MALAYSIA

JOINT COMMENTS

OF

THE MINISTRY OF NATIONAL AND RURAL DEVELOPMENT,
THE FEDERAL LAND DEVELOPMENT AUTHORITY
THE ECONOMIC PLAN

THE JENG

TIPPETTS-ABB
HUNTING TECH

KUALA LUMPUR
22nd May 1967

Comments of the Malaysian Team on The Jengka Triangle Report

The Malaysian team would like to express its thanks to the World Bank and the Consultants for making available this comprehensive and generally well-reasoned study.

The Report

The Report demonstrates the technical feasibility and economic viability of the Jengka Triangle Project. It proposes a well integrated Master Plan for implementation. The technical information in the Report is extensive and of a high quality. We, therefore, accept the "Plan frame" as prepared by the Consultants.

Impact of Project Implementation

We appreciate that the Project represents one of the largest development efforts ever undertaken by the Malaysian Government. It will influence the nature of subsequent land development schemes in this country. The Project calls for an extensive mobilisation by the Government of domestic and foreign resources. We also recognize the necessity of formulating and implementing the Project in a sound manner, both economically and administratively.

Project Definition

(i) Inclusion of the Tekam Forest Reserve

We welcome the favorable results of the soil and forest surveys carried out on an area of

40,000 acres of the Tekam Forest Reserve. Since about 90% of the total area surveyed appears to be suitable for agricultural development, the Malaysian team feels that it should be included within the definition of the Jengka Triangle. To that end, the Federal Government has started negotiations with the State Government of Pahang on the subject of including the 40,000 acres of the Tekam Forest Reserve into the Jengka Triangle Project.

(ii) Development of Smallholder Rubber

The *Report* does not make a convincing case for the development of rubber smallholdings in Jengka. The Consultants project an "average Malaysian export price" for natural rubber of "M$50 cents per lb. for 1980, falling to M$45 cents .... in 1995." On the basis of these prices and modest yield assumptions, it is concluded that settlers' income of $1,200 - $1,800 during the repayment period represents the maximum allowable if the cost of funds to FLDA is to met from project revenues.

Recent market behaviour suggests that rubber prices will be lower, perhaps substantially lower, than those projected by the Consultants. The impact of such a development upon the welfare of settlers and upon the economic viability of the rubber

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holdings should be thoroughly examined. We feel the issue of whether to develop any rubber acreage should be studied carefully, particularly since some of the land now scheduled for rubber development may, with further study, prove suitable for oil palm.

The case for rubber smallholdings in the Jengka should be re-examined for another reason. It may be that certain infrastructure and other overhead costs might reasonably be charged entirely to the oil palm projects on the ground that these costs must be undertaken anyway and that the rubber land development should be thought of as a marginal addition to the project. Or it may be that the repayment period could be extended. Reappraisal along these lines might give a more favourable picture. However, there is sufficient doubt to warrant scheduling major rubber land investment late in the programme. This is also an additional reason to support the inclusion of the Tekam Forest Reserve in the Project.

The Role of Private Capital.

The scope of work provided to the Consultants includes the directive :

" To plan agricultural schemes composed of economically viable smallholdings of optimum size ..... Consideration will be given to the part that estate agriculture can play in promoting such developments."

The Consultants argue that, ".... the allocation of large areas of land for private enterprise development is in consistent with .... land development involving the granting of land rights to individual settlers." Based upon this view, a Master Plan is proposed in which, the entire financial, managerial and administrative burden of developing the Jengka's 99,000 acres of crop land would fall upon the Government.

While the use of some private capital in crop land development might result in certain financial advantages and lessen the managerial bunden of FLDA, the Malaysian team feels that political realities and the complexity of deviding suitable arrangements for including Private Capital in crop-land development at this stage preclude private participation in Jengka's land development. However, serious consideration is required of the role which private capital can play in Malaysia's future land development projects.

Forest Exploitation

We fell that forest exploitation of the area should conform with the recommendations of the Consultants. We appreciate the necessity for MARA to implement its timber exploitation programme at a pace consistent with the recommended phasing of agricultural development of the area.

Settlement Unit and Size of Village

The recommended size of the settlement unit is a significant departure from the present FLDA policy.

The smaller, less formal settlement unit is esthetically appealing. It makes feasible the larger houselot and reduces the distance - and travelling time - between the living quarters of the settlers and their main crop plots.

If this recommendation is adopted there will be approximately 97 settlement units within the Jengka area; about 24 units would be established if the present FLDA policy is followed. We believe the cost of providing infrastructure to the 97 settlement units may be more than the cost of providing it for 24 units of larger size.

