

AN ANALYSIS OF FACTORS AFFECTING PHILIPPINE  
COPRA AND COCONUT OIL EXPORTS

by

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.....to Mama, Ed, Bimbo and Jumbo, this piece of work is  
lovingly dedicated.

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## CHAPTER I

### INTRODUCTION

#### *An Overview of the Philippine Coconut Industry*

*The Philippine coconut industry has gone a long, long way since its hispanic beginnings. Then conceived only to provide the raw materials for rope for galleon rigging and cooking oil, the coconut today is one of the country's major contributors to the national economy.*

*People relying directly and indirectly on the coconut for livelihood are close to 16 million Filipinos. Of these, more than one million constitute its pillar-- the coconut farmers. From the backyard crop decreed to be planted by the Spanish colonizers, the number of coconut trees occupying 3.2 million hectares of land has progressively increased and now reached a total count of about 411.2 million, yielding some 10.4 billion nuts annually. The Philippines is truly a coconut palm-clad country, hence it is invariably referred to as "the coconut country."*

*With these, the Philippines ranks as the number one coconut products supplier in the world. Eighty to 85 percent of its total production is exported in the form of copra, coconut oil, dessicated coconuts, copra meal, coconut shell charcoal and activated carbon.*

*The industry is distinguished as the first and only agro-industrial endeavor not only to hit but to surpass the billion-dollar mark in foreign exchange earnings registered in 1979. In 1980, with the world market exerting adverse influences, it managed to plow in \$828.3 million*

*which is roughly 20 percent of the country's overall dollar earnings.*

*The coconut industry remains the Philippines' top dollar-earner for 1981 grossing around \$779.5 million in value and 1.95 million mt in volume. Although export receipts declined by 5.9 percent from 1980's \$828.3 million, volume increased by 14 percent from 1980's 1.71 million mt. By supplying more than 70 percent of the world's total requirements, the country-- as in the previous years-- maintained its position as the world's premiere supplier of coconut products.*

### *Research Objectives*

*Due to the characteristically volatile world market situation, the coconut industry needs to be reviewed and analyzed as a basis for making specific recommendations on market structure, trade policies and industry-wide technological improvements, for the purpose of improving the competitive position of the Philippines in the export market for coconut oil, copra and other export commodities. The industry itself is so complex, one must have a perspective of the directions undertaken for its development.*

*Specifically, the objectives of this paper are:*

- (i) To depict the productivity patterns of Philippine copra, coconut oil and other coconut by-products in relation to world production for the period 1960 to 1981;*
- (ii) To describe and examine the trends in local consumption, exports and prices of major coconut-based products for the period 1960 to 1981;*
- (iii) To review the historical development, objectives and underlying*

*rationale for past and present policies oriented towards the production and export of major coconut products;*

- (iv) To perform an econometric analysis using multiple regression on the major forces influencing the Philippine copra and coconut oil exports; and*
- (v) To derive some policy implications of the results obtained from the analysis.*



## CHAPTER II

### COCONUT AND ITS BY-PRODUCTS: TRENDS IN PRODUCTION, CONSUMPTION, EXPORTS AND PRICES

#### Productivity Trends

##### Coconuts

The Philippines has been the world's leading supplier of coconuts. In 1981, it accounts for about 30 percent of the world's total production (figure 1).

Philippine production over the last 24 years (1958-1981) exhibits a fluctuating trend. Peak harvest is in 1976 with 2.74 million mt copra basis, while lowest production is calculated at 1.06 million mt in 1959 (table 1). Output in 1981 is up by just a modest gain due to the impact of storm damage in some major coconut producing areas.

