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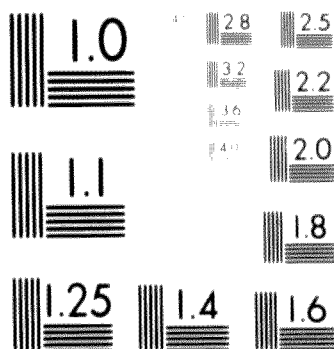
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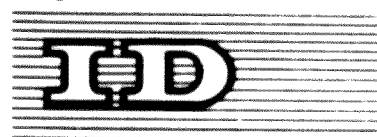


MICROCOPY RESOLUTION TEST CHART  
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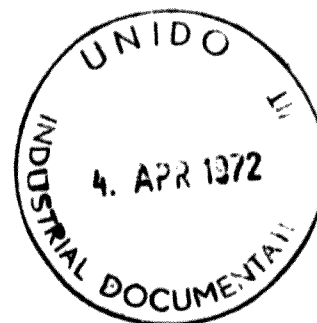
United Nations Industrial Development Organization

PROJECT INFORMATION SHEET

PAP-07-71

SECOND ASIAN MEETING  
TO PROMOTE INDUSTRIAL PROJECTS<sup>1/</sup>

Singapore, 3 - 11 November 1971



INTEGRATED OILS, FATS, CHEMICALS  
AND PROTEIN MANUFACTURE FROM COPRA

COUNTRY	Papua New Guinea
PROJECT	Integrated oils, fats, chemicals and protein manufacture from copra Total Investment: US \$2,500,000
FOREIGN CONTRIBUTION REQUIRED	- Suppliers credit - Know-how - Management - Marketing

<sup>1/</sup> Sponsored by: The Economic Commission for Asia and the Far East (ECAFE)  
The United Nations Industrial Development Organization (UNIDO).

IMPORTANT NOTICE

The basic purpose of this meeting is to provide an Exchange or Market Place for the initiation of contacts on specific industrial projects between their proponents from the Asian countries and potential suppliers of capital, finance, equipment or know-how, as the case may be, from the industrialized countries.

This Project Information Sheet has been prepared as a basis for such contacts. Its purpose is not to present detailed information about the project but to provide the recipient with an outline sufficient to determine tentative interest in principle. Any further available information on the project will be furnished on request to interested parties at the Meeting.

Experience has shown that industrialists frequently prefer to carry out their own further investigations in detail into projects in which they are interested, but assistance from UNIDO in these matters can be rendered to the Asian country concerned on request.

This Information Sheet contains only the information supplied to UNIDO by the proponent of the Project. UNIDO can therefore take no responsibility for its accuracy.

INTEGRATED OILS, FATS, CHEMICALS  
AND PROTEIN MANUFACTURE FROM COPRA

I. INTRODUCTION

. Industry

The integrated manufacture of refined edible oil, compound cooking fats, soap, glycerine, detergents, protein meal, etc.

. Promoting Agency

The Department of Trade and Industry, Port Moresby, Papua New Guinea, through the Department of External Territories, Commonwealth of Australia, Canberra.

. Purpose of Project

Basic information on markets, likely costs of establishment of the industry, source of supply of raw materials, likely profitability, incentives, etc., are set out so that potential overseas investors may form a preliminary assessment of the likely advantages of establishing this industry in Papua New Guinea.

. Background

a) General

In the primary commodity sector, copra production is of predominant economic importance with an estimated production of about 125-130,000 tons per annum. Copra is the single largest foreign exchange earning commodity (US \$13.3 million in 1970). Owing to poor communications and other reasons all the available nuts are not collected and processed into copra. According to one estimate the potential for copra production is 25 - 30% more than the current level of production. The districtwise coconut plantings, production and growers is shown in table - 1. It is seen that in terms of copra production, the Papuan total is 18,000 tons per annum, as against 115,000 tons of New Guinea. The total export of copra, coconut oil, oil cake and desiccated coconut amounted to A\$21 million during 1969-70, as shown in table - 2.

