office of Director-General  
Operations Evaluation

May 29, 1992

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report on Malaysia - Felda  
Palm Oil Mills Project (Loan 2530-MA)

Attached, for information, is a copy of a report entitled "Project Completion Report on Malaysia - Felda Palm Oil Mills Project (Loan 2530-MA)" prepared by the East Asia and Pacific Regional Office with Part II of the report contributed by the Borrower. No audit of this project has been made by the Operations Evaluation Department at this time.

Attachment

A handwritten signature in black ink, appearing to be 'A. Thomas', is written over the word 'Attachment'.

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Map IBRD 23564

PROJECT COMPLETION REPORT

MALAYSIA

FELDA PALM OIL MILLS PROJECT

(LOAN 2530-MA)

Preface

This is the Project Completion Report (PCR) for the FELDA Palm Oil Mills Project in Malaysia, for which Loan 2530-MA in the amount of US\$31.2 million was approved on May 7, 1985. The loan was made to the Federal Land Development Authority (FELDA). Loan cancellations amounted to US\$13.3 million. The reduced loan amount was fully disbursed and the last disbursement was on December 10, 1990. The loan was closed on schedule on June 30, 1991.

The Evaluation Summary and Parts I and III of the PCR were prepared by the Agriculture Operations Division of the East Asia and Pacific Country Department I. Part II was prepared by FELDA.

Preparation of this PCR was started during the Bank's final supervision mission for the Project in June 1990, and later completed on the basis of a separate evaluation of the Electronic Data Processing (EDP) component in July 1, 1991 and information provided by the Borrower. The PCR is also based, inter alia, on the Staff Appraisal Report; the Loan, Guarantee and Project Agreements; correspondence between the Bank and the Borrower and the Guarantor; and internal Bank documents.

PROJECT COMPLETION REPORT

MALAYSIA  
FELDA PALM OIL MILLS PROJECT  
(LOAN 2530-MA)

Evaluation Summary

Project Objectives

1. In support of the Government's smallholder land settlement program, the project objectives were to: (a) strengthen FELDA (Federal Land Development Authority) and FERMILL (FELDA Mills Corporation) palm oil mill operations; (b) strengthen FELDA's corporate planning, budgeting and accounting, and management information systems; (c) promote the Government's policy of making public commercial enterprises become financially self-sufficient; and (d) contribute to overcoming Malaysia's balance of payments and fiscal constraints. The Project included: (a) construction and commissioning of seven palm oil mills with a total capacity of 351 ton ffb/hour during 1984-1989; and (b) provision of about 24 man-months of technical assistance to FELDA for developing and implementing an Electronic Data Processing System (EDP), with emphasis on a Data Base Management System (DBMS).

Implementation Experience

2. FELDA had enjoyed a long and close relationship with the Bank under six earlier successful smallholder settlement projects, but this was the first operation for which the Bank and the Government agreed that FELDA should be the direct Borrower given the commercial nature of the activities involved. Although FELDA's top management were fully committed to the objectives of this seventh project, they were reluctant to borrow directly and assume the foreign exchange risk of the Bank loan, which caused a delay in Board presentation of the project by nearly two months. The deadline for loan effectiveness was extended once due to delays in finalizing and signing the Subsidiary Mill Transfer Agreement between FELDA and FERMILL. Thereafter, project implementation was generally free of problems, and the loan closed on schedule on June 30, 1991.

3. Mill construction was fully completed by loan closing. However, the number of mills was reduced from seven to six, and the installed capacity was scaled down from 351 to 270 ton-ffb/hour, in line with the revised ffb production projections. In compliance with Malaysian strict environmental standards, all project mills were provided with effluent biological treatment facilities. The three mills in Peninsular Malaysia were completed and commissioned on or ahead of schedule, while the other three in Sabah were all delayed by about one year.

4. Early during implementation FELDA decided not to finance the EDP consultants out of the Bank loan, since the Government had agreed to provide budgetary support for this purpose. This effectively reduced the Bank's direct involvement with the EDP component. Nevertheless, as had been agreed

with the Bank, the TOR of consultants who had been retained prior to negotiation were amended to include development of a DBMS and an "Automation Plan for FELJA and FELDA Corporations", thus retaining the objectives and the main thrust of the EDP component. FELDA also continued to share information with the Bank from time to time and was receptive to its suggestions on the implementation of the EDP. Later, FELDA extended the consultants' contract to assist in the implementation of the Automation Plan for FELDA and to prepare a more specific automation plan for the corporations.

5. Actual Project costs were US\$37.8 million (M\$97.9 million) compared to US\$62.1 million (M\$154.7 million) estimated at appraisal. Of this, US\$37.2 million (M\$96.4 million) were for palm oil mill construction, compared to US\$61.8 million (M\$154.0 million) estimated at appraisal, and US\$0.6 million (M\$1.5 million) for EDP consulting services (US\$0.3 million at appraisal). About one-third of the cost difference for mills was due to the deletion of one mill and the reduction of installed capacity in two others. The rest was primarily due to much lower than expected price increases. As a result of lower project costs and FELDA's concern about the cost of Bank funds, the Loan was reduced from US\$31.2 million to US\$17.9 million, which was fully disbursed on December 10, 1990.

#### Results

6. Overall the project was satisfactory and project results, particularly in respect of FELDA/FELMILL palm oil mills operations, were close to appraisal expectations. Decisions taken during project preparation and appraisal to review ffb production projections and reschedule/scale down the installed capacity of some mills were timely and appropriate. Overall, mill capacity utilization, and consequently FELMILL's financial position, are much stronger today as a result.

7. The EDP component brought benefits to FELDA and its corporations. It made a significant contribution to improving FELDA's operations -- particularly regarding decentralization of data entry and improvement of settler accounts. Establishment of PRODATA has been instrumental in the overall improvement of data management and also cost savings through the sharing of equipment and software. The charge-back system adopted by PRODATA ensures recovery of investments and introduces discipline among FELDA user departments and corporations. Nonetheless, the objective of establishing a DBMS was not fully achieved. The achievements and shortcomings in this regard have to be seen in the light of the complexity of FELDA's functions and the concerns of FELDA staff about data security and the risks involved in migrating from one system to another. It should also be noted that separate data bases for various FELDA functions had to be established before proceeding with the implementation of an overall DBMS. In hindsight, the original EDP objectives were valid, but the specific targets were overly ambitious for the time and resources estimated at appraisal.

8. With regard to the Government's policy of promoting financial self-sufficiency of public commercial enterprises, to some extent this was undermined when Government funds on concessional terms were made available to FELDA for various activities. However, Government lending terms to

parastatals have been adjusted and are now close to market terms. In the case of FELDA, the Government has continued to reduce budget support for development activities, and FELDA is increasingly relying on its own resources to finance investments in mill construction and land development.

9. The combined economic rate of return (ERR) for the six mills financed under the project is now calculated at 13%, which is satisfactory. At appraisal, the ERR was estimated at 16% for seven mills. The re-estimated ERR is lower primarily because processing charges, which were assumed at appraisal to remain constant in real terms have actually declined. Other reasons for the lower ERR are longer construction periods and delayed benefits from some mills, and a higher weight of the more expensive Sabah mills, due to the exclusion from the project of one mill in west Malaysia. The financial rate of return is calculated at 11%, which is lower than the appraisal estimate of 14%, for the same reasons.

#### Sustainability

10. FELMILL operations in general and project-financed mills in particular are sustainable. With FELDA's oil palm areas reaching maturity, ffb production and mill capacity utilization are increasing, thus promising a steady flow of benefits during the economic life of the mills. The high quality of FELMILL commercially-oriented technical and financial management further assures sustainability.

#### Findings and Lessons Learned

11. The main findings and lessons learned are as follows.

- (a) Public sector corporations can function very efficiently, from both a technical and financial standpoint, if they are provided with adequate incentives, management and operational autonomy. FELMILL and several other corporations in the FELDA group are good examples. FELDA's own operational efficiency and the growth of its managerial cadre could be further strengthened with some decentralization of decision-making power and improved communications (PCR, para. 9.1).
- (b) Inconsistent Government policies can affect project implementation. In this case, the Government compelled FELDA to borrow directly from the Bank, in line with its policy of promoting the financial self-sufficiency of public commercial enterprises, but at the same time made low-cost loans and grants available to FELDA during project implementation, thus reducing FELDA's incentive to utilize the Bank loan for various activities (PCR, paras. 4.5, 5.3 and 6.3).
- (c) Allocation of specialized Bank staff or consultants during project preparation and implementation is necessary, particularly in those areas in which the Borrower is less experienced. In this case, Bank technical input for the EDP component could have been stronger despite the fact that FELDA chose not to use loan funds to finance implementation (PCR, para. 8.2).



PROJECT COMPLETION REPORT

MALAYSIA

FELDA PALM OIL MILLS PROJECT

(LOAN 2530-MA)

PART I: PROJECT REVIEW FROM THE BANK'S PERSPECTIVE

1. Project Identity

Name : FELDA Palm Oil Mills Project  
Loan Number : 2530-MA  
RVP Unit : East Asia and Pacific Region  
Country : Malaysia  
Sector : Agriculture and Agro-Processing

2. Background

2.1 FELDA. The Federal Land Development Authority (FELDA), established in 1956 as a Statutory Body attached to the Ministry of Lands, currently operates under the Ministry of Rural Development. Since its inception, FELDA has played a major role in addressing the Government's poverty alleviation through the development and planting of State lands with rubber and oil palm settlement by poor rural families. FELDA's full integrated program includes land development and smallholder settlement in group farming schemes and the provision of community organization, management, agricultural extension, inputs, credit, processing, marketing and other services. For its development services and downstream activities, by the time of project appraisal FELDA had established eight subsidiary corporations and entered into six joint venture arrangements with the private sector since 1972. The largest among FELDA's corporations was and still is the FELDA Mills Corporation (FELMILL), which at the time of its establishment was charged with the processing of oil palm fruits and rubber. FELMILL's rubber operations were later transferred to another corporation.

2.2 By the time of project appraisal in 1984, FELDA had developed and planted around 360,000 ha with oil palm (66%), rubber (30%) and other crops (4%), and had emplaced about 85,000 settler families. FELMILL operated 56 palm oil mills with a combined throughput capacity of about 2,750 ton-ffb/hour. A large number of development schemes were reaching the production stage and FELDA was concerned about consolidating them through the provision of roads, village infrastructure and processing facilities, particularly palm oil mills.

2.3 FELDA and its corporations had generally been efficient and well managed and had long been considered a success story of Government-organized land development and settlement. However, FELDA's management, financial and information systems were in need of some further improvement to cope with the

increasing complexity and size of its operations brought about by the exceptional growth experienced during the 1970s. In particular, FELDA's accounting system which had been established and automated in the early 1970s required modernization, and there was a need for decentralization of data processing. With increasing reporting requirements, it was also necessary to establish an efficient management information system capable of integrating the various management functions, (e.g., budgeting, contracting, settler accounts, etc.) with the general accounting system. FELDA management was committed to addressing these needs and in July 1984, before loan negotiations, FELDA retained a consulting firm for the development and implementation of improved management, financial and computer systems.

2.4 FELDA's financial position was healthy. It had accumulated a substantial cash surplus resulting from the spread in its re-lending of government funds to the settlers and subsidiary corporations, management levies, replanting reserves and returns from investments. The Government, however, was facing budget constraints and had embarked on a policy of encouraging the financial self-sufficiency of revenue-earning entities. It had, therefore, started to reduce FELDA's dependence on the official budget. In 1983, the Government covered only 80% of FELDA's administrative costs out of the general budget, and the spread on FELDA's re-lending operations was eliminated.

2.5 Bank Involvement and Project Origin. The Bank had supported FELDA since 1968 through six loans for tree crop development and oil palm and rubber processing. Those projects had been highly satisfactory, and through their implementation the Bank had made a significant contribution to the institutional development of FELDA. During FELDA-Bank discussions in 1983, it was agreed that the most effective way for the Bank to further support FELDA was by providing assistance to critical components (palm oil mills, roads and water supply facilities) of its settlement program on a time-slice basis, rather than financing individual schemes. It was also agreed that the Bank would assist FELDA in its efforts to improve its financial and management information systems, with emphasis on the development and implementation of a modern electronic data processing system. Finally, as a step towards the financial self-sufficiency of FELDA's commercial operations, it was agreed with the Government that the Bank loan would be made directly to FELDA with FELDA/FELMILL bearing the full cost of borrowing.<sup>1</sup>

### 3. Project Objectives and Description

3.1 Project Objectives. In support of the Government's smallholder land settlement program, the project objectives were to: (a) strengthen FELDA/FELMILL palm oil mill operations; (b) strengthen FELDA's corporate planning budgeting and accounting and management information systems; (c) promote the Government's policy of financial self-sufficiency of public

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1/ After approval of the Palm Oil Mills project, the Bank approved two other loans to GOM for FELDA for the Land Settlement Infrastructure and Sabah Land Settlement and Environmental Management Projects (Loans 2642 and 3039-MA), both of which are currently under implementation.

commercial enterprises; and (d) help to alleviate Malaysia's balance of payments and fiscal constraints.