The problem of travelling time to holdings becomes less significant if individual titles to oil palm lands are not granted and communal operation is practiced. Under this system transportation of workers to the holdings will be provided by the centralized management.

It is, therefore, felt that the existing FLDA standard settlement unit of 5,000 to 6,000 acres for oil palm scheme, and 4,000 to 5,000 acres for rubber scheme be followed. The size of each village should be between 350 to 450 settlers. Each settler should get ¼ acre for his house site and ½ acre for cash-cropping.

Size of holdings

The Report recommends "10 acre-holdings [of] rubber [under] all circumstances unless it becomes a deliberate policy to subsidise the repayment from settlers." The Report also recommends that the oil palm holding should be 10 acres in size.

We agree with the recommendation on rubber holding. A 10-acre holding of rubber is acceptable as it is the minimum size that will enable repayment to be made (given the assumptions made in the Report) and at the same time provide a satisfactory level of income to the settler. However,

palm a 10-acre holding for oil/is not acceptable. It is recognised that 10 acres of oil palm provide greater flexibility in respect of income and repayment. But because:

(i) the anticipated income generating capacity of rubber is lower than oil palm;

(ii) it is desirable to avoid a large disparity between the incomes of settlers on oil palm and rubber boldings;

(iii) the current need is to settle as large a number of people as is economically feasible;

(iv) 8 acres of oil palm can provide a satisfactory long term income level (see Page 163 Table 13-8); and

(v) the long term settlers cash income on rubber at 10 acres would equate with oil palm at 8 acres (see Page 162 Table 13-7), we recommend that only 8 acres of oil palm land be provided for each settler.

Oil Palm areas could be run on a share holding basis with dividends paid to settlers. Full dividends for any given period would only be paid to those settlers who had put in their scheduled labour requirement i.e. working days. The settlers would be paid a recognised daily rate for work done i.e. weeding, harvesting, etc. - the remainder of their time being available for subsidiary crop production on house lots or non-primary crop areas.

The full cost of development (including interest at 7%) operation, re-planting, etc. could be recovered prior to declaring a dividend. Rents and repayment rates chargeable against house lots, houses and other agricultural areas could also be deducted prior to the payment of final dividends. Settlers income would be comprised of earnings from daily wages, plus dividends, -- payable at regular intervals during the year.

The main advantages of centralized management when operating on a share holding basis rather than on an individual holding basis are:

(a) better control of husbandry practices relating to weed control, fertiliser application, castration, assisted pollination, control of pests and disease, frond pruning and upkeep of harvesters paths;

(b) systematic organisation of harvesting patterns, this is essential for:-

(i) the control of the degree of ripeness of fruit harvested which affects both the quality and quantity of the crop produced;

(ii) intergation of harvesting and collection with factory operation. For efficient factory operation, close liaison between field management and the factory engineers is critical and;

(iii) efficient utilisation of fruit transport systems.

(c) effective control of production and processing. This would facilitate the systematic marketing of high quality produce under conditions which are likely to be highly competitive in the future.

(d) more efficient operational control. In its absence there would be a risk of wastage/loss of the very large capital assets that these oil palm areas represent.

The settlers on FLDA Schemes have little or no previous experience in oil palm cultivation and processing. Therefore they will require close supervision for a number of years before they can be relied upon to adopt the appropriate husbandry practices required to ensure efficient operation.

If it is accepted that such supervision is necessary, then a system of central control combined with share holding on the part of the settlers should (a) provide satisfactory cover for the sponsor (Government) and (b) ensure that the settlers' incomes from these areas reach the targets envisaged. The long term objective of a centralised control policy should be, however, to increasingly involve settlers in the management and operation of the oil palm projects. Eventually these projects could become fully integrated co-operative organisations. In the transitional phase the responsibility for policy formulation and operational control should rest with the FLDA.

Land Tenure

We feel that individual land titles should be given only to settlers on rubber holdings. It is our view that individual titles to settlers in oil palm schemes would render the management of schemes and processing plants inefficient and costly. Therefore, settlers in oil palm schemes should only hold proportionate shares as co-owners of the schemes.

Studies and Research

We feel that the various opportunities for cost reduction - lower standards for infrastructure (e.g. water supply), savings on management expenditures, formation of a 'skilled installation service' and encouragement of domestic production of oil palm mills using foreign components - have to be thoroughly investigated as soon as possible. Where substantial savings can be realized without compromising benefits, appropriate action will be considered.

Similarly, the opportunities for improved performance and yields will be examined thoroughly by means of well-conceived research. It would be very useful to carry out additional research on (i) possible alternative crops for the main crop areas; (ii) cash crops suitable for production on the houselot; (iii) market outlets for houselot production; (iv) future prices for rubber and palm oil; (v) rubber and oil palm yields under various soil and topographic conditions; and, (vi) the feasibility of intercropping and grazing on the main crop areas.