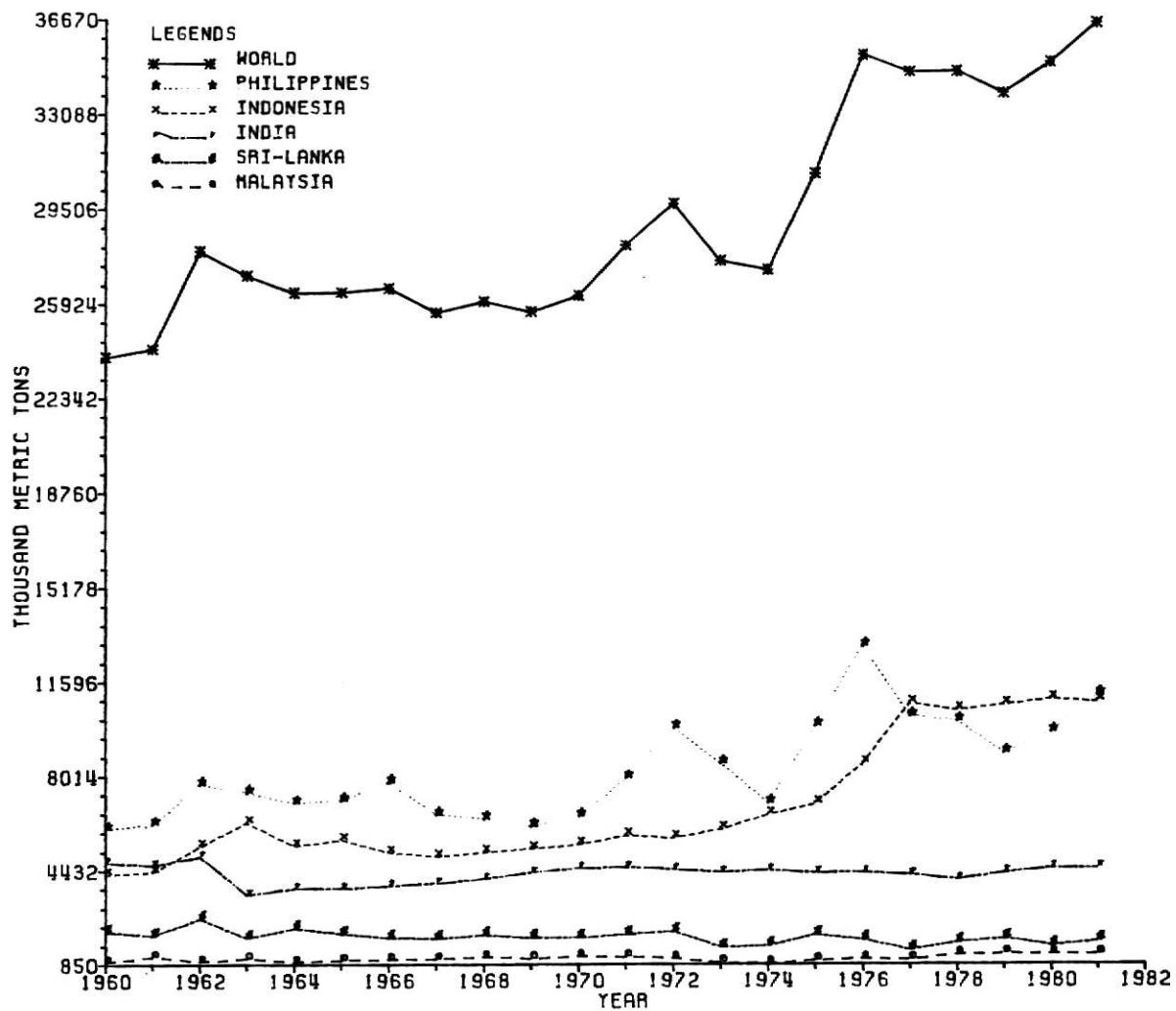
Growth rate in production is estimated at 4.6 percent annually. This is in spite of the wide fluctuations which occur yearly considering the seasonal characteristic of the crop owing mostly to adverse effects of typhoons and/or insufficient rainfall.

##### Copra

About half of the world's production of copra comes from the Philippines (figure 2). Other major producers are Indonesia, India, Malaysia, and Sri-Lanka.