3.2 Project Components The Project included: (a) construction and commissioning of seven palm oil mills with a total capacity of 351 ton ffb/hour during 1984-1989; and (b) provision of about 24 man-months of technical assistance to FELDA for developing and implementing an Electronic Data Processing System (EDP).

#### 4. Project Design and Organization

4.1 Overall, the project concept and objectives were clear, and the design of the two major components was well-suited to the prevailing needs of FELDA.

4.2 Palm Oil Mills Component. FELDA/FELMILL palm oil mills engineering designs, construction and operation had been developed and constantly improved through several years of experience. The project, therefore, did not aim to make a major contribution to these aspects, although some refinements were proposed through the exchanges between Bank and FELDA technical staff during preparation and implementation. The mill component focused primarily on the review and improvement of FELDA/FELMILL mill development program, adjusting mill construction timing and capacity on the basis of updated ffb harvest projections. This approach was timely since FELDA had embarked on an accelerated mill construction program because it expected high ffb yields from the introduction of weevil pollination. These yields did not materialize resulting in a lower than anticipated overall mill capacity utilization of about 40% at that time, so the decisions taken during preparation to reschedule the construction of some prospective mills and scale down the capacity of others were appropriate.

4.3 Although FELDA and FELMILL management and staff were quite interested in receiving Bank support for their palm oil mill construction program, they were not enthusiastic about borrowing directly from the Bank. For this reason, FELDA's Board was initially reluctant to approve the loan as negotiated with the FELDA staff, and later during implementation the scope of the project was reduced and the loan was partially cancelled. Institutional responsibility for the palm oil mills component was clearly defined and worked very well during implementation. Mill design and construction were initially the responsibility of FELDA's Process Department (PD), and operation that of FELMILL. The design and construction functions, and the Processing Department itself, were later transferred to FELMILL, which was a further institutional improvement.

4.4 Electronic Data Processing (EDP) Component. Inclusion of the EDP in the project was very timely and, to a certain extent, innovative. FELDA had retained a consulting firm for development and implementation of improved management, financial and computer systems, but the scope of the work proposed was focused only on general accounting, settler and MIS improvements, without addressing the more basic need for a full Data Base Management System (DBMS) as a precondition for reliable information management. The DBMS concept was to be introduced under the project, designed to suit FELDA's accounting and

MIS requirements and to integrate all data pertaining to FELDA and the corporations through proper coding and simultaneous transmission of data from/to the settlement schemes and palm oil mills to/from regional offices and headquarters. The need for procurement of mini- and micro-computers for on-line transmission of data from the field was also identified. Implementation of the EDF was to be based on the recommendations and an action plan to be prepared by the consultants. The project was to finance additional consulting services for design and implementation of the DBMS, but the resources allocated were not sufficient for the complex task of developing a DBMS and MIS and overhauling FELDA's accounting system. This later resulted in implementation shortcomings.

4.5 The EDP component was developed by the Bank in cooperation with FELDA's Data Processing Department staff, who fully supported it. FELDA's management was also committed to these improvements. However, as in the case of the mills component, they were reluctant to use Bank funds to finance consultants and computer equipment, because Government grant funds were available for these purposes. In retrospect, direct discussions on this issue with FELDA top management during preparation and appraisal would have been very useful.

## 5. Project Implementation

5.1 Bank Board presentation was delayed by nearly two months because of the reluctance of FELDA's Board to borrow directly from the Bank (para. 4.3). The deadline for loan effectiveness was extended once due to delays in finalizing and signing the Mill Transfer Agreement between FELDA and FELMILL. Project implementation was generally free of problems and the loan closed on June 30, 1991, the original closing date.

5.2 Mill Construction. Mill construction was fully completed by loan closing, but the number of mills was reduced from seven to six and the mill installed capacity was scaled down from 351 to 270 ton-ffb/hour. During implementation, one of the original mills was re-scheduled and another substituted in its place and an eighth mill was added to the project, but both of these were later excluded from financing when a portion of the loan was cancelled at the request of FELDA. The installed capacity of two mills was reduced from 54 to 27 ton-ffb/hour. The three mills in Peninsular Malaysia were completed and commissioned on or ahead of schedule, while the other three in Sabah were all delayed by about one year.

5.3 The changes in the project scope during implementation mostly reflected FELDA's concern about the cost of Bank funds and the foreign exchange risk. At one time FELDA wanted to utilize the loan rapidly to avoid paying commitment charges, and later decided to use the loan to finance only six mills. Other decisions about mill rescheduling and reduction of installed capacities were made in response to changes in ffb production projections. Construction delays in two of the Sabah mills were due to more difficult access and working conditions than had been foreseen at appraisal.

5.4 Mills Environmental Impact. In compliance with Malaysian strict environmental standards, all project mills were provided with effluent biological treatment facilities. Mill discharges after treatment are subject to maximum BOD (Biological Oxygen Demand) level of 100 ppm, which has gradually been dropped to 50 ppm. The Department of the Environment (DOE) closely monitors palm oil mill effluents and ensures strict compliance with the standards.

5.5 Procurement. Palm oil mill construction and procurement of equipment did not encounter major problems. In fact, during implementation emphasis was given to improving procurement practices and to the drafting of standard procurement documents which were later used in other Bank financed projects in Malaysia.

5.6 Electronic Data Processing (EDP). During implementation, FELDA's decision not to use the Bank loan EDP consultants effectively limited the Bank's direct involvement in this component. Nevertheless, as had been agreed with the Bank, the consultants' TOR were amended to include development of a DBMS and an "Automation Plan for FELDA and FELDA Corporations", thus retaining the objectives and the main thrust of the EDP component. FELDA also continued to share information with the Bank from time to time, and was receptive to the Bank's suggestions on the implementation of the EDP. Later, FELDA extended the consultants' contract to assist in the implementation of the Automation Plan for FELDA itself and to prepare a more specific automation plan for the corporations.

5.7 Overall, the EDP brought about many of the improvements envisaged in the original project objectives and design. During the first two years of implementation, data entry points were decentralized to the regional offices and FELMILL factories, and these offices were provided with micro-computers. This led to the improvement in data transmission, substantially reducing the time required for clean up and reconciliation of settler accounts. During the subsequent implementation of the Automation Plan, FELDA acquired IBM 38 and 400 systems and application software for selected departments (Finance, Budget and Planning, Engineering and Personnel) leading to further improvements. In addition, a MIS, called Development Information System (DIS), covering five independent subsystems, was developed during the latter part of the project. Implementation of the EDP was quite successful in the corporations, which are now on line to the main frame in a multi-company arrangement with multi-company payroll, a common fixed assets system and shared links among the corporations and FELDA.

5.8 A recommendation in the Automation Plan, to centralize computer services to an independent company outside FELDA, led to the merging of FELDA and FELMILL Data Processing Departments and the establishment of FELDA Data Corporation (PRODATA) in 1987. PRODATA was entrusted with the task of providing computer services to FELDA and all FELDA corporations and took over implementation of the Automation Plan. Implementation of FELDA's Automation Plan is still in progress, with generally positive results. Additional hardware and applications software, including general accounting packages, have been acquired. However, no significant progress was achieved on either DBMS or in streamlining the general accounting system. To this day, FELDA's

general accounts are being processed on the outdated IBM 4341 system. Development of DBMS and streamlining of FELDA's general accounting and transfer to the IBM 400 system remain among FELDA/PRODATA's objectives. In the meantime, development of a fully effective MIS is still constrained by the lack of a DBMS capable of linking accounting, budgeting, contract, payroll, and other relevant functions.

5.9 Project Costs. The final cost of the six mills financed under the project was US\$37.2 million (M\$96.4 million), compared to US\$61.8 million (M\$154.0 million) estimated at appraisal for seven mills. About one-third of the cost difference reflects the deletion of one mill and reduction of installed capacity in two others. The rest was primarily due to much lower than expected price increases. In fact, the final cost of the six mills in Malaysian Ringgit was about the same as the baseline cost estimated at appraisal (the SAR allowance for price contingencies was 17% of the baseline cost). Another contributing factor to the lower final cost in US Dollars was a 15% depreciation of the Malaysian Ringgit during the implementation period. The final cost of consulting services for the EDP component was US\$557,448 compared to US\$278,000 estimated at appraisal, due to the increase of consulting services from 24 to 48 person-months.

5.10 Loan Amendments/Cancellations. After loan signing, FELDA and FELMILL remained very concerned about the cost of Bank funds. Early during implementation, FELDA decided not to use loan funds to finance consultants. In February 1987, mill construction costs and disbursement projections were reviewed on the basis of actual contract prices. This review resulted in the first loan amendment reducing loan proceeds from US\$31.2 million to US\$26.1 million. In 1988, FELDA wanted to expedite the use of loan funds and requested the inclusion of an additional mill in the Project. For this purpose, a second amendment was agreed on February 24, 1988. Finally on September 7, 1989, a third amendment was signed limiting Bank financing to only six mills and further reducing the loan amount by US\$8.2 million, to US\$17.9 million. The reduced Bank loan of US\$17.9 million was fully disbursed on December 10, 1990.

## 6. Project Results

6.1 Overall, the project was satisfactory. The mill construction component was successful, and the decisions taken during project preparation and appraisal to review ffb production projections and reschedule/scale down the installed capacity of various mills were timely and appropriate. Overall mill capacity utilization has now reached 60% and, consequently, FELMILL's financial position are much stronger today as a result.

6.2 Implementation of the EDP component contributed significantly to improving FELDA's operations, although the objective of establishing a DBMS was not fully achieved. These achievements and shortcomings have to be seen in the light of the complexity of FELDA's functions and the concern of FELDA staff about data security and the risks involved in migrating from one system to another. It should also be noted that separate data bases for various FELDA functions had to be established before proceeding to implement a relational overall DBMS. In hindsight, the original EDP objectives were

valid, although the targets were overly ambitious for the time and resources estimated at appraisal.

6.3 With regard to support for the Government's policy of encouraging the financial self-sufficiency of public commercial enterprises, to some extent this was undermined when Government funds on concessional terms were made available to FELDA. Nonetheless, the terms of Government loans to parastatals have been adjusted and are now closer to the market terms. In the case of FELDA, the Government has also continued to reduce budget support for development activities, and FELDA is increasingly relying on its own resources to finance investments in mill construction and land development.

6.4 Project Benefits. All six mills financed under the project have been commissioned and are fully operational. Total mill throughput for 1990 was 721,000 ffb-ton and is expected to peak at around 1,040,000 ffb-ton in 1995, and from then on drop and remain constant at around 1,020,000 ffb-ton per year. The crude palm oil (CPO) and palm kernel yearly production value at full development is estimated at US\$74.0 million in 1990 constant dollars, on the basis of the July 1991 Bank Price Projections. Total and individual mill throughput are higher than projected at appraisal, particularly from one-line mills. Two-line mill throughput is expected to range between 160 ffb-ton/year from Peninsular Malaysia mills to 210 ffb-ton/year in Sabah mills, compared to 160 ffb-ton/year appraisal estimate. One-line mill throughput ranges between 120 and 130 ffb-ton/year, compared to 80 ffb-ton/year projected at appraisal. The higher throughputs are due to several factors, including design enhancements, higher palm oil yields in Sabah and better mill utilization, resulting from better mill construction planning and ffb processing for non-FELDA settlers.

6.5 On the basis of an average yield of 20.6 ffb-ton/ha, the six mills constructed under the project will satisfy processing requirements of some 49,500 ha, compared to 52,600 ha for seven mills at appraisal. Regarding beneficiaries, FELDA's policies on settler beneficiary/land ratios for areas settled after December 31, 1989 have been doubled to 20 ac/family (8.1 ha/family). Assuming that about half of the palm oil areas served by the Project-financed mills will be affected by this change, the number of FELDA beneficiary families (i.e., the number of settler families whose palm oil production would be processed in the six project mills), is estimated at 9,200, compared to 13,000 families (served by seven mills) appraisal projection.

6.6 Implementation of the EDP benefited FELDA and its corporations. PRODATA in particular has been instrumental in improving data management and achieving cost savings through the sharing of equipment and software. The charge-back system adopted by PRODATA ensures recovery of investments and introduces discipline among FELDA user departments and corporations.