In an economy solely used to export primary commodities it is difficult to realize the economic advantages of industrial processing of the primary commodity and exporting the processed products. It is equally difficult to visualize the taking up of manufacture of products with a deliberate attempt to minimize or eliminate their imports and thereby save expenditure of scarce foreign exchange. In the former case, from the most important criterion of earning foreign exchange, the value added is substantial. The employment benefits, addition to GNP, and revenues to the Government by way of taxes are quite considerable, not to speak of development of skills and other national benefits. This point is illustrated with reference to the export

of copra as compared with the export of industrially processed products at the secondary level, of coconut oil and oil cake. The details are shown in table - 3. It will be seen that by the export of copra, the net foreign exchange earning was an average of A\$157 per ton during 1968/69 and also in 1969/70, whereas by the export of coconut oil and copra cake, the foreign exchange earning in terms of copra was an average of A\$185 per ton in 1968/69 and A\$180 per ton in 1969/70. This would illustrate that on theoretical grounds if all the copra produced in the territory (excluding desiccated coconut) has been processed at least to the first stage of processing, the net additional foreign exchange earning at a conservative estimate of A\$25 per ton would have been A\$2.8 million per annum. However at present only about 25% of the production of copra is crushed into oil and cake and less than 3% of the coconuts processed into the desiccated coconut within Papua New Guinea. It is reasonable to infer, therefore, that secondary and tertiary industrial processing would be in Papua New Guinea's interest as the value added is substantial.

A statutory body known as the Papua and New Guinea Copra Marketing Board established in 1952 has monopoly trading both in the domestic purchase and export of copra. In discharging its marketing functions, the board acts as a non-profit body and purchases copra on the basis of Philippine FM copra prices. The legislation provides for uniform grading, packaging and marking of bags. The functioning of the board is in the nature of a guaranteed purchasing agency for copra. In comparison with arrangements made in other coconut countries in Asia, it must be said that the board is serving a most useful purpose in Papua New Guinea.

b) Developments

On the development side, it is estimated that coconut acreage will increase from 621,000 to 702,000 and copra production from 133,000 tons to 166,000 tons per annum over a period of 5 years. It would seem however, that with a determined policy of improving productivity by providing the necessary inputs, the production of coconuts and copra could be increased quite substantially. It is to be noted that the yield of copra per acre is on an average  $\frac{3}{4}$  of a ton in Papua New Guinea whereas it has been demonstrated by reputed research and experiment stations that the yield could be more than  $1\frac{1}{2}$  tons per acre.

c) The Industries Envisaged

The above illustration and statistics emphasize the need to take up the industrial processing of the coconut products in Papua New Guinea. Also, the economic importance of coconut cultivation is growing, thus adding urgency to

the industrial processing of coconut products. It is also recognized that with the impending decision of the United Kingdom joining the Common Market, less reliance will have to be placed on the export earnings of primary commodities such as copra and increasing attention paid to industrial processing with a view to exporting manufactured goods.

The envisaged industry would be centred in an area producing large quantities of coconuts, e.g. the Madang coast or the Papuan coastal region, and would combine oil extraction, refining, hydrogenation, manufacture of shortening, table margarine, bakery fats, laundry and other soaps, glycerine, detergents, cosmetics and protein meal for animal feedstuffs.