We feel that such research facilities be established on a national basis, with the results made available to all.

Communications - Road construction and Layout

The recommendations of the Consultants are acceptable.

Community Development

We recognize the need to emphasize the social development of the Jengka's settlers. The task of building cohesive communities and viable social institutions out of disparate groups of settlers is likely to be one of the most difficult aspects of Jengka's development. This problem is for more important than the almost casual approach of the Consultants. We feel that substantial effort should be allocated to a social development programme and to the provision of qualified personnel to carry it out. The co-ordinating agent in the formulation and implementation of such a programme will be the Adult Education and Community Development Division of the Ministry of National and Rural Development.

Administrative Costs and Repayment of Consolidated Charges.

At present the costs of FLDA's administration do not form part of the consolidated charges to settlers. However, we agree in principle that Jengka's settlers should be made to bear some of the administrative costs as well. The charges should cover interest, principal, land rents and premia. We appreciate the need for careful study of the amounts to be collected for each purpose, the timing of the collection, and the administrative difficulties involved. It is necessary to examine the administrative feasibility and economic consequences of a higher export duty - for revenue, research, or in lieu of some elements in the consolidated annual charges. There is also a need to investigate the possibility of introducing a "processing charge" at the factory which would cover costs and equilize basic income.

Water Supplies

Although the water systems recommended in the Report appear to be less expensive than those presently installed by FLDA., we feel that they are still substantially overdesigned. They are planned for the population 25 years in the future - assuming a 70 per cent population growth in this period. This contrasts with the practice in Malaysia, and elsewhere, of anticipating demand about 10 years in the future at each expansion stage.

The assumed per caput usage of 60 gallons per day in the rural areas, and 75 in the towns also appears excessive. National and international standards are on the order of 40 g.p.d. in the rural areas and 50-60 g.p.d. in the cities. Present usage in Kuala Lumpur, where industrial demand is substantial, is 50-55 g.p.d. per caput.

On this basis it would appear that the recommended design provides for a population that is 33 per cent too large and average usage that is at least 40 per cent too great, thereby inflating the required investment by a very significant amount.

In the initial years of each settlement, only those investments in the water supply system should be made which are necessary to meet the expected demand approximately 10 years in the future. Some components cannot be deferred economically. However, it should be relatively easy to defer for ten years at least one-third of the recommended $15.6 million investment in water systems.

State Quota

Present policy requires that 50 percent of the settlers taken into Jengka be residents of Pahang State. However, there is a possibility of relaxing this quota in order to permit larger numbers of settlers from other states where population densities are higher.

Concluding Comments

The views outlined in this memorandum are believed to be administratively and technically sound. They are based upon the substantial experience which the FLDA has had, both in rubber and oil palm schemes. Moreover, they reflect the political realities in Malaysia today.

However, it is recognized that programme improvement is always possible. In view of this, we encourage open and frank discussions on these and other issues. Suggestions which might contribute to more effective land development programmes are heartily welcomed.

F04 4.11

JENGKA STAGE TWO

PALM OIL MILL CAPITAL & OPERATIONAL EXPENSES

[illegible]

[illegible] CAPACITIES, [illegible] AND CAPITAL EXPENDITURE

	1973	1974	1975	1976	1977	1978	1979	1980	1981	TOTAL
				CAPACITIES AND MILL STAGING						
TOTAL FFB TONS	-	6,566	49,104	95,866	136,606	149,189	157,579	163,361	167,061	-
CAPACITY TONS/HR.	-	1	12	24	36	37	39	41	42	42
MILL CAPACITY	-	-	24 (Stage I)	24	42 (Stage II)	42	42	42	42	42
				CAPITAL EXPENDITURE (in $ million)						
STAGE I	1.1	2.4	0.2	-	-	-	-	-	-	3.7
STAGE II	-	-	0.4	1.2	0.1	-	-	-	-	1.7
TOTAL	1.1	2.4	0.6	1.2	0.1	-	-	-	-	5.4

	Stage I 24 tons/hr.	Stage II 42 tons/hr.	Total
1. Site preparation	50,000	-	50,000
2. Machinery Plant & equipment	2,610,000	1,620,000	4,230,000
3. Buildings, civil works & foundation	500,000	-	500,000
4. Staff quarters	100,000	100,000	200,000
5. Water supply	200,000	-	200,000
6. Miscellaneous	200,000	-	200,000
	3,660,000	1,720,000	5,380,000

JENGKA STAGE TWO

MILL AMORTIZATION CHARGE.