6.7 Cost Recovery. FELDA financed mill construction investments to FELMILL in accordance with terms and conditions spelled out in the FELDA/FELMILL Mill Transfer Agreement signed under the Project, as follows: (i) the Bank financed portion of mill construction costs (about 48% of the total) under the same terms and conditions as the Bank loan to FELDA,

including FELMILL's bearing of the foreign exchange risk; and (ii) the local portion of the mills cost under the same terms and conditions as given by the Federal Treasury to FELDA, including 7.5% annual interest. Individual loan amortization schedules which are set out at completion and commissioning of each mill are strictly adhered to by FELMILL. This is not strictly in compliance with the Loan Agreement which required that FELDA should receive 25% of mill construction costs as equity and 75% as loan. However, in line with the spirit of this covenant, FELMILL's debt to equity ratio is 1.3:1, which reflects a sound and strong financial base.

6.8 FELMILL recovers its mill construction and operating costs through ffb processing fees (discount) charged to settlers on the basis of ffb processed. Processing fees are fixed by FELMILL's Board on the basis of processing costs and a reasonable return on equity and reserves. Over the life of the Project, milling rates were increased from M\$29.00/ffb-ton in 1984, to M\$32.00/ton-ffb in 1986 and later reduced to M\$31.00/ffb-ton in 1988 for all Malaysia, and M\$28/ffb-ton in 1990 for Peninsular Malaysia only. Higher milling rates in the mid-80's reflected higher milling costs due to low mill capacity utilization brought about by the relatively large number of new mills commissioned during that period. Higher milling rates fixed for Sabah since 1990 are in line with higher costs than in Peninsular Malaysia, which was a requirement under the Loan Agreement. Also as required in the Loan Agreement, FELMILL's ffb processing costs have remained competitive with those in the private sector, which are around M\$30/ffb-ton. During the initial years after commissioning, project mills unit milling costs are higher than the processing fees charged to settlers due to low capacity utilization. However, three of the six project financed mills have already reached break-even and the other three are expected to do so by 1992.

6.9 Economic and Financial Rate of Return. The combined economic rate of return (ERR) for the six mills is now estimated at a satisfactory 13%, compared with an appraisal calculation of 16% for seven mills. Although actual mill construction and operating costs were not higher than at appraisal, the rate of return is lower due to a significant reduction of ffb processing fees in real terms (para 6.8), while it was projected at appraisal that the fees would remain unchanged in real terms. Furthermore, as FELMILL's overall mill capacity utilization should continue to improve and FELMILL's management is committed to reducing costs to settlers, processing fees are projected to grow slower than inflation and, therefore, further decrease in real terms during the 25 year period of analysis. Other reasons for the lower ERR are longer construction periods and delayed benefits from some mills, and a higher weight of the more expensive Sabah mills, due to the exclusion from the project of one mill in west Malaysia. The financial rate of return for the six project mills is calculated at 11%, which is lower than the appraisal estimate of 14% for the same reasons.

## 7. Project Sustainability

7.1 FELMILL's operations in general and project-financed mills in particular are sustainable. With FELDA's oil palm areas reaching maturity, ffb production and mill capacity utilization are increasing, thus providing a steady flow of benefits during the economic life of the mills. While mill



processing fees are not directly linked to international palm oil prices, the sustainability of FELMILL operations depends on the sustainability of the palm oil industry in general and FELDA operations in particular. The major factors that could impair sustainability would be a collapse of international palm oil prices and a drastic reduction of FELDA schemes' ffb production, which do not appear likely in the foreseeable future.

7.2 The high quality of FELMILL's commercially-oriented technical and financial management further assures sustainability. FELMILL's financial position is strong and is expected to remain so. FELMILL operates on a commercial basis and its operations are practically free of Government or FELDA subsidies. While FELMILL has access to Government loans, current repayment terms and interest rates are close to those prevailing in the banking system and, therefore, carry practically no subsidy.

## 8. Bank Performance

8.1 Bank performance and contribution to the project were, in general, satisfactory considering the sophistication of FELDA and FELMILL. In respect of palm oil mills, during preparation the Bank made a positive contribution to the review and updating of FELDA/FELMILL mill development program, adjusting mill construction timing and throughput on the basis of ffb harvest projections. During the initial years of implementation, Bank involvement concentrated on mill design, procurement and construction aspects. A technical dialogue was established between the Bank and FELDA/FELMILL and some specific recommendations for improving mill design and performance were put into effect.

8.2 The Bank's main contribution to the EDP component was made during preparation and appraisal. Bank consultants and FELDA staff identified the main weaknesses affecting FELDA and specific solutions were agreed for implementation under the project, as recorded in the SAR. Unfortunately, no specific Terms of Reference for the consultants' work were agreed in advance of project start-up. Also, during implementation, the Bank allocated only limited technical staff resources to this component, to a great extent because of FELDA's decision not to use the Bank loan for EDP financing. Shortage of relevant specialized Bank staff and budget constraints were also reasons for the limited Bank supervision of this component.

## 9. Borrower Performance

9.1 FELDA and FELMILL are generally very strong organizations and their performances under the project were satisfactory. However, some problems which affected implementation included: (i) an excessive concentration of decision-making power at the top and an inadequate upward communication from middle to high level management. An example of the latter was that, although the SAR and legal documents were made available to FELDA before negotiations, FELDA's top management was apparently not fully informed about the financial implications of borrowing directly from the Bank and was, therefore, initially reluctant to approve the Bank loan; (ii) FELDA's reluctance to authorize the consultants to employ additional technical experts for system analysis and DBMS development, primarily for cost-saving reasons; and (iii) shortage of

qualified system analysts and programmers of the quality required to develop an advanced DBMS. The last problem has in part been overcome with the establishment of PRODATA, but relatively low salaries may still be a constraining factor in attracting qualified personnel.

## 10. Project Relationship

10.1 Bank-FELDA/FELMILL relationships during project preparation and appraisal were positive and cordial, as they have been over the long years of association on this and other projects. FELDA/FELMILL were usually receptive and ready to consider Bank suggestions. Differences of opinion were usually resolved and agreements satisfactory to all parties concerned were usually reached. The GOM-Bank relationship during the whole project cycle was also quite satisfactory. The Treasury, as GOM's representative, was most helpful in resolving initial difficulties, following up implementation and processing of loan amendments.

## 11. Consulting Services

11.1 Consulting services were used for the design and implementation of the EDP. The consultants were appointed by FELDA on the basis of past association and knowledge of their work. Although Bank involvement with the consultants was limited, they were always cooperative and ready to discuss their work and implementation of the EDP with Bank staff. Apparently, the consultants faced difficulties in convincing FELDA management about the technical requirements for their assignment, which eventually resulted in lower than expected results. Moreover, the Finance and Data Processing Department staff were reluctant to agree to the consultants' recommendations, because of concerns about data security and the difficulty of migrating from one system to another, and this eventually affected the EDP results. All things considered, however, the role and performance of the consultants was satisfactory. They had a major impact on the decentralization of data entry points which led to a significant improvement in FELDA's operations, on the improvement of the corporations' EDP, and on the establishment and development of PRODATA. On the other hand, they did not develop an umbrella system for FELDA's DBMS before proceeding with hardware and software purchases and solutions for individual departments and regional offices, which resulted in some mistakes that delayed EDP improvements. In hindsight, the consultants' work could have benefitted from more DBMS-proficient staff.

## 12. Project Documentation and Data

12.1 The SAR and legal documents provided an adequate framework for the project, although the inclusion of detailed consultants' TOR would have facilitated a better dialogue with FELDA and implementation follow up. The information for the preparation of this PCR was readily provided by FELDA/FELMILL. Thanks to its EDP system and on-line transmission from the mills, FELMILL generates detailed and timely data for mill operations which could serve as a model for similar development projects and institutions.

PROJECT COMPLETION REPORT

MALAYSIA  
FELDA PALM OIL MILLS PROJECT  
(LOAN 2530-MA)

PART II : PROJECT REVIEW FROM BORROWER'S PERSPECTIVE 1/

1. Adequacy and Accuracy of Part I and Part III

There are thirteen corporations and eight joint-venture companies. The reported figure of eight and six respectively is likely to be the situation as existed at time of loan initiation.

Mill capacity utilization of 40% as reported understates the true situation which is of the order of 60%. The others are minor errors and do not materially change the general picture or any of the conclusions.

2. FELDA's Overall Comments

2.1. Evaluation Summary

Item In PCR

- 6 Data entry points were decentralised to FELDA regional offices and data transmission to head-office was made available through direct link-up via Maypac services. FELMIL factories were provided with micro-computers but data transmission was made through FELMIL regional offices. Direct data transmission from mills to head-office cannot immediately proceed due to poor telephone communication services. However, it is our long term objective to have direct link-up.

On the development of DBMS, progress was not as speedy as initially expected. It is our finding that S38 software does not meet our need fully and we have to resort to in-house system development. Towards this direction several modules have been completed and are in operation whilst several others are in various stages of development. 2/

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1/ The final version of the Evaluation Summary and Part I incorporate some of the Borrower's comments in Part II. Also, the paragraph numbers referred to in Part II may have changed.

2/ Paragraph 6 was deleted from the Evaluation Summary. See para. 5.7 of Part I.

- 9 As rightly mentioned, the original EDP objectives were valid, but the specific targets were not achieved within the time frame partly due to loss of several experienced staff in PRODATA. The replacement needs more time to attain the level of efficiency and expertise required. 1/

2.2. Part I: Project Review From The Bank's Perspective  
Item In PCR

- 4.4 FELDA's management engaged consultants to assist in the development and implementation of improved management, financial and computer systems. However, the consultants' contract expired before full implementation of the proposal.
- 5.7 The software package for Felda general accounting was acquired. However, this was found to be unsuitable for Felda's applications, and thus in-house system was designed to meet the requirements. 2/
- 6.3 The statement that Felda preferred to use the Government funds on concessional terms rather than Bank funds was quite inaccurate. The loan amount was reduced twice; in the first instance due to lower estimated project costs and secondly due to higher cost of borrowing. As a result of the second reduction, two mills were excluded, thus limiting the loan to six mills only. To reduce the burden of high cost of borrowing i.e. variable interest rates, commitment charges and foreign exchange risks, FELMIL is forced to resort to FELDA for its funds. Similarly the two mills excluded from the project were financed out of FELDA own sources and not from Government funds.

The Bank's presentation of the mill component of the loan is satisfactory. However there were changes in the number of mills and processing capacity in the course of implementation, because, as borrowers, we are guided by the cost of funds and our expectation of crop yield at that point in time. In retrospect, we are of the view that these changes have added to the cost effectiveness of the project.

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1/ See para. 7 of Evaluation Summary.

2/ See para. 5.8 of Part II.

The issue of the relatively high cost of funds has been raised with the Bank's staff in the course of our discussions with them and we consider this as an issue which the Bank may wish to reexamine.

- 9 The statement that FELDA's top management was apparently not informed in time about the implications of the loan and FELDA's Board was therefore, initially reluctant to approve the loan is inaccurate. FELDA's Board approved the loan on the 28th. March 1985 with the decision that the management negotiated certain terms in the loan agreement with the Federal Treasury. The terms to be negotiated included the commitment charge, appointment of consultants, conditions of transfer agreement and the loan amount in view of high cost of borrowing. However, the decision from Federal Treasury on the above terms was only received in late April, 1985. Subsequently the Letter of Authority for the Ambassador for Malaysia to U.S.A to sign the Loan Agreement on behalf of FELDA was issued on 17th. May 1985. In fact, FELDA's top management and FELDA's Board were fully aware of the implications of the loan and were taking necessary steps to minimise problems arising from the high cost of borrowing.

### 3. Evaluation of Bank's Performance

The Bank made positive contributions which led to the successful completion of the project. The following observations sum up Bank's performance;

- i) The time-slice concept of this loan has provided flexibility in project implementation and has greatly expedited loan disbursement.
- ii) The Bank had extended valuable assistance to help improve FELDA financial system. Through the various discussions held with Bank's supervision missions, Felda become more sensitive towards the need for institutional development.

iii) As mentioned in the PCR, inclusion of the EDP in the Project was very timely. However, we are of the opinion that the Bank has over emphasised it's concern in the EDP. At the time of Project Appraisal, FELDA Management has already appointed a consulting firm for development and implementation of improved management, financial and computer systems. The formation of PRODATA is proof that we were addressing seriously the EDP issue. We have long identified the necessity of having a DBMS. However as mentioned earlier, the development of DBMS was slow since S38 software does not meet our requirement fully and we have to resort to in-house system development.

#### 4. Evaluation of Governments Performance

The Government had fulfilled it's task as the guarantor of the loan. As cited by the Bank, it helped to resolve difficulties surrounding the loan, follow-up implementations and process loan amendments.

#### 5. Assessment of Effectiveness of Relationship Between the Bank and Government

The relationship between the Bank and the Government has always been excellent. The Bank was supportive of the Government's policy of financial self-sufficiency of public commercial enterprises. However, this objective could not be fully realised since Government loans and grants were still made available to FELDA during project implementations. .