Most of the coconuts harvested in the Philippines are converted

FIGURE 1  
PHILIPPINE COCONUTS VS. WORLD PRODUCTION  
1960-1981



SOURCE: FAO PRODUCTION YEARBOOK

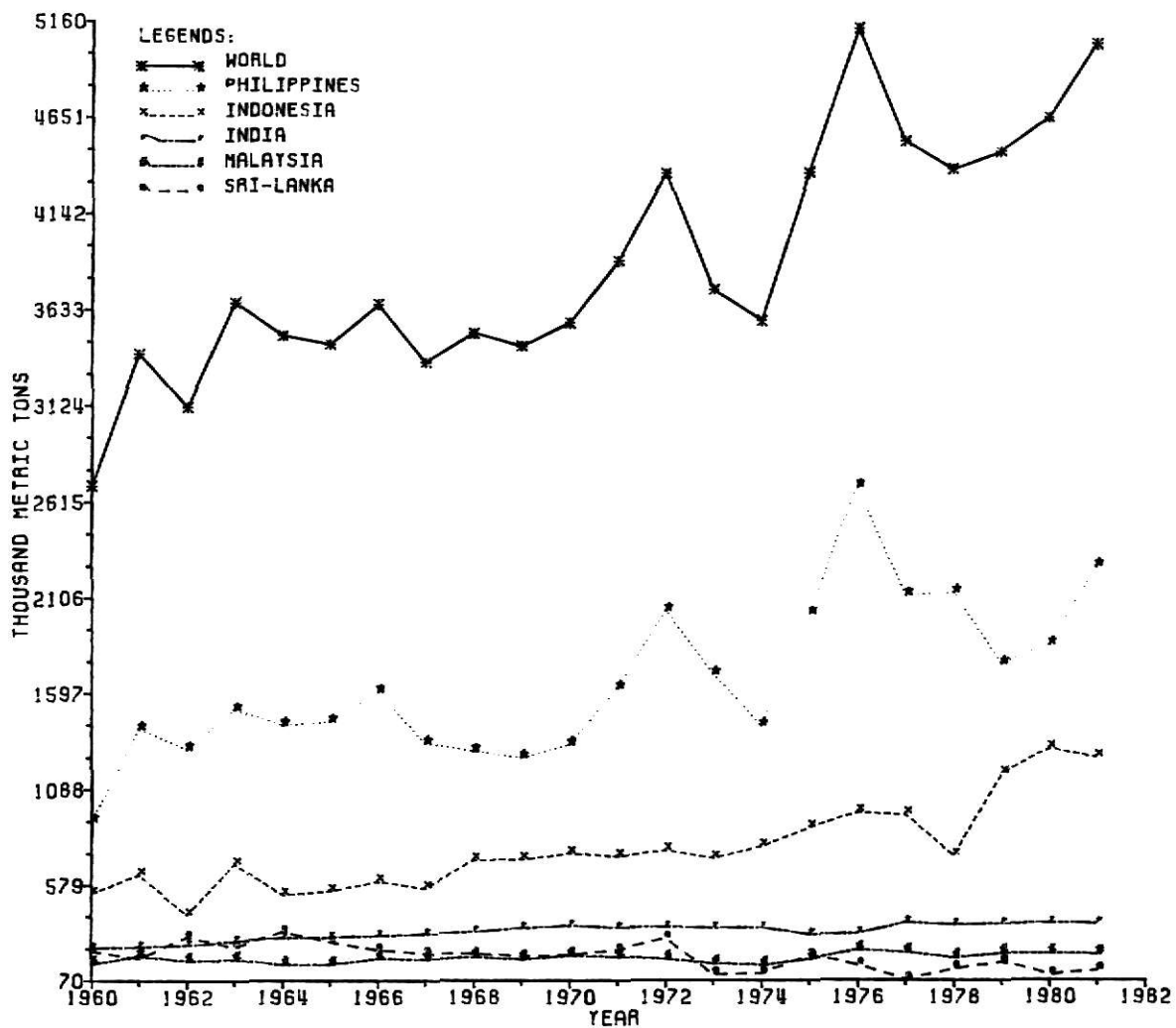
Table 1. Philippine coconuts: production in copra terms, 1958 to 1981

Year	Production (thousand mt)	Growth Rate (percent)	Index (1972=100)
1958	1,164.4		53.6
1959	1,064.6	(8.6)	49.0
1960	1,274.7	19.7	58.6
1961	1,198.2	(6.0)	55.1
1962	1,532.8	27.9	70.5
1963	1,751.9	14.3	80.6
1964	1,637.8	(6.5)	75.3
1965	1,586.1	(3.2)	73.0
1966	1,663.0	4.8	76.5
1967	1,507.6	(9.3)	69.4
1968	1,462.5	(3.0)	67.3
1969	1,259.9	(13.9)	58.0
1970	1,356.1	7.6	62.4
1971	1,755.7	29.5	80.8
1972	2,173.7	23.8	100.0
1973	1,871.3	(13.9)	86.1
1974	1,424.2	(23.9)	65.5
1975	2,198.7	54.4	101.2
1976	2,742.5	24.7	126.2
1977	2,439.5	(11.0)	112.2
1978	2,516.8	3.2	115.8
1979	1,902.8	(24.4)	87.5
1980 <sup>r</sup>	2,068.8	8.7	95.2
1981 <sup>p</sup>	2,306.3	11.5	106.1

Source: Philippine Coconut Authority (PCA)  
Trade and Markets Department

Notes: r = revised  
p = preliminary

FIGURE 2  
PHILIPPINE COPRA VS. WORLD PRODUCTION  
1960-1981



SOURCE: FAO PRODUCTION YEARBOOK

into copra. In 1981 copra accounted for 92 percent of total Philippine coconut production. This has averaged some 1.6 million mt a year, or a 5 percent growth rate for the past 22 years. Over the last 13 years, a dramatic shift from copra exportation to domestic crushing into coconut oil took place (figure 3).