The domestic market for edible oils, shortening and similar products is estimated to be in the region of 2,500 tons per annum (excluding butter) and consumption growth rate is about 16%. Soap and other products amount to about 4,000 tons per annum with similar growth rates. The industry would have an envisaged capacity of 25,000 - 40,000 tons copra extraction per annum, and consequently the industry would produce in part for export, mainly in the edible oil sector. Relevant statistical information is as follows:

(i) Compound Edible Fats

The authorities have been considering for some time the establishment of a margarine plant. Actually what is intended, is to develop indigenous manufacture of cooking oils, hydrogenated fats such as shortening and table margarine, with a view to reducing the import of these products which run into an import bill of A\$1.5 million per annum and is on the increase year after year, with an annual growth rate of 16% (Table 4). It has been worked out that these products could be produced within Papua New Guinea at prices lower than imported ones. In the matter of raw materials, apart from coconut oil, palm oil will become available from July 1971. There is some hope of developing peanuts for oil extraction in the distant future. Therefore, this is an industry which will be based entirely on indigenous raw materials and will be in the nature of import saving. It has already been declared as a pioneer industry. In view of the growing demand for cooking oils, which is reported to be used increasingly by the indigenes also, it has been suggested that the manufacture of these products could be taken up.

(ii) Soap

Another allied industry viz. soap manufacture has been proposed to be established and has also already been declared a pioneer industry. The import figures of soap is shown in table 5. In view of the sophisticated nature of the toilet soap consumed in the country and since this

is largely limited to the expatriates, it is proposed to defer the manufacture of toilet soap. However, there is an immediate case for taking up the manufacture of laundry soap in bar or cake form, soap flakes and washing powders. It is suggested that the laundry soap manufacturing be taken up in the same unit that will produce refined edible oils and compound edible fats. In addition to soap stock that will become available from the refinery, palm oil, an indigenous source of raw material, will also become available. All that needs to be imported, besides capital equipment would be caustic soda, a few chemicals and packaging materials. This would amount to import savings of about A\$900,000 per annum (1969-70).

In spite of the industry having already been declared a pioneer industry and the feasibility having been indicated, the industry is not yet established.

#### Investment

Investment required would appear to be in the order of 2,500,000 of which 75% would represent machinery, equipment and buildings. Semi-skilled labour required would be in the region of 150, with another 20 skilled and professional workers. At full capacity, profitability could be expected to exceed 20% on tangible assets.

#### Other Relevant Information

The benefits of pioneer industry status would be available to the industry giving company tax exemption for five full financial years (see attachment).

Tariff assistance could be sought if found necessary, to effectively establish the industry on a competitive basis with imports. Currently tariff policy is designed to encourage investment in industry in Papua New Guinea.

Benefits to investor would include tax exemption as pioneer industry, preferential position in rapidly expanding market as direct result of pioneer status. Guaranteed free movement of capital and profits. Future benefits could include an export incentive or other schemes of assistance.

Benefits to economy of Papua New Guinea would include:

- Import replacement;
- Export earnings;
- Employment of 150 workers;
- Investment of \$2.5 million with expectation of expansion and further investment.