PART III: STATISTICAL INFORMATION

1. Related Bank Loans

Loan Title and Number	Purpose	Year of Approval	Status
Jengka I 533-MA	Land Development of 12,150 ha and Settlement of 2,770 families	1968	Successfully completed. PPAR No. 2122 issued 06/30/78 ISSN 1011-0984
Jengka II 672-MA	Land Development of 12,065 ha and Settlement of 2,770 families	1970	Successfully completed. PPAR No. 3024 issued 07/18/80 ISSN 1011-0984
Jengka III 885-MA	Land Development of 16,475 ha and Settlement of 3,848 families	1973	Successfully completed. PPAR No. 3978 issued 06/18/82 ISSN 1011-0984
Johor Tenggara 967-MA	Land Development of 30,301 ha and Settlement of 7,500 families	1974	Successfully completed. PPAR No.4221 issued 12/13/82
Keratong 1044-MA	Land Development of 20,960 ha and Settlement of 5,100 families	1974	Successfully completed. PPAR No. 5780 issued 06/85
FELDA VI 1590-MA	Land Development of 28,300 ha and Settlement of 7,400 families	1978	Successfully completed. PCR issued 10/30/87

Land Settlement Infrastructure 2642-MA	Construction of access and village roads and water supply facilities for FELDA schemes comprising 105,000 ha and some 26,000 settler families	1985	In progress; behind schedule.
Sabah Land Settlement and Environmental Management 3039-MA	Complete Agricultural development of 61,000 ha and settlement of 3,560 families, and protection of a 120,500 ha Wildlife Reserve	1989	Agriculture and infrastructure works are progressing satisfactorily. Settler emplacement is delayed. Environmental component is proceeding satisfactorily



2. Project Timetable

Item	Date Planned	Date Actual
Identification		03/83
Preparation	06/83-10/83	06/83-10/83
Appraisal Mission <u>1/</u>	01/84	06/84
Loan Negotiations <u>2/</u>		02/04/85
Board Approval <u>3/</u>	03/19/85	05/07/85
Loan Signature		06/14/85
Loan Effectiveness <u>4/</u>	09/17/85	10/28/85
Closing Date	06/30/91	06/30/91
Completion Date	12/31/90	12/31/90

- 1/ As reflected in the Decision Memorandum, the Loan Committee agreed that in view of the advanced institutional development of FELDA, the Bank contribution was necessarily rather limited. The Loan Committee also decided that FELDA/FELMILL should be required to pay to GOM a 1% guarantee fee above loan charges. However, this fee was not acceptable to GOM and was dropped during negotiations.
- 2/ During negotiations, computer equipment financing was excluded because FELDA preferred financing such expenditures out of GOM grants. It was also agreed to drop the proposed 1% loan guarantee fee.
- 3/ Board presentation was delayed because FELDA's Board was reluctant to borrow the loan directly from the Bank and pass it on to FELMILL, assuming the full cost of borrowing and foreign exchange risk.
- 4/ The date of Loan effectiveness was extended once due to a delay in finalizing the FELDA/FELMILL transfer agreement.

3. Cumulative Estimated and Actual Loan Disbursements  
US\$Million

<u>FY</u>	<u>Quarter</u>	<u>Appraisal Estimate</u>	<u>Actual</u>	<u>Actual as % of Estimate</u>
86	Dec 31, 1985		.9	
	Mar 31, 1986		1.3	
	Jun 30, 1986	1.9	2.4	125
87	Sep 30, 1986	2.8	3.9	139
	Dec 31, 1986	3.8	4.6	121
	Mar 31, 1987	5.6	5.7	102
	Jun 30, 1987	7.7	6.8	88
88	Sep 30, 1987	9.6	8.1	84
	Dec 31, 1987	11.5	9.2	80
	Mar 31, 1988	13.4	9.7	72
	Jun 30, 1988	15.3	10.2	67
89	Sep 30, 1988	17.2	10.6	62
	Dec 31, 1988	19.2	11.1	58
	Mar 31, 1989	20.8	11.7	56
	Jun 30, 1989	22.4	12.0	54
90	Sep 30, 1989	24.0	12.9	54
	Dec 31, 1989	25.7	14.1	55
	Mar 31, 1990	26.9	15.0	56
	Jun 30, 1990	28.2	16.8	60
91	Sep 30, 1990	29.7	17.1	58
	Dec 31, 1990	31.2	17.9	57

The date of the last disbursement was December 10, 1990. Loan cancellations amounted to US\$13.3 million. The reduced loan amount was fully disbursed.

4. Project Implementation

<u>Indicators</u>	<u>Appraisal Estimate</u>	<u>Actual or PCR Estimate</u>
<b>I. Mill Construction</b>		
<b>ULU BELITONG</b>		
ffb-ton/hour (no of lines)	54 (2)	54 (2)
Start construction date	01/01/84	09/15/84
Commissioning date	06/30/87	08/23/86
<b>SIMPANG WA HA</b>		
ffb-ton/hour (no of lines)	54 (2)	27 (1)
Start Construction date	01/01/85	08/26/86
Commissioning date	06/30/87	11/17/87
<b>PALONG TIMUR (SERTING HILIR)</b>		
ffb-ton/hour (no. of lines)	54 (2)	54 (2)
Start Construction date	01/01/86	11/01/85
Commissioning date	06/30/88	08/10/87
<b>PAPULUT</b>		
ffb-ton/hour (no. of lines)	27 (1)	
Start Construction date	01/01/86	Dropped
Commissioning date	06/30/88	
<b>SAHABAT A</b>		
ffb-ton/hour (no. of lines)	54 (2)	54 (2)
Start Construction date	03/01/84	03/15/85
Commissioning date	06/30/86	03/14/87
<b>SAHABAT B</b>		
ffb-ton/hour (no. of lines)	54 (2)	54 (2)
Start Construction date	01/01/87	04/04/88
Commissioning date	06/30/89	05/15/90
<b>KALABAKAN</b>		
ffb-ton/hour (no. of lines)	54 (2)	27 (1)
Start Construction date	01/01/87	11/10/87
Commissioning date	06/30/89	01/15/90
<b>SUMMARY OF PROJECT MILLS</b>		
ffb-ton/hour (no. of mills)	351 (7)	270 (6)
Start Construction date	01/01/84	09/15/84
Commissioning date	06/30/89	05/15/90
Data Base Program	12/31/86	12/92
Hardware Purchase <u>1/</u>	12/31/88	1988

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1/ Hardware purchases and consulting services were not financed under the Loan.

5. Project Cost and Financing

A. Project Cost  
(US\$Million)

<u>Item</u>	<u>Appraisal Estimate</u>			<u>Actual</u>		
	<u>Local Costs</u>	<u>Foreign Exchange</u>	<u>Total</u>	<u>Local Costs</u>	<u>Foreign Exchange</u>	<u>Total</u>
Palm Oil Mills	25.9	26.0	51.9	18.1	19.1	37.2
EDP	0.0	0.2	0.2	0.0	0.6	0.6
Base Cost	25.9	26.2	52.1	18.1	19.7	37.8
Contingencies						
Physical	0.5	0.5	1.0			
Price	4.5	4.5	9.0			
Total Contingencies	5.0	5.0	10.0			
Total Project	30.9	31.2	62.1	18.1	19.7	37.8

B. Project Financing  
(US\$Million)

<u>Source</u>	<u>Planned</u>	<u>Revised</u>	<u>Final</u>
IBRD			
Palm Oil Mills	30.9	17.9	17.9
EDP	0.3	0.0	0.0
Total IBRD	31.2	17.9	17.9
FELDA			
Palm Oil Mills	30.9	19.3	19.3
EDP	0.0		0.6
Total FELDA	62.1	19.9	19.9
Total Project	62.1	37.8	37.8

6. Project Results

A. Direct Benefits

<u>Indicators</u>	<u>Appraisal Estimate at Full Development</u>	<u>Estimated at Closing Date 1/ Full Development</u>	<u>PCR Estimate at Full Development</u>
Full Development Year	1992		1995
Number of Mills	7	6	6
Installed Milling Capacity ffb-ton/hour 2/	351	270	270
<u>Yearly Output</u>			
FFB ton processed ('000)	1,139	721	1,040
Palm oil ton ('000)	228	141	208
Palm kernel ton ('000)	46	35	57
Production Value			
In 1984-US\$000 3/	114	84	111
In 1990-US\$000 4/	131	36	74
Hectares Served	52,600	33,300	49,500
Settler families Served	13,000	n.a.	9,200
Permanent jobs in factories	750	750	750

1/ Estimates at December 31,1990

2/ Installed milling capacity reflects expected design throughput per hour of operation. Actual mill throughput depends on the time that the mill operates.

3/ Value calculated on the basis of IBRD Price Projections of 1984

4/ Value calculated on the basis of July 1991 IBRD Price Projections

B. Economic Impact

	<u>Appraisal Estimate</u>	<u>PCR Estimate</u>
<u>Economic Rate of Return</u>		
All Project Mills	16%	13%
Ulu Belitong Mill	n.a.	11%
Simpang Wa Ha Mill	n.a.	16%
Serting Hilir Mill	n.a.	19%
Sahabat A Mill	n.a.	10%
Sahabat B Mill	n.a.	13%
Kalabakan Mill	n.a.	11%
<u>Underlying Assumptions</u>		
Export Duty Oil	8%	0%
Export Duty Kernel	5%	0%
Physical Contingencies on civil works	5%	n.a.
Physical Contingencies on consultants	10%	n.a.
Bank Commodity price projections of Prices in constant US\$ of	10/84 1984	07/91 1990

C. Financial Impact

	<u>Appraisal Estimate</u>	<u>Current Estimate</u>
<u>Financial Rate of Return</u>	14%	11%

7. Status of Covenants

<u>Section of the Loan Agreement</u>	<u>Covenant</u>	<u>Status of Compliance</u>
3.02(i)	The Borrower to employ consultants to review FELDA fruit harvesting practices and FELMILL operations by December 31, 1985.	Consultants for mill operations were employed. FELDA/FELMILL continued to monitor ffb harvesting practices closely, but specific consultants were not employed to review this issue. FELDA is now imposing a surcharge on the settlers to improve handling of ffb.
3.02(ii)	The Borrower to employ consultant to develop a data-based computer system by December 31, 1985.	Complied with.
3.06	FELDA to ensure that the execution of the Project and the operation of the Palm Oil Mills are carried out with due regard to appropriate ecological and environmental factors in accordance with standards prescribed from time to time by GOM.	FELDA and FELMILL strictly adhere to the Department of Environment provisions on water effluent quality.
3.07 and Schedule 5 Section A	FELDA shall prepare and carry out the construction of each mill in accordance with implementation guidelines satisfactory to the Bank, including the review of justification and construction timing in light of updated oil palm crop projections and corresponding milling requirements.	This covenant was substantially complied with. A mill was excluded from the project and the capacity of two others was reduced because ffb production of the schemes they served was lower than originally projected.

Section of  
the Loan  
Agreement

Covenant

Status of Compliance

3.08	After construction and commissioning, FELDA shall transfer Project mills to FELMILL in accordance with a transfer agreement to be entered between FELDA and FELMILL under terms and conditions satisfactory to the Bank.	Complied with.
Schedule 5 Section B1	FELDA shall transfer Project mills to FELMILL at cost. FELDA shall receive 25% of mill costs as equity in FELMILL; FELMILL shall repay the 75% balance of the cost to FELDA in accordance with terms and conditions acceptable to the Bank, including: (i) same interest rate as that of the Bank loan to FELDA; (ii) 15 years repayment period; and (iii) FELMILL to bear foreign exchange risk.	Complied with. Overall FELMILL debt equity ratio is: 1.3:1 (57% Loan; 43% Equity) reflecting a sound and strong financial base.
5.01 and 5.02	FELDA shall maintain and cause FELMILL to maintain accounts and have them audited and copies sent to the Bank in accordance with Bank standard requirements.	FELDA and FELMILL have well established accounting systems and their annual accounts and financial statements are audited by private auditors for the Auditor General. Although sometimes delayed, accounts and satisfactory audit reports were sent to the Bank every year.
Schedule 5 Section B3	FELMILL to make periodic revisions of palm oil processing fees to ensure adequate cover of operating costs and returns to FELMILL.	Complied with. Processing fees have been revised downwards reflecting lower operating costs due to increasing mill capacity utilization.