(15 years at 7% interest)

Expenditure Years	Final Amortization Year	Years Interest Paid	Capital Expenditure	Compound Amount Factor	Amount Plus Interest
1973	1990	17	1.1	3.158815	3.47470
1974	1990	16	2.4	2.952164	7.08520
1975	1990	15	0.6	2.759032	1.65542
1976	1990	14	1.2	2.578534	3.09424
1977	1990	13	0.1	2.409843	0.24098
				TOTAL	15.55054

TOTAL FFB between 1975 and 1990 = 2,123,006

80% = 1,698,405

$$\text{Amortization charge} = \frac{15,550,540}{1,698,405} = \$9.16¢$$

say $9.20¢

MANUFACTURING COST

$6.50 per ton of FFB. Based on actual

FFB TRANSPORT COST

$4.00 per ton of FFB.

JENGKA STAGE TWO.

PALM OIL AND KERNEL DISTRIBUTION COST

PALM OIL		$ Per Ton
Road Transport (160 x 11 cents) 1/		17.60
Bulk Installation and Handling		6.50
Sampling and analysis fee		0.20
Outward wharfage		1.20
Insurance		0.37
	TOTAL	25.87

8.00

KERNELS		
Packing and Materials		11.00 ✓
Transport (160 x 15 cents) 1/		24.00
Shipping Charges		12.00
Insurance		0.50
	TOTAL	47.50

1/ Export through Port Swettenham

CALCULATION OF REPLANTING RESERVE CHARGE

To accumulate $1,200 per acre at end of 20 years at 5.5% compound interest.

∴ Annual collection	=	1200 x 0.02867933 (annuity factor)
Total FFB for 20 years	=	170 tons.
Annual average	=	8.5 tons.
80% of average	=	6.80 tons.
∴ Per ton charge	=	$\frac{1200 \times 0.02867933}{6.8}$
	=	$5.064
		say $5.06

[illegible]
[illegible]
[illegible]
Schemes 8 - 13

The following costs incurred in the running of a palm oil mill are known as General Charges-

1. Mill Staff Salaries.
2. Insurance (excluding mill and machinery)
3. Medical fees for staff.
4. Office Expenses.
5. Office and Staff quarters lighting.
6. Water for office and staff quarters.
7. Up-keep of office building, workshop, store and staff quarters.

Contingencies 10% of total annual General Charges.

The mill will operate 400 hours per month (i.e. two 8 - hour shifts per day) and when necessary, 500 hours General Charges are assumed to increase up to the 8th. year after which they are assumed to be constant.

A summary of the annual General Charges are given below (the details are attached):

YEAR	STAGE	ANNUAL GENERAL CHARGES General Charges($'000)
1 (1975)	I	122
2	I	134
3	II	203
4	II	218
5	II	228
6	II	237
7	II	246
8 - 24(1998)	II	255 = TOTAL: $5,723,000

Sum of annual General Charges from 1975 to 1998 (24 years) divided by 80% of total ffb production over the same period would give the General Charges per ton ffb.

General Charges per ton ffb will be: $\frac{5,723,000}{2,587,835}$ = 2.2115 Say, $2.22 [illegible]

JENGKA STAGE TWO
YEAR 1
GENERAL CHARGES
FOR A 42 TONS/HOUR PALM OIL MILL

Mill Stage I: 24 tons/hour (Two 8 - hour shifts per day)

SALARIES

		No. Required	Amount per person per month ($)	Amount per Annum ($)
*1.	Engineer	1	1,050	15,750
*2.	Electrical Chargeman	1	350	5,250
*3.	Shift Production Supervisor	1	300	4,500
*4.	Foreman	2	450	13,500
*5.	Boiler House Chargeman	1	195	2,925
6.	Fitter (mechanical)	2	230	5,520
7.	Motor Mechanic	2	230	5,520
8.	Fitter (Electrical	1	230	2,760
9.	Carpentar / Mason	1	195	2,340
10.	Blacksmith	1	195	2,340
11.	Laboratory Analyst	1	200	2,400
12.	Engine Driver (Steam)	2	200	4,800
13.	Engine Driver (Diesel)	1	200	2,400
14.	Senior Clerk	1	475	5,700
15.	Finance Clerk	1	250	3,000
16.	Storekeeper / Clerk	1	250	3,000
17.	Laboratory Attendant	1	84	1,008
18.	Watchman	2	120	2,880
19.	Weighbridge Operator	1	108	1,296
		24		86,889
			10% Staff Provident Fund:	8,689
			Sub - Total : C/F	95,578

* Denotes mill personnel who are employed 3 months before commissioning i.e. 15 months in year 1. The balance of mill personnel are employed for 12 months in year 1.