**TABLE 1**

**Districtwise coconut plantings, production of growers, 1968-69**

**INDIGENOUS**

**EXPATRIATE**

	Area in Acres			Production Copra tons	No. of Growers	Not Bearing	Total	Area in Acres			Production Copra tons	No. of Growers
	Bearing	Bearing	Total					Bearing	Total	Bearing		
Western	105	938	1,043	121	1,490	105	1,043	570	675	104	5	
Gulf	775	9,349	10,124	2,156	3,124	244	10,124	1,345	1,589	580	13	
Central	8,916	17,172	26,089	1,374	9,717	1,299	26,089	16,365	17,664	6,134	52	
Milne Bay	9,720	17,180	26,900	4,507	12,990	1,081	26,900	11,942	13,023	2,690	90	
Northern	3,480	1,893	5,373	127	2,534	526	5,373	474	1,000	151	15	
S. Highlands	-	-	-	-	-	-	-	-	-	-	-	
<b>New Guinea Total</b>	<b>22,996</b>	<b>46,533</b>	<b>69,529</b>	<b>8,285</b>	<b>29,855</b>	<b>3,255</b>	<b>69,529</b>	<b>30,696</b>	<b>33,951</b>	<b>9,659</b>	<b>175</b>	
E. Highlands	-	-	-	-	-	-	-	-	-	-	-	
Chimbu	-	-	-	-	-	-	-	-	-	-	-	
W. Highlands	-	-	-	-	-	-	-	-	-	-	-	
Sepik, West	1,538	4,147	5,685	278	4,506	225	5,685	852	1,077	341	6	
Sepik, East	6,828	9,351	15,179	747	37,131	273	15,179	1,322	1,595	222	20	
Madang	10,815	13,040	23,855	3,128	7,282	5,278	23,855	30,904	36,182	12,850	58	
Morobe	4,760	7,153	11,913	761	4,663	814	11,913	3,773	4,587	772	33	
W. New Britain	9,612	7,352	16,964	1,796	6,916	3,541	16,964	17,418	20,959	7,097	32	
E. New Britain	18,840	73,078	91,818	12,822	48,910	11,475	91,818	54,079	65,554	21,290	131	
New Ireland	7,022	34,517	51,539	8,629	16,418	5,145	51,539	56,157	61,302	18,832	142	
Bougainville	26,126	27,393	53,519	6,282	7,510	6,274	53,519	29,774	36,048	15,365	70	
Marus	3,206	4,535	7,741	1,073	773	527	7,741	9,841	10,368	2,687	18	
<b>New Guinea Total</b>	<b>98,647</b>	<b>180,566</b>	<b>279,213</b>	<b>35,516</b>	<b>134,109</b>	<b>33,552</b>	<b>279,213</b>	<b>204,120</b>	<b>237,672</b>	<b>79,456</b>	<b>510</b>	

<b>T.P.N.G. Total</b>	<b>121,643</b>	<b>227,099</b>	<b>348,742</b>	<b>43,801</b>	<b>163,964</b>	<b>36,807</b>	<b>348,742</b>	<b>234,816</b>	<b>271,628</b>	<b>89,115</b>	<b>685</b>
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**Source:** Department of Trade and Industry, TPNG

Table 2  
Exports of coconut products  
Year ended 30 June

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
<b>coconuts (whole)</b>										
Quantity <u>CWT</u>	8,062	6,392	5,830	5,928	5,952	4,598	4,999	2,300	3,970	2,034
Value \$	22,914	17,176	17,178	16,448	18,166	13,705	13,275	6,337	9,907	5,535
<b>coconuts (desiccated)</b>										
Quantity <u>CWT</u>	-	-	-	-	-	-	-	-	50,823	72,063
Value	-	-	-	-	-	-	-	-	989,607	1,210,600
<b>coconut (oil)</b>										
Quantity <u>CWT</u>	408,580	392,540	472,820	421,920	510,700	438,000	463,620	481,940	411,260	426,540
Value \$	4,721,552	3,938,778	4,667,624	4,638,758	6,781,416	5,864,165	5,181,353	6,875,463	5,771,785	5,801,240
<b>copra oil cake</b>										
Quantity <u>CWT</u>	205,799	230,114	254,989	231,840	273,264	238,198	262,980	209,000	225,000	220,000
Value \$	568,074	520,948	658,118	552,692	623,384	725,019	658,650	529,865	589,196	606,839
<b>copra</b>										
Quantity <u>CWT</u>	1,530,482	1,496,789	1,449,984	1,385,442	1,471,277	1,757,073	1,482,410	1,509,898	1,874,841	1,634,986
Value \$	10,226,628	9,220,846	9,436,000	10,016,916	12,409,138	14,298,369	9,993,951	13,943,014	14,804,146	13,339,651

Source: Department of Trade and Industry, TPNG

Table - 3

Comparative export earnings from the export of  
copra, coconut oil, copra cake and the desic-  
cated coconut