8. Use of Bank Resources

A. Staff Inputs (Staff-Weeks)

<u>STAGE OF PROJECT CYCLE</u>	<u>TOTAL</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY89</u>	<u>FY91</u>	<u>FY92</u>
Ident./Preparation	23.1	4.1	19.0								
Appraisal	24.6		4.3	20.3							
Negotiations/Board	5.1			5.1							
Supervision	52.4			0.4	19.9	11.0	4.4	5.8	8.3	2.6	
Completion	6.1									0.1	6.0
<b>TOTAL:</b>	<b><u>111.3</u></b>	<b><u>4.1</u></b>	<b><u>23.3</u></b>	<b><u>25.8</u></b>	<b><u>19.9</u></b>	<b><u>11.0</u></b>	<b><u>4.4</u></b>	<b><u>5.8</u></b>	<b><u>8.3</u></b>	<b><u>2.7</u></b>	<b><u>6.0</u></b>

\* Planned data not available.

8. Use of Bank Resources

B. Missions

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<u>Stage of Project Cycle</u>	<u>Mo/Year</u>	<u>Number of Persons</u>	<u>Man-days in Field</u>	<u>Specialties</u>	<u>Performance Rating Status</u>
<b>Through Appraisal</b>					
Identification	02/83	1	5	A	n.a.
Preparation	06/83	3	18	A/B/C	n.a.
Preappraisal	11/83	3	30	A/D/C	n.a.
<b>Appraisal</b>					
Post-Appraisal	06/84	2	28	A/D	n.a.
	01/85	2	5	A/E	n.a.
<b>Supervision</b>					
Supervision 1	09/85	2	10	A/C	1
Supervision 2 <u>1/</u>	02/86	2	4	A/B	1
Supervision 3 <u>1/</u>	06/86	2	5	A/B	1
Supervision 4	02/87	3	15	A/B/C	1
Supervision 5 <u>1/</u>	03/88	1	2	A	1
Supervision 6	06/89	2	5	A/F	1
Supervision 7	06/90	3	21	A/B/F	1
<b>Completion <u>2/</u></b>					
	07/91	1	5	D	

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**SPECIALTY:** A = Rural Development Engineer  
 B = Financial Analyst  
 C = Mechanical Engineer/Palm Oil Mill Specialist  
 D = Financial Management Specialist  
 E = Agricultural Economist  
 F = Tree Crops Specialist

**PERFORMANCE RATING:** 1 = No problems 2 = Minor problems 3 = Major problems

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1/ Brief follow-up missions carried out concurrently with other operational work in Malaysia.

2/ This mission was for evaluating the EDP component only. PCR preparation was initiated during the final supervision mission in June 1990.

MALAYSIA  
 FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)

Mills Construction Costs  
 (M\$'000)

	1984	1985	1986	1987	1988	1989	1990	1991	Total Cost	F.E. %	Local Cost	Foreign Component
<b>Ulu Belitong</b>												
Civil Works	518	3232	1687	224					5662	47	3001	2661
M. & E. Works		1175	2572	643					4390	57	1888	2503
Equipment	295	2179	748	324					3546	58	1489	2057
Eng. & Sup.	20	165	125	30					340	5	323	17
<b>Total</b>	<b>833</b>	<b>6751</b>	<b>5132</b>	<b>1221</b>					<b>13938</b>	<b>52</b>	<b>6701</b>	<b>7237</b>
<b>Simpang Wa Ha</b>												
Civil Works			306	3491	1434	168			5399	47	2861	2538
M. & E. Works				2376	359	144			2878	57	1238	1641
Equipment				2314	246	121			2681	58	1126	1555
Eng. & Sup.			8	205	51	11			274	5	260	14
<b>Total</b>			<b>314</b>	<b>8385</b>	<b>2089</b>	<b>444</b>			<b>11232</b>	<b>51</b>	<b>5485</b>	<b>5747</b>
<b>Serting Hilir</b>												
Civil Works			2025	2788	464	75			5352	47	2837	2516
M. & E. Works			572	3127	537	171			4407	57	1895	2512
Equipment				3446	228	420			4094	58	1720	2375
Eng. & Sup.			65	234	31	17			346	5	329	17
<b>Total</b>			<b>2662</b>	<b>9596</b>	<b>1259</b>	<b>683</b>			<b>14200</b>	<b>52</b>	<b>6780</b>	<b>7420</b>
<b>Sahabat A</b>												
Civil Works	3270	953	3112	2678	341				10353	47	5487	4866
M. & E. Works			4305	733	285				5323	57	2289	3034
Equipment	32	33	2903	341	209				3518	58	1478	2041
Eng. & Sup.	83	25	258	94	21				480	5	456	24
<b>Total</b>	<b>3384</b>	<b>1011</b>	<b>10579</b>	<b>3846</b>	<b>856</b>				<b>19675</b>	<b>51</b>	<b>9710</b>	<b>9965</b>
<b>Sahabat B</b>												
Civil Works					1424	4761	3479	441	10105	47	5356	4749
M. & E. Works						4926	1226	363	6514	57	2801	3713
Equipment				712	1330	1502	288		3832	58	1609	2222
Eng. & Sup.				53	275	155	27		511	5	486	26
<b>Total</b>					<b>2190</b>	<b>11293</b>	<b>6362</b>	<b>1118</b>	<b>20963</b>	<b>51</b>	<b>10252</b>	<b>10711</b>

MALAYSIA  
 FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)

Mills Construction Costs  
 (M\$'000)

	1984	1985	1986	1987	1988	1989	1990	1991	Total Cost	F.E. %	Local Cost	Foreign Component
<b>Kalabakan</b>												
Civil Works				691	2938	2783	1503		7915	47	4195	3720
M. & E. Works						3870	1131	81	5082	57	2185	2897
Equipment					406	1500	980	88	2973	58	1249	1724
Eng. & Sup.				17	84	204	90	4	399	5	379	20
<b>Total</b>				<b>708</b>	<b>3428</b>	<b>8356</b>	<b>3704</b>	<b>173</b>	<b>16370</b>	<b>51</b>	<b>8009</b>	<b>8362</b>
<b>Total Six Mills</b>												
Civil Works	3788	4185	7131	9872	6601	7787	4982	441	44787	47	23737	21050
M. & E. Works		1175	7449	6879	1181	9111	2357	444	28596	57	12296	16300
Equipment	326	2213	3651	6426	1801	3371	2481	375	20645	58	8671	11974
Eng. & Sup.	103	189	456	579	240	507	246	32	2351	5	2233	118
<b>Total</b>	<b>4217</b>	<b>7762</b>	<b>18687</b>	<b>23757</b>	<b>9822</b>	<b>20776</b>	<b>10066</b>	<b>1292</b>	<b>96378</b>	<b>51</b>	<b>46937</b>	<b>49441</b>

FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)

YEARS	Mills Production												
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	99-07
	----- Actual -----				----- Projected -----								
<b>FFB Processed (ton'000)</b>													
Ulu Belitong	68	89	104	137	135	180	180	170	170	160	160	160	160
Simpang Wa Ha	4	96	110	118	140	130	130	130	130	120	120	120	120
Serting Hilir	43	125	185	113	200	200	200	200	200	200	200	200	200
Sahabat A	19	41	130	200	244	200	210	210	210	210	210	210	210
Sahabat B				79	160	180	190	190	200	200	200	200	200
Kalabakan				74	110	130	130	130	130	130	130	130	130
<b>Total</b>	<b>134</b>	<b>351</b>	<b>529</b>	<b>721</b>	<b>989</b>	<b>1020</b>	<b>1040</b>	<b>1030</b>	<b>1040</b>	<b>1020</b>	<b>1020</b>	<b>1020</b>	<b>1020</b>
<b>CPO Production (ton'000)</b>													
Ulu Belitong	15	18	22	28	28	36	36	34	34	32	32	32	32
Simpang Wa Ha	0	21	23	24	29	26	26	26	26	24	24	24	24
Serting Hilir	9	25	37	22	41	40	40	40	40	40	40	40	40
Sahabat A	0	8	25	38	48	40	42	42	42	42	42	42	42
Sahabat B	0	0	0	14	30	36	38	38	40	40	40	40	40
Kalabakan	0	0	0	15	22	26	26	26	26	26	26	26	26
<b>Total</b>	<b>23</b>	<b>72</b>	<b>106</b>	<b>141</b>	<b>199</b>	<b>204</b>	<b>208</b>	<b>206</b>	<b>208</b>	<b>204</b>	<b>204</b>	<b>204</b>	<b>204</b>
<b>Kernel Production (ton'000)</b>													
Ulu Belitong	4	5	6	8	8	10	10	9	9	9	9	9	9
Simpang Wa Ha	0	6	7	7	8	7	7	7	7	7	7	7	7
Serting Hilir	2	6	9	6	11	11	11	11	11	11	11	11	11
Sahabat A	0	2	5	9	11	11	12	12	12	12	12	12	12
Sahabat B	0	0	0	2	7	10	10	10	11	11	11	11	11
Kalabakan	0	0	0	2	5	7	7	7	7	7	7	7	7
<b>Total</b>	<b>6</b>	<b>19</b>	<b>28</b>	<b>35</b>	<b>50</b>	<b>56</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>56</b>	<b>56</b>	<b>56</b>	<b>56</b>
<b>CPO Extraction (%)</b>													
Ulu Belitong	21.3	20.8	20.8	20.3	20.9	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Simpang Wa Ha	0.0	21.4	20.6	20.1	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Serting Hilir	20.7	19.8	19.8	19.4	20.4	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Sahabat A	0.0	19.9	19.4	19.2	19.5	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Sahabat B				18.0	19.0	2.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Kalabakan				20.1	20.4	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
<b>Total</b>	<b>17.5</b>	<b>20.5</b>	<b>20.1</b>	<b>19.6</b>	<b>20.1</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>	<b>20.0</b>
<b>Kernel Extraction (%)</b>													
Ulu Belitong	5.6	5.4	5.4	6.1	5.7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Simpang Wa Ha	0.0	6.2	6.5	6.1	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Serting Hilir	5.0	5.1	5.1	5.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Sahabat A	0.0	3.8	4.0	4.5	4.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Sahabat B				3.0	4.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Kalabakan				3.2	4.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
<b>Total</b>	<b>4.4</b>	<b>5.3</b>	<b>5.2</b>	<b>4.9</b>	<b>5.1</b>	<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>5.5</b>

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**

**Mills Processing Costs**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	Actual				Projected								
<b>I. MILLS AVERAGE (M\$/ffb-ton)</b>													
<b>Ulu Belitong</b>													
Variable Cost	4.82	4.00	4.15	3.13	2.87	2.87	3.01	3.01	3.16	3.16	3.32	3.32	3.49
Spare Parts/Maintenance	2.45	2.65	3.86	3.63	5.25	5.25	5.51	5.51	5.79	5.79	6.08	6.08	6.38
Fixed cost	5.00	4.68	3.91	3.96	4.78	3.59	3.77	3.99	4.19	4.45	4.67	4.67	4.90
H.Q. Ind. Cost	4.06	2.77	3.00	2.51	2.58	1.94	2.03	2.15	2.26	2.40	2.52	2.52	2.65
Fin. Charge & Deprec.	37.45	28.33	20.02	13.79	14.07	10.10	9.69	9.87	9.51	9.77	9.47	9.19	9.19
<b>Total</b>	<b>53.78</b>	<b>42.43</b>	<b>34.94</b>	<b>27.03</b>	<b>29.55</b>	<b>23.75</b>	<b>24.01</b>	<b>24.53</b>	<b>24.91</b>	<b>25.57</b>	<b>26.06</b>	<b>25.79</b>	<b>26.62</b>
<b>Bukit Wa Ha</b>													
Variable Cost		3.92	3.95	3.54	3.38	3.38	3.55	3.55	3.73	3.73	3.91	3.91	4.11
Spare Parts/Maintenance		1.94	3.18	3.37	4.98	4.98	5.23	5.23	5.49	5.49	5.76	5.76	6.05
Fixed cost		3.22	3.25	3.93	3.23	3.48	3.65	3.65	3.83	4.15	4.36	4.36	4.58
H.Q. Ind. Cost		2.55	1.41	1.50	1.38	1.49	1.56	1.56	1.64	1.78	1.87	1.87	1.96
Fin. Charge & Deprec.		18.19	11.64	11.16	10.58	10.90	10.45	10.05	9.70	10.15	9.84	7.55	7.55
<b>Total</b>		<b>29.82</b>	<b>23.43</b>	<b>23.50</b>	<b>23.55</b>	<b>24.23</b>	<b>24.45</b>	<b>24.05</b>	<b>24.39</b>	<b>25.31</b>	<b>25.74</b>	<b>23.45</b>	<b>24.25</b>
<b>Serting Hilir</b>													
Variable Cost	4.92	3.98	3.16	4.25	2.68	2.68	2.81	2.81	2.95	2.95	3.10	3.10	3.26
Spare Parts/Maintenance	1.44	1.86	3.47	5.90	4.60	4.60	4.83	4.83	5.07	5.07	5.33	5.33	5.60
Fixed cost	3.69	3.05	2.89	5.97	3.48	3.48	3.65	3.65	3.83	3.83	4.03	4.03	4.23
H.Q. Ind. Cost	2.70	1.96	1.68	3.05	1.74	1.74	1.83	1.83	1.92	1.92	2.02	2.02	2.12
Fin. Charge & Deprec.	25.40	17.86	10.67	17.08	9.91	9.47	9.08	8.72	8.40	8.11	7.85	7.62	7.62
<b>Total</b>	<b>38.15</b>	<b>28.71</b>	<b>21.87</b>	<b>36.25</b>	<b>22.42</b>	<b>21.98</b>	<b>22.20</b>	<b>21.84</b>	<b>22.18</b>	<b>21.89</b>	<b>22.32</b>	<b>22.09</b>	<b>22.81</b>
<b>Sahabat A</b>													
Variable Cost		6.96	4.50	6.40	5.34	5.34	5.61	5.61	5.89	5.89	6.18	6.18	6.49
Spare Parts/Maintenance		5.86	5.39	10.24	4.80	4.80	5.04	5.04	5.29	5.29	5.56	5.56	5.84
Fixed cost		9.11	4.52	3.40	2.86	3.48	3.48	3.48	3.66	3.66	3.84	3.84	4.03
H.Q. Ind. Cost		5.97	2.40	1.72	1.43	1.74	1.74	1.74	1.83	1.83	1.92	1.92	2.02
Fin. Charge & Deprec.		85.03	22.44	12.76	10.36	12.05	10.98	10.54	10.14	9.78	9.46	9.16	9.16
<b>Total</b>		<b>112.9</b>	<b>39.25</b>	<b>34.52</b>	<b>24.79</b>	<b>27.41</b>	<b>26.86</b>	<b>26.41</b>	<b>26.81</b>	<b>26.45</b>	<b>26.96</b>	<b>26.67</b>	<b>27.54</b>