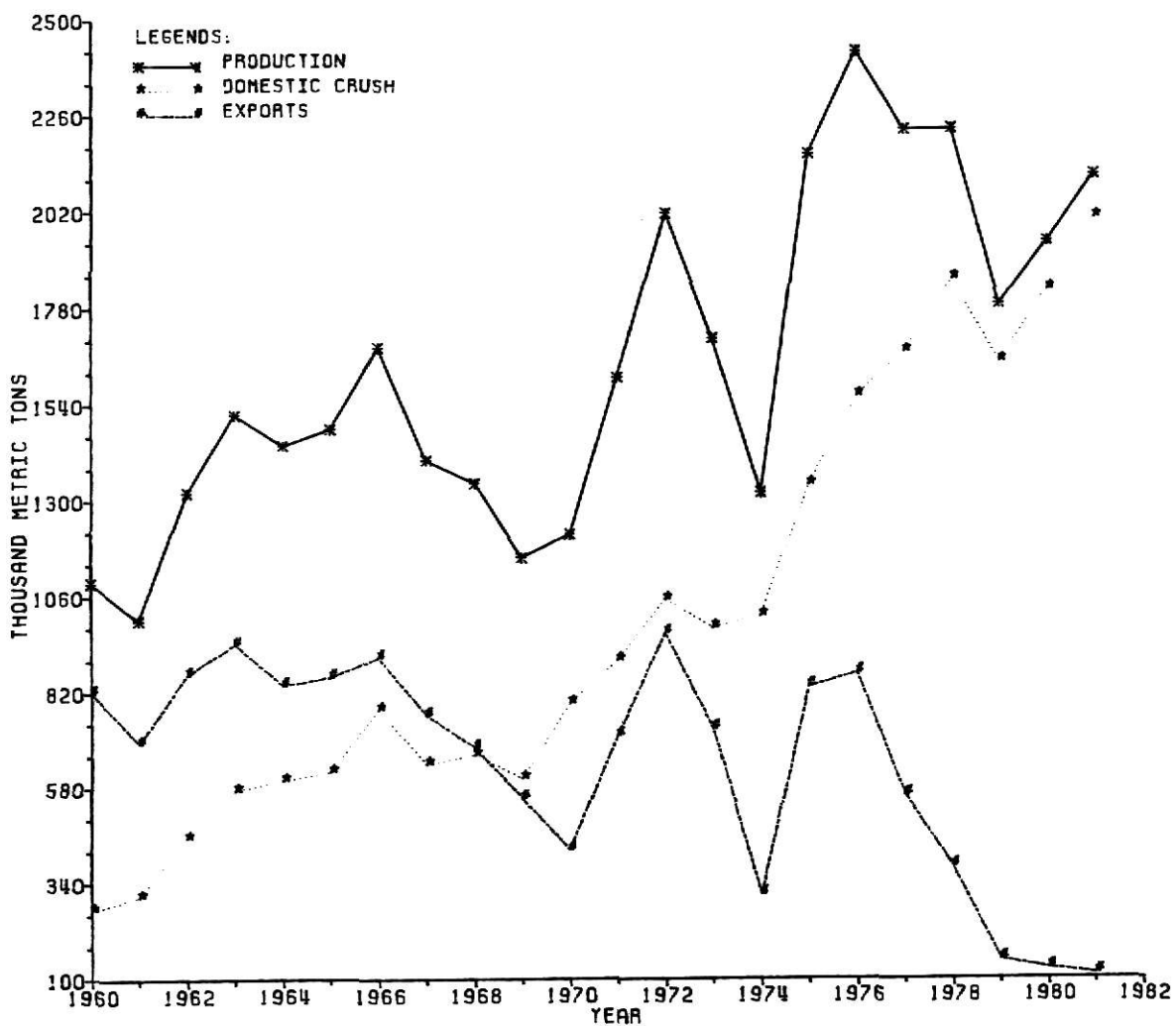
Copra production for domestic crushing reached maximum utilization in 1981 with total copra crushed at 2,012.9 thousand mt (or 94.8 percent of total copra production), which is far higher than any other year since 1960. Such marked increase in local crushing could have been encouraged by the extremely auspicious coconut oil export performance starting 1970, accompanied by the rationalization program via the establishment of more oil mills, coupled with their geographical dispersal in nearby areas of raw material availabilities.

#### Coconut Oil

One of the major problems of the coconut industry is its inability to meet world oil demands. It is perhaps one of the reasons why coconut oil provides only 5.8 percent of the world's fats and oils trade (figure 4), with the Philippines accounting for the bulk produced and traded yearly (figure 5). Other big producer exporters include Indonesia, Sri-Lanka and Papua New Guinea.