Sr. No.	Commodity	Year	Quantity in tons	Value in A\$	Export earnings per ton of copra equivalent A\$
1.	Copra	1968-69	93,742	14,804,145	157
		1969-70	84,500	13,339,651	157
2.	Coconut oil	1968-69	20,563	5,771,785	280
		1969-70	21,327	5,801,240	272
3.	Copra cake <sup>1/</sup>	1968-69	11,450	589,191	53
		1969-70	11,000	606,839	55
4.	Copra equiv- alent of (2) and (3) above	1968-69	34,270	6,360,976	185
		1969-70	35,545	6,408,079	180
5.	Desiccated coconut <sup>2/</sup>	1968-69	2,541	989,607	389
		1969-70	3,603	1,210,600	336

<sup>1/</sup> Apparently there is a slight discrepancy in the export of copra cake during 1969-70, because it does not correspond to the increased production of coconut oil. It would therefore appear that not all the cake that is produced is exported, or it is not accounted for, for the period under review.

<sup>2/</sup> May not exactly be the copra equivalent. If anything it is slightly better on copra equivalent basis, because there is a slight reduction in weight due to paring of the kernel in the manufacture of desiccated coconut.

Table - 4

Import of edible fats and oils into PNG

Quantity: in lbs.  
Value : A \$

	1966-67		1967-68		1968-69		1969-70	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Butter	1,473,122	643,896	1,499,408	696,361	1,692,645	746,374	2,039,131	818,018
2. Melted Butter	9,390	4,406	7,058	3,039	3,658	1,427	14,577	4,967
3. Margarine	993,431	197,876	1,120,293	222,104	1,205,861	240,979	1,376,702	261,603
4. Other edible fats (drippings)	154,328	31,002	269,605	53,162	289,686	49,967	2,623,955	423,798
Total	2,630,271	877,180	2,916,364	974,666	2,891,850	1,038,747	6,054,365	1,508,386

Table - 5

Import of soap into PNG

Quantity : 1,000 lbs.

Value : A \$

Year	Laundry soap in bar or cake form		Powder soaps		Toilet	Other
	Quantity	Value	Quantity	Value	Value	Value
1965 - 66	5,247	480,142	852	145,108	141,027	55,863
1966 - 67	5,642	523,701	995	161,997	158,429	70,037
1967 - 68	6,459	612,927	1,230	216,089	185,602	103,832
1968 - 69	6,310	615,741	1,232	237,211	196,137	103,684
6 months to 31 Dec. 1969	3,621	359,002	847	165,481	389,920 lbs. \$117,384	105,023 lbs. \$118,046

Table - 5 a (Contd.)

Import of soap and soap powders

Quantity : in lbs.  
Value : A \$

Item	Value of imports by main ports in A \$					
	Quantity	Total Value	Port Moresby	Rabaul	Lae	Medang
Soap, Toilet						
1961-62	n.a.	86,266	27,600	19,760	12,248	15,384
1965-66	n.a.	141,027	43,600	25,724	32,535	18,561
1966-67		158,429	50,932	28,336	27,927	19,024
1967-68		185,402	n.a.	n.a.	n.a.	n.a.
1968-69		191,136	n.a.	n.a.	n.a.	n.a.
Soap, household, washing, laundry (bars or cakes)						
1961-62	3,165,838	278,384	66,212	59,142	38,780	61,294
1965-66	5,249,002	480,353	127,783	83,053	117,538	83,466
1966-67	n.a.	523,701	124,701	85,339	162,903	65,083
Washing powders						
1961-62	543,626	86,276	35,744	16,174	13,514	10,894
2965-66	851,551	145,108	60,189	20,311	14,611	20,347