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**

**Mills Processing Costs**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	----- Actual -----				----- Projected -----								
<b>I. MILLS AVERAGE (M\$/ffb-ton)</b>													
<b>Sahabat B</b>													
Variable Cost				6.87	4.83	4.83	5.07	5.07	5.33	5.33	5.59	5.59	5.87
Spare Parts/Maintenance				3.51	4.47	4.47	4.69	4.69	4.93	4.93	5.17	5.17	5.43
Fixed cost				4.93	4.17	3.71	3.69	3.69	3.68	3.68	3.86	3.86	4.06
H.Q. Ind. Cost				3.13	2.42	2.15	2.14	2.14	2.14	2.14	2.24	2.24	2.36
Fin. Charge & Deprec.				35.23	17.16	14.53	13.15	12.59	11.48	11.06	10.67	10.32	10.32
<b>Total</b>				<b>53.67</b>	<b>33.06</b>	<b>29.69</b>	<b>28.74</b>	<b>28.18</b>	<b>27.56</b>	<b>27.13</b>	<b>27.54</b>	<b>27.19</b>	<b>28.03</b>
<b>Kalabakan</b>													
Variable Cost				5.94	5.85	5.85	6.14	6.14	6.45	6.45	6.77	6.77	7.11
Spare Parts/Maintenance				2.07	4.01	4.01	4.21	4.21	4.42	4.42	4.64	4.64	4.87
Fixed cost				5.42	3.68	3.11	3.27	3.27	3.43	3.43	3.60	3.60	3.78
H.Q. Ind. Cost				4.64	1.76	1.49	1.56	1.56	1.64	1.64	1.73	1.73	1.81
Fin. Charge & Deprec.				39.70	17.83	14.68	14.32	14.00	13.71	13.44	13.21	12.99	12.99
<b>Total</b>				<b>57.76</b>	<b>33.13</b>	<b>29.15</b>	<b>29.50</b>	<b>29.18</b>	<b>29.65</b>	<b>29.39</b>	<b>29.94</b>	<b>29.73</b>	<b>30.57</b>
<b>II. MILLS TOTAL (M\$'000)</b>													
<b>Ulu Belitong</b>													
Variable Cost	329	354	431	428	388	517	542	512	537	506	531	531	558
Spare Parts/Maintenance	167	235	401	497	709	945	992	937	984	926	973	973	1021
Fixed cost	342	415	407	542	646	646	678	678	712	712	747	747	785
H.Q. Ind. Cost	278	245	312	344	349	349	366	366	385	385	404	404	424
Fin. Charge & Deprec.	2559	2510	2081	1887	1901	1819	1744	1678	1618	1563	1515	1471	1471
<b>Total</b>	<b>3675</b>	<b>3759</b>	<b>3632</b>	<b>3697</b>	<b>3992</b>	<b>4275</b>	<b>4322</b>	<b>4170</b>	<b>4235</b>	<b>4092</b>	<b>4170</b>	<b>4126</b>	<b>4259</b>
<b>Bukit Wa Ha</b>													
Variable Cost		377	435	418	473	439	462	462	485	448	469	469	493
Spare Parts/Maintenance		187	350	398	697	647	680	680	714	659	691	691	726
Fixed cost		310	358	465	452	452	475	475	499	499	523	523	550
H.Q. Ind. Cost		245	155	178	194	194	203	203	214	214	224	224	236
Fin. charges and Dep.		1751	1282	1319	1481	1417	1359	1307	1260	1218	1181	906	906
<b>Total</b>		<b>2870</b>	<b>2581</b>	<b>2778</b>	<b>3297</b>	<b>3149</b>	<b>3178</b>	<b>3126</b>	<b>3171</b>	<b>3037</b>	<b>3089</b>	<b>2814</b>	<b>2909</b>

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**

**Mills Processing Costs**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	Actual				Projected								
<b>II. MILLS TOTAL (M\$'000)</b>													
<b>Serting Hilir</b>													
Variable Cost	210	496	585	479	536	536	562	562	590	590	620	620	651
Spare Parts/Maintenance	62	232	642	666	920	920	966	966	1014	1014	1066	1066	1119
Fixed cost	158	380	535	674	696	696	730	730	767	767	805	805	845
H.Q. Ind. Cost	115	244	311	344	349	349	366	366	385	385	404	404	424
Fin. charges and Dep.	1086	2227	1974	1926	1983	1895	1816	1744	1680	1622	1570	1523	1523
<b>Total</b>	<b>1632</b>	<b>3580</b>	<b>4046</b>	<b>4089</b>	<b>4483</b>	<b>4395</b>	<b>4440</b>	<b>4369</b>	<b>4435</b>	<b>4377</b>	<b>4465</b>	<b>4418</b>	<b>4563</b>
<b>Sahabat A</b>													
Variable Cost		286	584	1279	1301	1068	1178	1178	1237	1237	1298	1298	1363
Spare Parts/Maintenance		240	699	2047	1169	960	1058	1058	1111	1111	1168	1168	1226
Fixed cost		1136	836	679	696	696	731	731	768	768	806	806	847
H.Q. Ind. Cost		745	444	344	349	349	366	366	385	385	404	404	424
Fin. charges and Dep.		10604	4152	2550	2525	2410	2306	2213	2129	2054	1986	1925	1925
<b>Total</b>		<b>13011</b>	<b>6715</b>	<b>6899</b>	<b>6040</b>	<b>5483</b>	<b>5640</b>	<b>5547</b>	<b>5629</b>	<b>5554</b>	<b>5661</b>	<b>5600</b>	<b>5784</b>
<b>Sahabat B</b>													
Variable Cost				542	773	869	963	963	1066	1066	1118	1118	1174
Spare Parts/Maintenance				277	715	805	891	891	986	986	1034	1034	1086
Fixed cost				389	667	667	701	701	736	736	773	773	811
H.Q. Ind. Cost				247	388	388	407	407	427	427	449	449	471
Fin. charges and Dep.				2777	2746	2615	2498	2392	2297	2211	2134	2065	2065
<b>Total</b>				<b>4230</b>	<b>5289</b>	<b>5344</b>	<b>5460</b>	<b>5354</b>	<b>5512</b>	<b>5426</b>	<b>5507</b>	<b>5438</b>	<b>5606</b>
<b>Kalabakan</b>													
Variable Cost				441	644	761	798	798	839	839	880	880	924
Spare Parts/Maintenance				154	441	521	547	547	575	575	603	603	633
Fixed cost				402	405	405	425	425	446	446	468	468	492
H.Q. Ind. Cost				344	194	194	203	203	214	214	224	224	236
Fin. charges and Dep.				2945	1961	1909	1862	1820	1782	1748	1717	1689	1689
<b>Total</b>				<b>4285</b>	<b>3644</b>	<b>3789</b>	<b>3836</b>	<b>3793</b>	<b>3855</b>	<b>3820</b>	<b>3893</b>	<b>3865</b>	<b>3974</b>



**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**

**Mills Processing Costs**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	----- Actual -----				----- Projected -----								
<b>III. SUMMARY OF PROCESSING COSTS</b>													
<b>Total by Major Item (M\$'000)</b>													
Variable Cost	540	1513	2035	3587	4114	4190	4505	4475	4754	4685	4916	4916	5162
Spare Parts/Maintenance	229	894	2093	4037	4652	4798	5135	5079	5384	5271	5535	5535	5812
Fixed cost	500	2241	2135	3150	3562	3562	3739	3739	3927	3927	4123	4123	4329
H.Q. Ind. Cost	393	1480	1222	1800	1821	1821	1912	1912	2008	2008	2108	2108	2214
Fin. charges and Dep.	3646	17091	9489	13567	12596	12064	11585	11154	10765	10416	10102	9578	9578
<b>Total</b>	<b>5307</b>	<b>23219</b>	<b>16975</b>	<b>26141</b>	<b>26745</b>	<b>26435</b>	<b>26876</b>	<b>26359</b>	<b>26837</b>	<b>26306</b>	<b>26784</b>	<b>26261</b>	<b>27095</b>
<b>Total by Mill (M\$'000)</b>													
Ulu Belitong	3675	3759	3632	3697	3992	4275	4322	4170	4235	4092	4170	4126	4259
Simpang Wa Ha	0	2870	2581	2778	3297	3149	3178	3126	3171	3037	3089	2814	2909
Serting Hilir	1632	3580	4046	4089	4483	4395	4440	4369	4435	4377	4465	4418	4563
Sahabat A	0	13011	6715	6899	6040	5483	5640	5547	5629	5554	5661	5600	5784
Sahabat B	0	0	0	4230	5289	5344	5460	5354	5512	5426	5507	5438	5606
Kalabakan	0	0	0	4285	3644	3789	3836	3793	3855	3820	3893	3865	3974
<b>Total</b>	<b>5307</b>	<b>23219</b>	<b>16975</b>	<b>25979</b>	<b>26745</b>	<b>26435</b>	<b>26876</b>	<b>26359</b>	<b>26837</b>	<b>26306</b>	<b>26784</b>	<b>26261</b>	<b>27095</b>
<b>Average by Item (M\$/ffb-ton)</b>													
Variable Cost	4.03	4.32	3.85	4.98	4.16	4.11	4.33	4.34	4.57	4.59	4.82	4.82	5.06
Spare Parts/Maintenance	1.71	2.55	3.96	5.60	4.71	4.70	4.94	4.93	5.18	5.17	5.43	5.43	5.70
Fixed cost	3.73	6.39	4.04	4.37	3.60	3.49	3.60	3.63	3.78	3.85	4.04	4.04	4.24
H.Q. Ind. Cost	2.93	4.22	2.31	2.50	1.84	1.79	1.84	1.86	1.93	1.97	2.07	2.07	2.17
Fin. charges and Dep.	27.20	48.76	17.94	18.82	12.74	11.83	11.14	10.93	10.35	10.21	9.90	9.39	9.39
<b>Total</b>	<b>39.60</b>	<b>66.24</b>	<b>32.09</b>	<b>36.27</b>	<b>27.05</b>	<b>25.92</b>	<b>25.84</b>	<b>25.59</b>	<b>25.80</b>	<b>25.79</b>	<b>26.26</b>	<b>25.75</b>	<b>26.56</b>
<b>Average by Mill (M\$/ffb-ton)</b>													
Ulu Belitong	53.78	42.43	34.94	27.03	29.55	23.75	24.01	24.53	24.91	25.57	26.06	25.79	26.62
Simpang Wa Ha		29.82	23.43	23.50	23.55	24.23	24.45	24.05	24.39	25.31	25.74	23.45	24.25
Serting Hilir	38.15	28.71	21.87	36.25	22.42	21.98	22.20	21.84	22.18	21.89	22.32	22.09	22.81
Sahabat A		112.93	39.25	34.52	24.79	27.41	26.86	26.41	26.81	26.45	26.96	26.67	27.54
Sahabat B				53.67	33.06	29.69	28.74	28.18	27.56	27.13	27.54	27.19	28.03
Kalabakan				57.76	33.13	29.15	29.50	29.18	29.65	29.39	29.94	29.73	30.57
<b>Average</b>	<b>39.60</b>	<b>66.24</b>	<b>32.09</b>	<b>36.05</b>	<b>27.05</b>	<b>25.92</b>	<b>25.84</b>	<b>25.59</b>	<b>25.80</b>	<b>25.79</b>	<b>26.26</b>	<b>25.75</b>	<b>26.56</b>