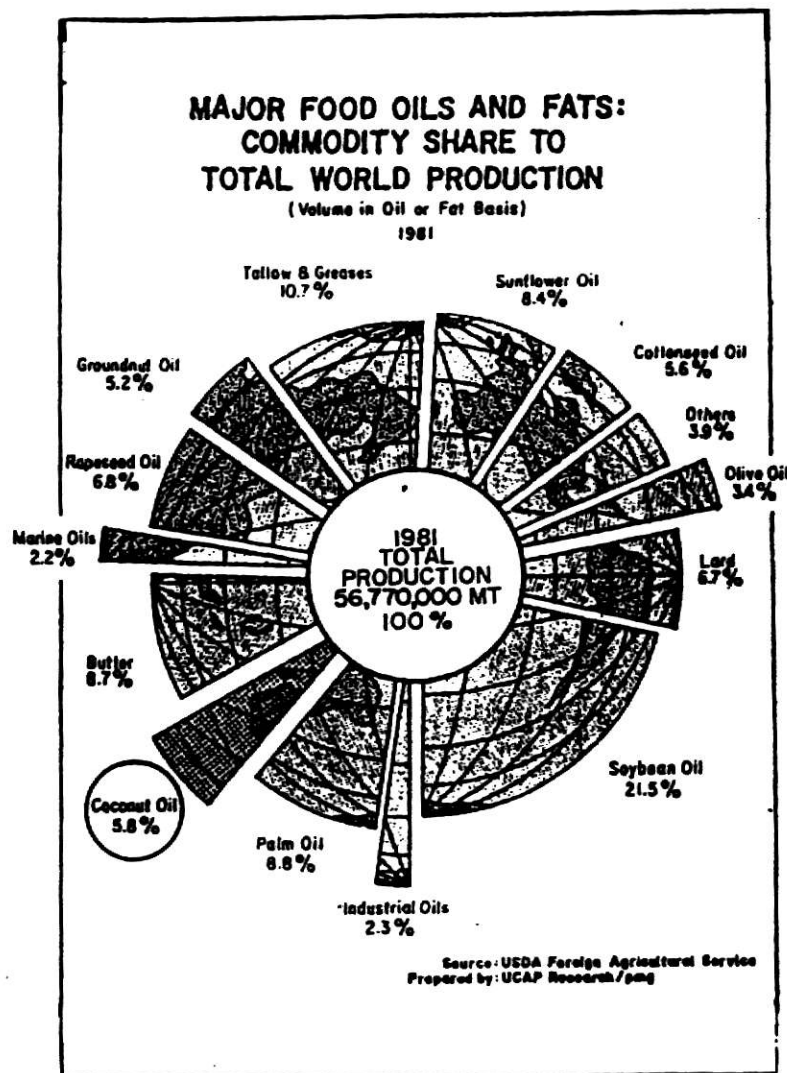
Philippine coconut oil production has suffered less fluctuations than copra since the government programs favored the gradual shift from copra to coconut oil exports. Thus, as more oil mills were established, crushing activities tended to readily increase despite the normal fluctuations in coconut output. For the last 22 years, the rate of increase