Table - 6

Import of Compound Detergents for  
Washing and Cleansing Purposes

Quantity : lbs.  
Value : in A \$

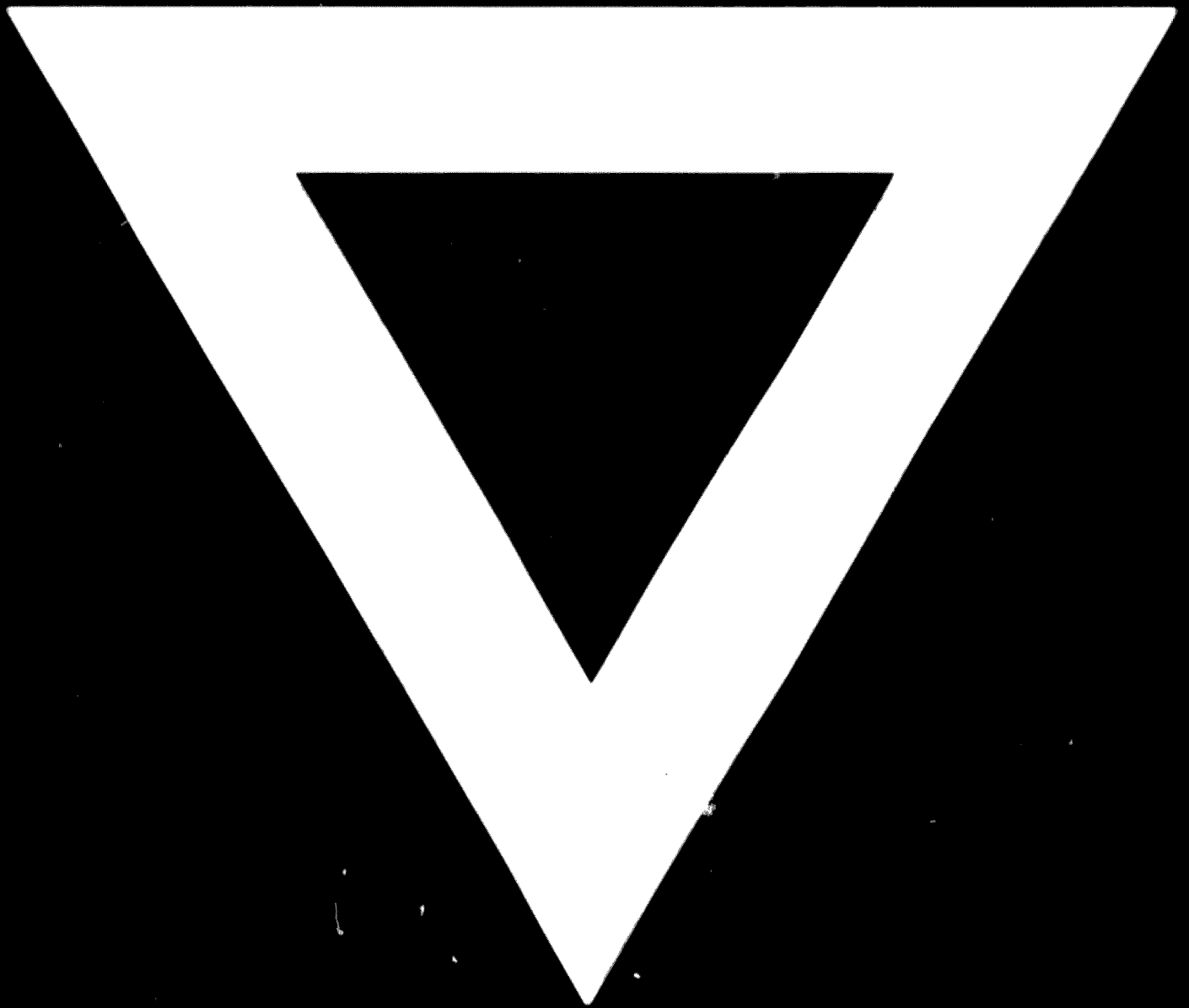
1967/68		1968/69	
Q	V	Q	V
lbs. 797,435	A\$ 103,750	lbs. 883,714	A\$ 127,082

SOAPS N.E.S. CLEANSING AND ASSISTING PREPARATIONS

-	103,834	-	103,684
	<u>207,582</u>		<u>230,776</u>



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