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**  
**Mills Processing Costs**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	----- Projected -----										
<b>I. MILLS AVERAGE (M\$/ffb-ton)</b>											
<b>Ulu Belitong</b>											
Variable Cost	3.49	3.66	3.66	3.84	3.84	4.04	4.04	4.04	3.32	3.32	3.32
Spare Parts/Maintenance	6.38	6.70	6.70	7.04	7.04	7.39	7.39	7.39	6.08	6.08	6.08
Fixed cost	4.90	5.15	5.15	5.41	5.41	5.68	5.68	5.68	4.67	4.67	4.67
H.Q. Ind. Cost	2.65	2.78	2.78	2.92	2.92	3.07	3.07	3.07	2.52	2.52	2.52
Fin. Charge & Deprec.	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.19
Total	26.62	27.49	27.49	28.40	28.40	29.36	29.36	29.36	25.79	25.79	25.79
<b>Bukit Wa Ha</b>											
Variable Cost	4.11	4.31	4.31	4.53	4.53	4.75	4.75	4.75	3.91	3.91	3.91
Spare Parts/Maintenance	6.05	6.35	6.35	6.67	6.67	7.00	7.00	7.00	5.76	5.76	5.76
Fixed cost	4.58	4.81	4.81	5.05	5.05	5.30	5.30	5.30	4.36	4.36	4.36
H.Q. Ind. Cost	1.96	2.06	2.06	2.16	2.16	2.27	2.27	2.27	1.87	1.87	1.87
Fin. Charge & Deprec.	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55
Total	24.25	25.08	25.08	25.96	25.96	26.88	26.88	26.88	23.45	23.45	23.45
<b>Serting Hilir</b>											
Variable Cost	3.26	3.42	3.42	3.59	3.59	3.77	3.77	3.77	3.10	3.10	3.10
Spare Parts/Maintenance	5.60	5.88	5.88	6.17	6.17	6.48	6.48	6.48	5.33	5.33	5.33
Fixed cost	4.23	4.44	4.44	4.66	4.66	4.89	4.89	4.89	4.03	4.03	4.03
H.Q. Ind. Cost	2.12	2.23	2.23	2.34	2.34	2.45	2.45	2.45	2.02	2.02	2.02
Fin. Charge & Deprec.	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62
Total	22.81	23.57	23.57	24.37	24.37	25.21	25.21	25.21	22.09	22.09	22.09
<b>Sahabat A</b>											
Variable Cost	6.49	6.81	6.81	7.15	7.15	7.51	7.51	7.51	6.18	6.18	6.18
Spare Parts/Maintenance	5.84	6.13	6.13	6.44	6.44	6.76	6.76	6.76	5.56	5.56	5.56
Fixed cost	4.03	4.23	4.23	4.44	4.44	4.67	4.67	4.67	3.84	3.84	3.84
H.Q. Ind. Cost	2.02	2.12	2.12	2.23	2.23	2.34	2.34	2.34	1.92	1.92	1.92
Fin. Charge & Deprec.	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Total	27.54	28.46	28.46	29.42	29.42	30.44	30.44	30.44	26.67	26.67	26.67

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**  
**Mills Processing Costs**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	----- Projected -----										
<b><u>I. MILLS AVERAGE (M\$/ffb-ton)</u></b>											
<b>Sahabat B</b>											
Variable Cost	5.87	6.16	6.16	6.47	6.47	6.79	6.79	6.79	7.13	7.13	5.59
Spare Parts/Maintenance	5.43	5.70	5.70	5.98	5.98	6.28	6.28	6.28	5.17	5.17	5.17
Fixed cost	4.06	4.26	4.26	4.47	4.47	4.69	4.69	4.69	3.86	3.86	3.86
H.Q. Ind. Cost	2.36	2.47	2.47	2.60	2.60	2.73	2.73	2.73	2.24	2.24	2.24
Fin. Charge & Deprec.	10.32	10.32	10.32	10.32	10.32	10.32	10.32	10.32	10.32	10.32	10.32
<b>Total</b>	<b>28.03</b>	<b>28.92</b>	<b>28.92</b>	<b>29.85</b>	<b>29.85</b>	<b>30.82</b>	<b>30.82</b>	<b>30.82</b>	<b>28.73</b>	<b>28.73</b>	<b>27.19</b>
<b>Kalabakan</b>											
Variable Cost	7.11	7.46	7.46	7.84	7.84	8.23	8.23	8.23	6.77	6.77	6.77
Spare Parts/Maintenance	4.87	5.12	5.12	5.37	5.37	5.64	5.64	5.64	4.64	4.64	4.64
Fixed cost	3.78	3.97	3.97	4.17	4.17	4.38	4.38	4.38	3.60	3.60	3.60
H.Q. Ind. Cost	1.81	1.90	1.90	2.00	2.00	2.10	2.10	2.10	1.73	1.73	1.73
Fin. Charge & Deprec.	12.99	12.99	12.99	12.99	12.99	12.99	12.99	12.99	12.99	12.99	12.99
<b>Total</b>	<b>30.57</b>	<b>31.45</b>	<b>31.45</b>	<b>32.37</b>	<b>32.37</b>	<b>33.34</b>	<b>33.34</b>	<b>33.34</b>	<b>29.73</b>	<b>29.73</b>	<b>29.73</b>
<b><u>II. MILLS TOTAL (M\$'000)</u></b>											
<b>Ulu Belitong</b>											
Variable Cost	558	586	586	615	615	646	646	646	531	531	531
Spare Parts/Maintenance	1021	1073	1073	1126	1126	1182	1182	1182	973	973	973
Fixed cost	785	824	824	865	865	908	908	908	747	747	747
H.Q. Ind. Cost	424	445	445	467	467	491	491	491	404	404	404
Fin. Charge & Deprec.	1471	1471	1471	1471	1471	1471	1471	1471	1471	1471	1471
<b>Total</b>	<b>4259</b>	<b>4398</b>	<b>4398</b>	<b>4544</b>	<b>4544</b>	<b>4698</b>	<b>4698</b>	<b>4698</b>	<b>4126</b>	<b>4126</b>	<b>4126</b>
<b>Bukit Wa Ha</b>											
Variable Cost	493	517	517	543	543	570	570	570	469	469	469
Spare Parts/Maintenance	726	762	762	800	800	840	840	840	691	691	691
Fixed cost	550	577	577	606	606	636	636	636	523	523	523
H.Q. Ind. Cost	236	247	247	260	260	273	273	273	224	224	224
Fin. Charges and Dep.	906	906	906	906	906	906	906	906	906	906	906
<b>Total</b>	<b>2909</b>	<b>3010</b>	<b>3010</b>	<b>3115</b>	<b>3115</b>	<b>3225</b>	<b>3225</b>	<b>3225</b>	<b>2814</b>	<b>2814</b>	<b>2814</b>

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**  
**Mills Processing Costs**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	----- Projected -----										
<b>II. MILLS TOTAL (M\$'000)</b>											
<b>Serting Hilir</b>											
Variable Cost	651	684	684	718	718	754	754	754	620	620	620
Spare Parts/Maintenance	1119	1175	1175	1234	1234	1296	1296	1296	1066	1066	1066
Fixed cost	845	888	888	932	932	979	979	979	805	805	805
H.Q. Ind. Cost	424	445	445	467	467	491	491	491	404	404	404
Fin. charges and Dep.	1523	1523	1523	1523	1523	1523	1523	1523	1523	1523	1523
Total	4563	4715	4715	4874	4874	5042	5042	5042	4418	4418	4418
<b>Sahabat A</b>											
Variable Cost	1363	1431	1431	1502	1502	1577	1577	1577	1298	1298	1298
Spare Parts/Maintenance	1226	1287	1287	1352	1352	1419	1419	1419	1168	1168	1168
Fixed cost	847	889	889	933	933	980	980	980	806	806	806
H.Q. Ind. Cost	424	445	445	467	467	491	491	491	404	404	404
Fin. charges and Dep.	1925	1925	1925	1925	1925	1925	1925	1925	1925	1925	1925
Total	5784	5977	5977	6179	6179	6392	6392	6392	5600	5600	5600
<b>Sahabat B</b>											
Variable Cost	1174	1233	1233	1294	1294	1359	1359	1359	1427	1427	1118
Spare Parts/Maintenance	1086	1140	1140	1197	1197	1257	1257	1257	1034	1034	1034
Fixed cost	811	852	852	894	894	939	939	939	773	773	773
H.Q. Ind. Cost	471	495	495	519	519	545	545	545	449	449	449
Fin. charges and Dep.	2065	2065	2065	2065	2065	2065	2065	2065	2065	2065	2065
Total	5606	5784	5784	5969	5969	6165	6165	6165	5747	5747	5438
<b>Kalabakan</b>											
Variable Cost	924	970	970	1019	1019	1070	1070	1070	880	880	880
Spare Parts/Maintenance	633	665	665	698	698	733	733	733	603	603	603
Fixed cost	492	516	516	542	542	569	569	569	468	468	468
H.Q. Ind. Cost	236	247	247	260	260	273	273	273	224	224	224
Fin. charges and Dep.	1689	1689	1689	1689	1689	1689	1689	1689	1689	1689	1689
Total	3974	4088	4088	4208	4208	4334	4334	4334	3865	3865	3865

**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (LOAN 2530-MA)**  
**Mills Processing Costs**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	Projected										

**III. SUMMARY OF PROCESSING COSTS**

**Total by Major Item (M\$'000)**

Variable Cost	5162	5420	5420	5691	5691	5976	5976	5976	5225	5225	4916
Spare Parts/Maintenance	5812	6102	6102	6407	6407	6728	6728	6728	5535	5535	5535
Fixed cost	4329	4545	4545	4773	4773	5011	5011	5011	4123	4123	4123
H.Q. Ind. Cost	2214	2324	2324	2441	2441	2563	2563	2563	2108	2108	2108
Fin. charges and Dep.	9578	9578	9578	9578	9578	9578	9578	9578	9578	9578	9578
<b>Total</b>	<b>27095</b>	<b>27971</b>	<b>27971</b>	<b>28890</b>	<b>28890</b>	<b>29856</b>	<b>29856</b>	<b>29856</b>	<b>26570</b>	<b>26570</b>	<b>26261</b>

**Total by Mill (M\$'000)**

Ulu Belitong	4259	4398	4398	4544	4544	4698	4698	4698	4126	4126	4126
Simpang Wa Ha	2909	3010	3010	3115	3115	3225	3225	3225	2814	2814	2814
Serting Hilir	4563	4715	4715	4874	4874	5042	5042	5042	4418	4418	4418
Sahabat A	5784	5977	5977	6179	6179	6392	6392	6392	5600	5600	5600
Sahabat B	5606	5784	5784	5969	5969	6165	6165	6165	5747	5747	5438
Kalabakan	3974	4088	4088	4208	4208	4334	4334	4334	3865	3865	3865
<b>Total</b>	<b>27095</b>	<b>27971</b>	<b>27971</b>	<b>28890</b>	<b>28890</b>	<b>29856</b>	<b>29856</b>	<b>29856</b>	<b>26570</b>	<b>26570</b>	<b>26261</b>

**Average by Item (M\$/ffb-ton)**

Variable Cost	5.06	5.31	5.31	5.58	5.58	5.86	5.86	5.86	5.12	5.12	4.82
Spare Parts/Maintenance	5.70	5.98	5.98	6.28	6.28	6.60	6.60	6.60	5.43	5.43	5.43
Fixed cost	4.24	4.46	4.46	4.68	4.68	4.91	4.91	4.91	4.04	4.04	4.04
H.Q. Ind. Cost	2.17	2.28	2.28	2.39	2.39	2.51	2.51	2.51	2.07	2.07	2.07
Fin. charges and Dep.	9.39	9.39	9.39	9.39	9.39	9.39	9.39	9.39	9.39	9.39	9.39
<b>Total</b>	<b>26.56</b>	<b>27.42</b>	<b>27.42</b>	<b>28.32</b>	<b>28.32</b>	<b>29.27</b>	<b>29.27</b>	<b>29.27</b>	<b>26.05</b>	<b>26.05</b>	<b>25.75</b>