FIGURE 3  
PHILIPPINE COPRA: SUPPLY AND USE, 1960-1981  
IN COPRA YEARS



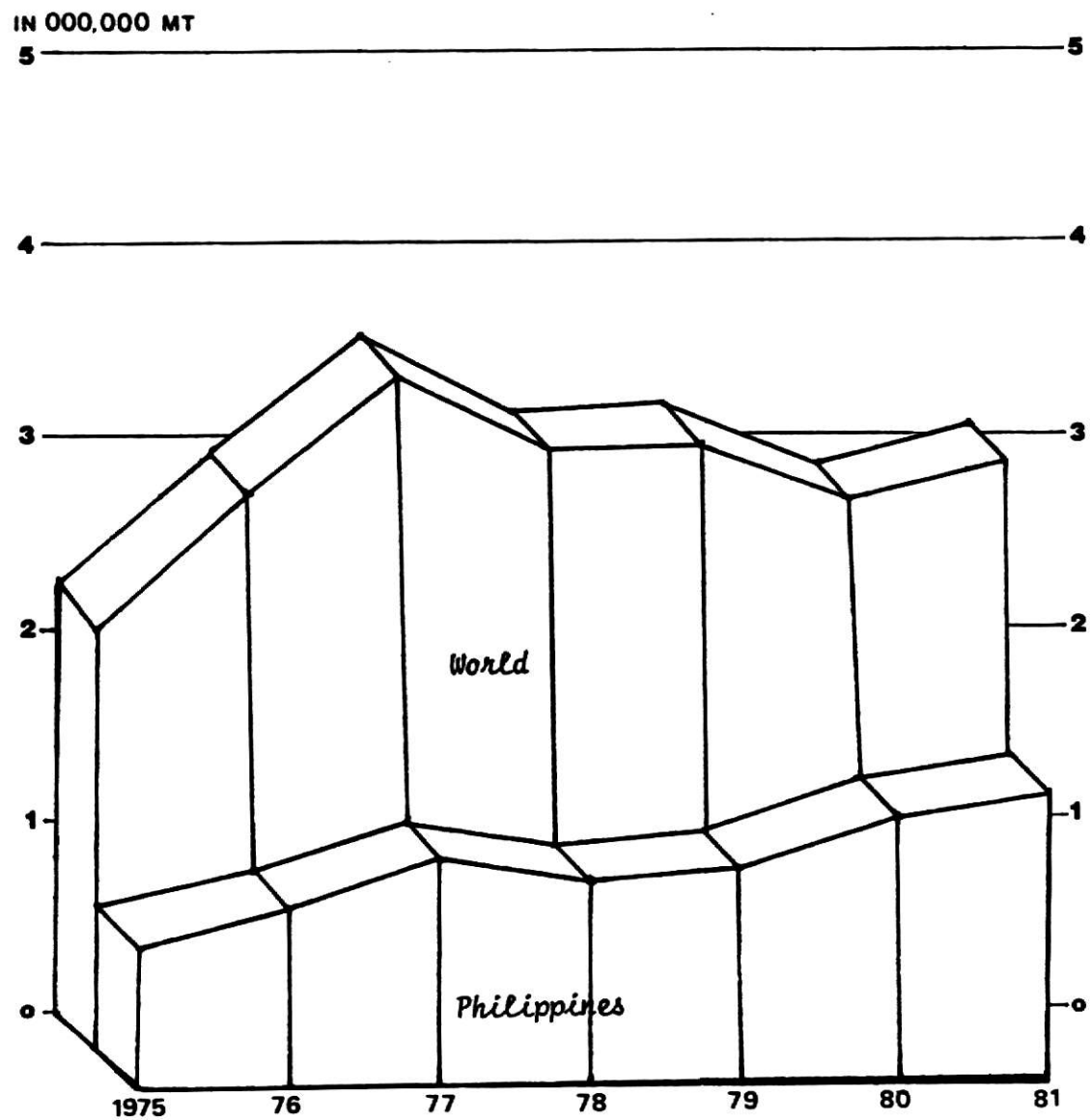
SOURCES:UCAP, PCA AND IAPMP

Figure 4



*Figure 5*

**COCONUT OIL: WORLD PRODUCTION VS PHILIPPINE PRODUCTION**  
(Volume in Million Metric Tons)





in coconut oil production is 11 percent annually which is about three times the rate of increase in coconut production.

#### *Dessicated Coconuts*

The Philippines is the principal supplier of dessicated coconuts in the world market (figure 6). Virtually, all the dessicated coconuts that enter the United States originate from our country.

Philippine production of food grade dessicated coconuts started 50 years ago. The result is a product of excellent quality equal to the standard set forth by the United States and the European countries.

With six operating plants, the dessicated coconut sector has the capacity of producing some 100 thousand mt annually. Peak production is in 1977 with 98.6 thousand mt (figure 7). Average yearly production is placed at 73.2 thousand mt or 2.8 percent growth rate.

#### *Copra Meal*

The Philippines likewise dominates the world production of copra meal. The 55 operating mills in 1979 have the capacity of producing some 1.1 million mt of copra meal yearly. Average annual production is estimated at 338.3 thousand mt or 12 percent growth rate.

Most of the copra meal produced are exported and what remains is used domestically as feeds (figure 8).

#### Consumption Trends

The coconut industry in the Philippines-- unlike other major producing countries like Indonesia, India, Sri-Lanka, etc.-- is export-oriented. Export shipments have increased in parallel magnitude with

Figure 6  
DESICCATED COCONUT: WORLD PRODUCTION  
(Volume in thousand Metric Tons)