..2/-

		YEAR 1 ($)	
1.	P/R (Salaries)	95,578	
2.	Insurance (Excluding mill and machinery)	1,500	
3.	Office Expenses	4,000	
4.	Medical Expenses @ $20 per person per month	5,820	
5.	Lighting (office and staff quarters)	3,000	
6.	Water (" " " ")	1,000	
7.	Upkeep of Office Buildings, Workshop, Store and Staff Quarters	-	
		110,898	
	10% Contingencies	11,090	
		121,988	Say, 122,000

.'. Total estimated General Charges for year 1 is $122,000

YEAR 2

Mill Stage II: 24 tons/hour (Two 8-hour shifts per day)

No. increase in personnel
Slight increase in General Charges. Assuming increase is approximately 10% of total General Charges for year 1.

General Charges for year 1	-	$122,000/-
10% of General Charges	-	$ 12,200/-
		$134,200/-

.'. Estimated Total General Charges for year 2 is $134,000

JEMOKA STAGE TWO
YEAR 3

Mill Stage III: 42 Tons/Hour (Two 8 - hour shifts per day)

SALARIES	No. Required	Amount per person per month ($)	Amount per Annum ($)
1. Senior Mill Engineer	1	1,500	18,000
2. Mill Engineer	1	850	10,200
3. Electrical Chargeman	1	395	4,740
4. Shift Production Supervisors	2	345	8,280
5. Foreman	1	530	6,360
6. Boiler House Chargeman	6	240	17,280
7. Fitters (Mechanical)	4	280	13,440
8. Motor Mechanic	2	280	6,720
9. Fitter (Electrical)	2	280	6,720
10. Carpentar/Mason	1	240	2,880
11. Blacksmith	1	240	2,880
12. Laboratory Analysts	2	275	6,600
13. Engine Drivers (Steam)	6	245	17,640
14. Engine Driver (Diesel)	1	245	2,940
15. Senior Clerk	1	560	6,720
16. Finance Clerk	1	350	4,200
17. Storekeeper/Clerk	1	350	4,200
18. Clerk/Typist	1	250	3,000
19. Laboratory Attendent	1	90	1,080
20. Watchmen	2	140	3,360
21. Weighbridge Operators	2	120	2,880
	40		150,120
		10% Staff Provident Fund:	15,012
		Sub - Total C/F	165,132

1. B/F Salaries — $165,132/-
2. - 7 Assume 25% increase from year 1 figure of $15,320/- = $ 19,150/-

$184,282/-

10% Contingencies $ 18,428/-

$202,710/- Say, $203,000

∴ Estimated Total General Charges for Year 3 is $203,000/=

JENCKA STAGE TWO

YEAR 4

Mill Stage IV (final): 42 Tons/Hour (Two 8 hour shifts per day)

No increase in personnel and no significant increase in costs other than normal salary increase and some increase of items (2) to (7).

Assume annual total salary increase to be approximately $8,400/- up to year 8 and items (2) to (7) maximum value of $25,000/-:

Item (1) salaries (165,132 + 8,400)	=	$173,532/-
		25,000/-
		198,532
10% Contingencies		19,853/-
		218,385/-

Say, $218,000/-

∴ Estimated Total General Charges for year 4 is $218,000/-

YEAR 5

Item (1) salaries (173,532 + 8,400)	=	$181,932/-
Add items (2) to (7) max. value		25,000/-
		206,932/-
10% Contingencies		20,693/-
		227,625/-

Say $228,000/-

∴ Estimated Total General Charges for Year 5 is $228,000/-

JENGKA STAGE TWO
YEAR 6

Item (1) Salaries (181,932 + 8,400)	=	$190,332/-	
Add items (2) to (7) max. value		25,000/-	
		215,332	
10% Contingencies		21,533	
		236,865/-	Say, $237,000/-

∴ Estimated General Charges for Year 6 is $237,000/-

YEAR 7

Item (1) Salaries (190,332 + 8,400)	=	$198,732/-	
Add items (2) to (7) max. value		25,000/-	
		223,732	
10% Contingencies		22,373	
		246,105/-	Say, $246,000/-

∴ Estimated General Charges for Year 7 is $246,000/-

YEAR 8 ONWARDS

Items (1) Salaries (198,732 + 8,400)	=	$207,132/-	
Add items (2) to (7) max. value		25,000/-	
		232,132	
10% Contingencies		23,213	
		255,345/-	Say, $255,000/-

∴ Estimated General Charges for Year 8 onwards is $255,000/-