**Average by Mill (M\$/ffb-ton)**

Ulu Belitong	26.62	27.49	27.49	28.40	28.40	29.36	29.36	29.36	25.79	25.79	25.79
Simpang Wa Ha	24.25	25.08	25.08	25.96	25.96	26.88	26.88	26.88	23.45	23.45	23.45
Serting Hilir	22.81	23.57	23.57	24.37	24.37	25.21	25.21	25.21	22.09	22.09	22.09
Sahabat A	27.54	28.46	28.46	29.42	29.42	30.44	30.44	30.44	26.67	26.67	26.67
Sahabat B	28.03	28.92	28.92	29.85	29.85	30.82	30.82	30.82	28.73	28.73	27.19
Kalabakan	30.57	31.45	31.45	32.37	32.37	33.34	33.34	33.34	29.73	29.73	29.73
<b>Average</b>	<b>26.56</b>	<b>27.42</b>	<b>27.42</b>	<b>28.32</b>	<b>28.32</b>	<b>29.27</b>	<b>29.27</b>	<b>29.27</b>	<b>26.05</b>	<b>26.05</b>	<b>25.75</b>

MALAYSIA  
 FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (Loan 2530-MA)  
 ECONOMIC RATE OF RETURN <sup>a/</sup>  
 (In Constant 1990 M\$)

YEAR	-----			Actual 1/				-----				
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
ffb Processed (ton'000) 2/												
In Peninsular Malaysia				115	310	399	368	475	510	510	500	500
In Sabah				19	41	130	353	514	510	530	530	540
ffb Processing fees (M\$/ffb-ton) 3/												
In Peninsular Malaysia				36	33	31	28	27	26	27	26	26
In Sabah				36	33	33	32	30	29	30	29	29
<b>BENEFITS</b>												
ffb Processing Charges (M\$'000) 4/				4839	11613	16804	21414	28073	28390	29865	28476	28800
<b>COSTS (M\$'000)</b>												
Mills Operating Costs 5/												
Variable Costs				864	2634	4335	7625	8349	8153	8327	7860	7943
Fix Costs 6/				1003	4070	3525	4950	5126	4882	4882	4650	4650
Total Operating Costs				1867	6704	7860	12575	13475	13035	13209	12510	12592
Mills Construction 7/	4934	8990	19847	23782	9417	19600	8960	1092				
<b>TOTAL COST</b>	4934	8990	19847	25649	16121	27460	21534	14567	13035	13209	12510	12592
<b>NET CASH FLOW (M\$'000)</b>	-4934	-8990	-19847	-20811	-4508	-10656	-121	13506	15356	16656	15967	16207
<b>ECONOMIC RATE OF RETURN 8/</b>	13%											

- 1/ Actual benefits and costs for the period 1984 through 1990 are based on FELMILL records converted to constant 1990 M\$.
- 2/ FELMILL's ffb processing projections, except for Kalabakan.
- 3/ It was assumed that milling fees will be adjusted by 5% every three years, thus, declining in real terms.
- 4/ Mills only income are ffb processing charges.
- 5/ Mill operating costs are based on FELMILL projections.
- 6/ Fixed operating costs are exclusive of depreciation and interest.
- 7/ Investment costs are net of identifiable import duties and taxes.
- 8/ Benefits and cost cover a 25 year stream.

<sup>a/</sup> Details regarding economic and financial analyses are in the working files of the PCR in Asia Information Center.

**MALAYSIA**  
**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (Loan 2530-MA)**  
**ECONOMIC RATE OF RETURN**  
**(In Constant 1990 M\$)**

YEAR	Projected											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>ffb Processed (ton'000) 2/</b>												
In Peninsular Malaysia	480	480	480	480	480	480	480	480	480	480	480	480
In Sabah	540	540	540	540	540	540	540	540	540	540	540	540
<b>ffb Processing fees (M\$/ffb-ton) 3/</b>												
In Peninsular Malaysia	25	25	24	24	23	24	23	23	22	22	22	22
In Sabah	28	28	27	27	26	26	25	26	25	25	24	25
<b>BENEFITS</b>												
ffb Processing Charges (M\$'000) 4/	27144	27517	26306	26463	25340	25573	24617	24916	24049	24402	23609	24008
<b>COSTS (M\$'000)</b>												
Mills Operating Costs 5/												
Variable Costs	7429	7427	7074	7074	6737	6737	6416	6416	6111	6111	5820	5542
Fix Costs 6/	4428	4428	4218	4218	4017	4017	3825	3825	3643	3643	3470	3305
Total Operating Costs	11857	11856	11291	11291	10754	10754	10241	10241	9754	9754	9289	8847
Mills Construction 7/												
<b>TOTAL COST</b>	11857	11856	11291	11291	10754	10754	10241	10241	9754	9754	9289	8847
<b>NET CASH FLOW (M\$'000)</b>	15287	15661	15015	15172	14586	14819	14375	14674	14295	14649	14319	15161
<b>ECONOMIC RATE OF RETURN 8/</b>												

**MALAYSIA**  
**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (Loan 2530-MA)**  
**FINANCIAL RATE OF RETURN**  
(In Constant 1990 M\$)

YEAR	-----			Actual 1/				-----				
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>ffb Processed (ton'000) 2/</b>												
In Peninsular Malaysia				115	310	399	368	475	510	510	500	500
In Sabah				19	41	130	353	514	510	530	530	540
<b>ffb Processing fees (M\$/ffb-ton) 3/</b>												
In Peninsular Malaysia				36	33	31	28	27	26	27	26	26
In Sabah				36	33	33	32	30	29	30	29	29
<b>BENEFITS</b>												
ffb Processing Charges (M\$'000) 4/				4839	11613	16804	21414	28073	28390	29865	28476	28800
<b>COSTS (M\$'000)</b>												
Mills Operating Costs 5/												
Variable Costs				864	2634	4335	7625	8349	8153	8327	7860	7943
Fix Costs 6/				1003	4070	3525	4950	5126	4882	4882	4650	4650
Total Operating Costs				1867	6704	7860	12575	13475	13035	13209	12510	12592
Mills Construction	5494	10128	22237	26754	10541	21916	10066	1230				
<b>TOTAL COST</b>	5494	10128	22237	28622	17245	29776	22640	14705	13035	13209	12510	12592
<b>NET CASH FLOW (M\$'000)</b>	-5494	-10128	-22237	-23783	-5632	-12972	-1227	13368	15356	16656	15967	16207
<b>FINANCIAL RATE OF RETURN 7/</b>	118											

1/ Actual benefits and costs for the period 1984 through 1990 are based on FELMILL records converted to constant 1990 M\$.

2/ FELMILL's ffb processing projections, except for lower projections for Kalabakan.

3/ It was assumed that milling fees will be adjusted by 5% every three years, thus, declining in real terms.

4/ Mills only income are ffb processing charges.

5/ Mill operating costs are based on FELMILL projections.

6/ Fixed operating costs are exclusive of depreciation and interest.









7/ Benefits and cost cover a 25 year stream.

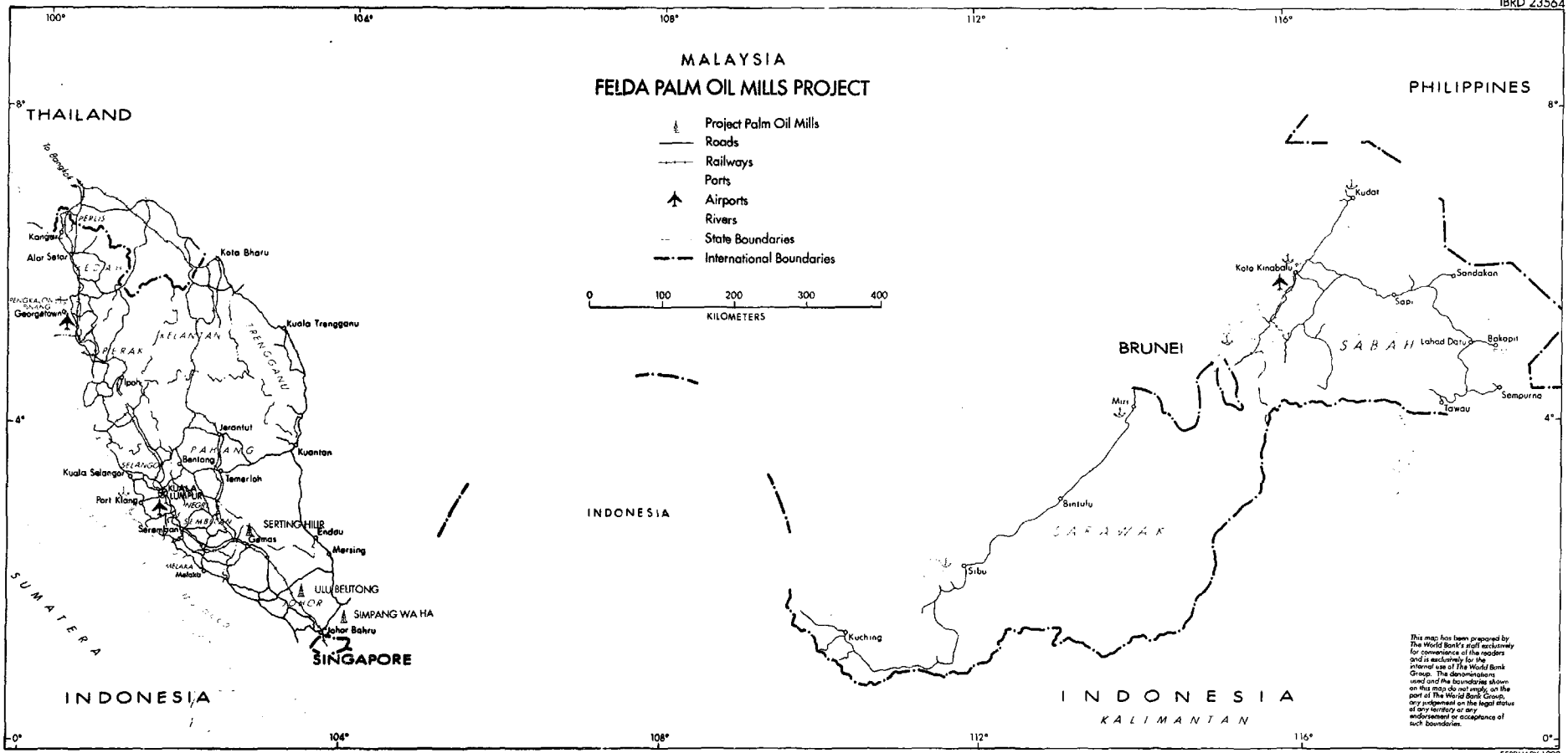
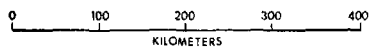


**MALAYSIA**  
**FELDA PALM OIL MILLS PROJECT COMPLETION REPORT (Loan 2530-MA)**  
**ECONOMIC RATE OF RETURN**  
**(In Constant 1990 M\$)**

YEAR	Projected											
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<b>ffb Processed (ton'000) 2/</b>												
In Peninsular Malaysia	480	480	480	480	480	480	480	480	480	480	480	480
In Sabah	540	540	540	540	540	540	540	540	540	540	540	540
<b>ffb Processing fees (M\$/ffb-ton) 3/</b>												
In Peninsular Malaysia	25	25	24	24	23	24	23	23	22	22	22	22
In Sabah	28	28	27	27	26	26	25	26	25	25	24	25
<b>BENEFITS</b>												
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Variable Costs	7429	7427	7074	7074	6737	6737	6416	6416	6111	6111	5820	5542
Fix Costs 6/	4428	4428	4218	4218	4017	4017	3825	3825	3643	3643	3470	3305
<b>Total Operating Costs</b>	<b>11857</b>	<b>11856</b>	<b>11291</b>	<b>11291</b>	<b>10754</b>	<b>10754</b>	<b>10241</b>	<b>10241</b>	<b>9754</b>	<b>9754</b>	<b>9289</b>	<b>8847</b>
<b>Mills Construction</b>												
<b>TOTAL COST</b>	<b>11857</b>	<b>11856</b>	<b>11291</b>	<b>11291</b>	<b>10754</b>	<b>10754</b>	<b>10241</b>	<b>10241</b>	<b>9754</b>	<b>9754</b>	<b>9289</b>	<b>8847</b>
<b>NET CASH FLOW (M\$'000)</b>	<b>15287</b>	<b>15661</b>	<b>15015</b>	<b>15172</b>	<b>14586</b>	<b>14819</b>	<b>14375</b>	<b>14674</b>	<b>14295</b>	<b>14649</b>	<b>14319</b>	<b>15161</b>
<b>FINANCIAL RATE OF RETURN 7/</b>												

# MALAYSIA FELDA PALM OIL MILLS PROJECT

-  Project Palm Oil Mills
-  Roads
-  Railways
-  Ports
-  Airports
-  Rivers
-  State Boundaries
-  International Boundaries



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