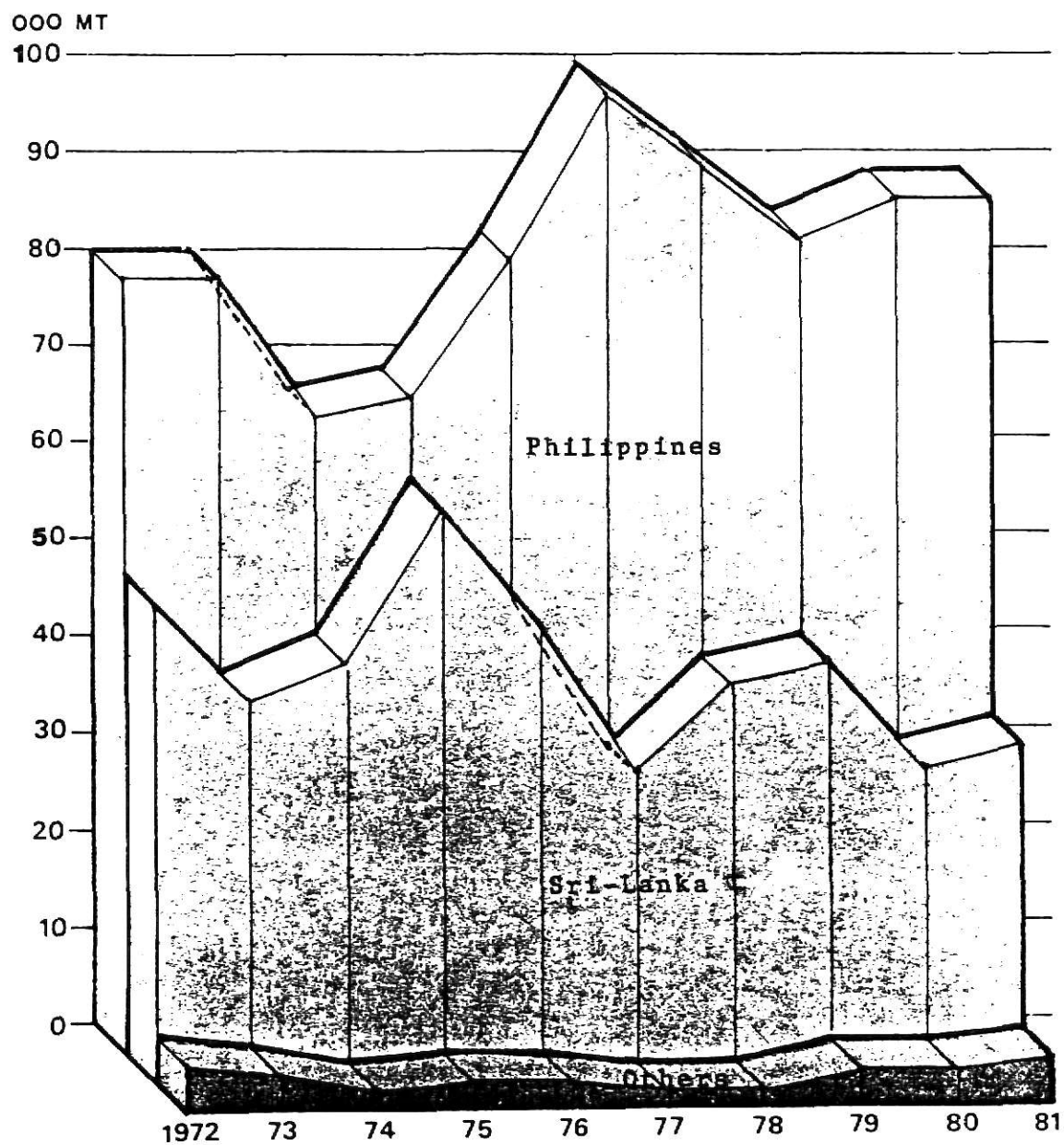
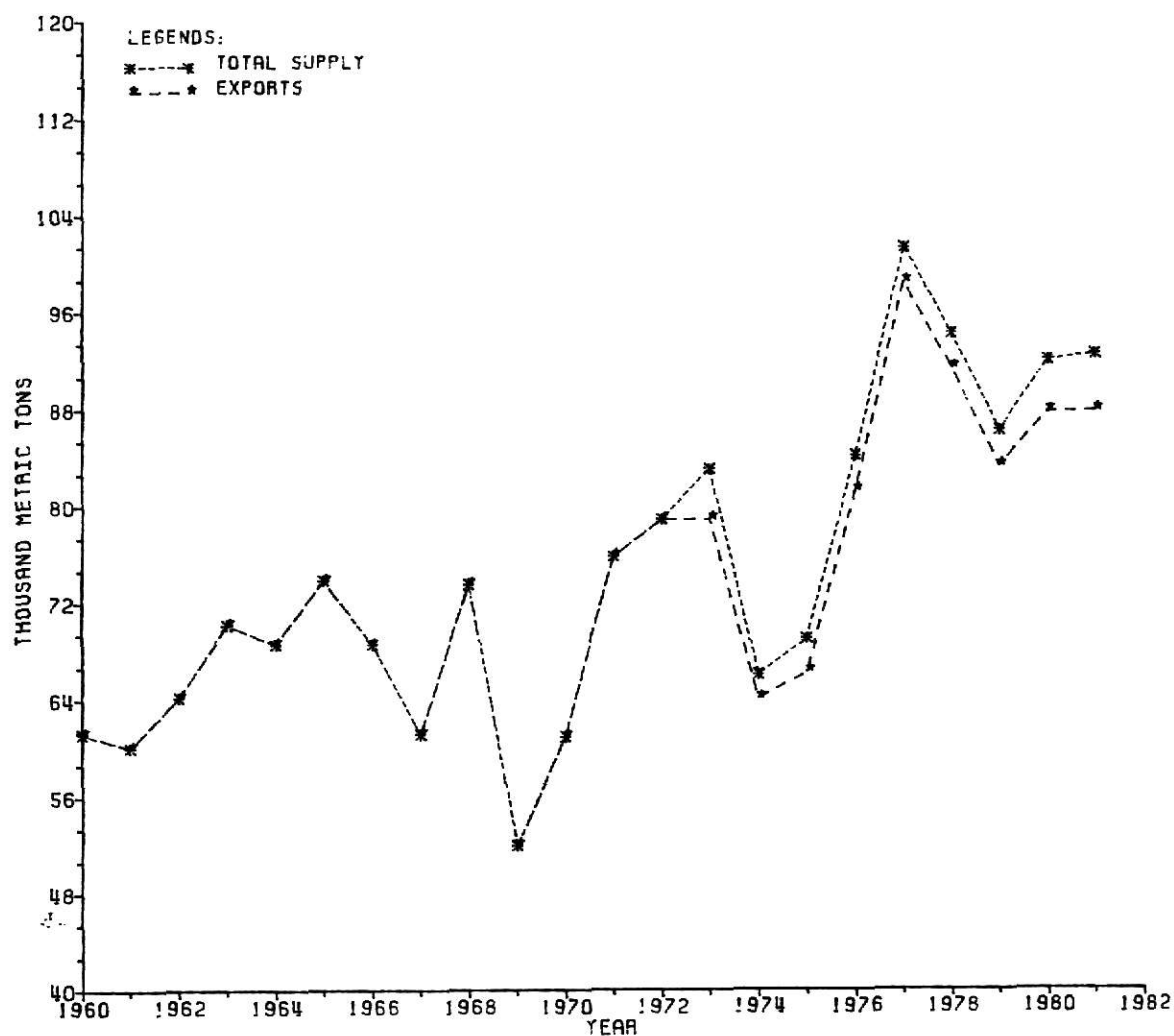
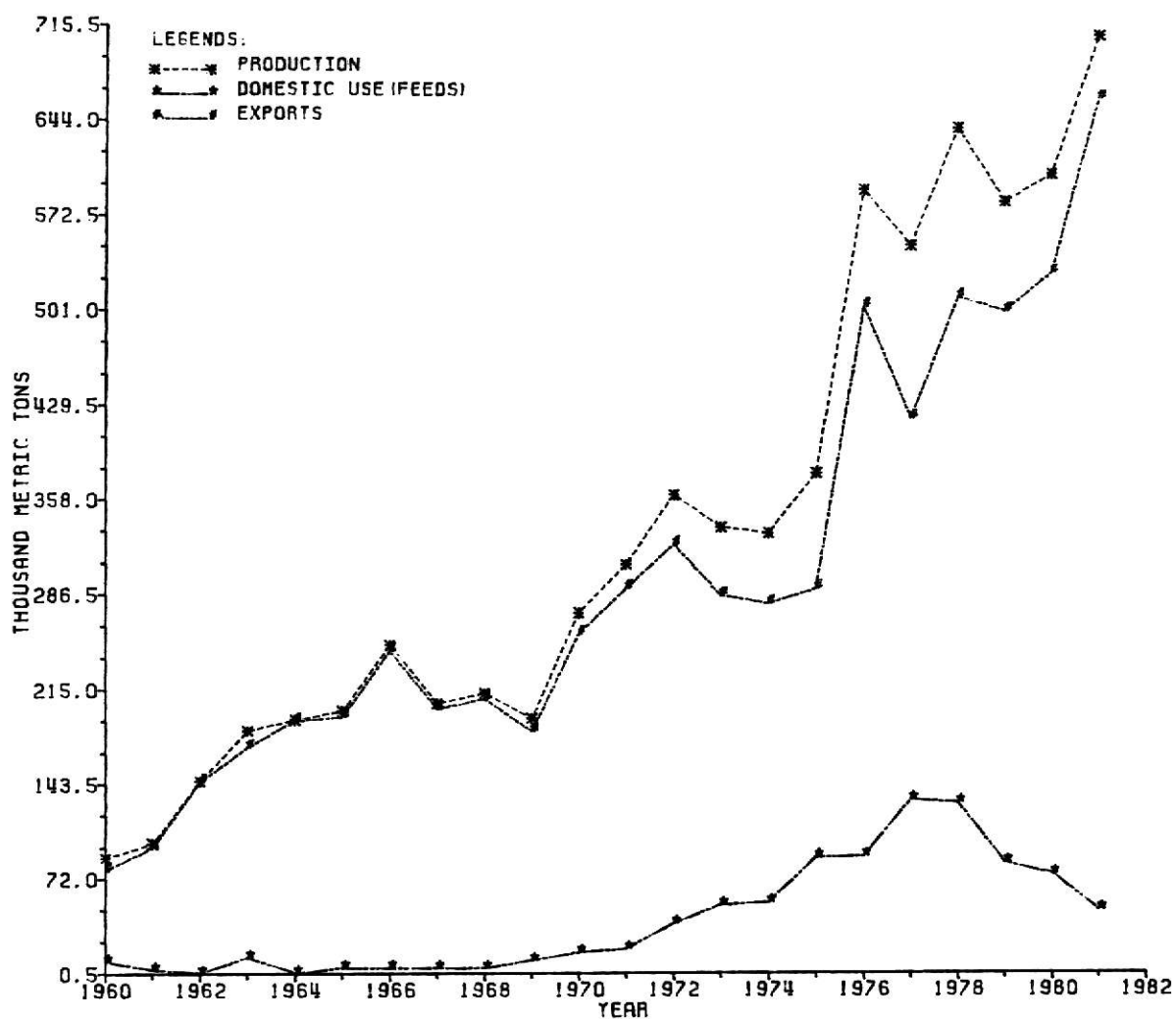


FIGURE 7  
PHILIPPINE DESSICATED COCONUTS: SUPPLY AND USE, 1960-1981



NOTE: IT IS ASSUMED THAT ALL DCN PRODUCED WERE EXPORTED.  
SOURCES:UCAP, PCA AND IAPMP

FIGURE 8  
PHILIPPINE COPRA MEAL: SUPPLY AND USE, 1960-1981



NOTE: IT IS ASSUMED THAT FEEDS=PRODUCTION - EXPORTS.  
SOURCES OF DATA:UCAP, PCA AND IAPMP

production growth, while consumption, though adequate in meeting local requirements, has remained minimal compared to total productions (figure 9).

Varying percentages to total accentuate the fluctuating nature of production. Over the last 22 years (1960-1981), total exports of copra plus equivalents in copra of coconut oil and dessicated coconut exports (at 62 percent and 83 percent recovery factors, respectively) aggregate 32.3 million mt, while local consumption totals only 7.3 million mt. Twenty-two year performance indicates an average of 81.1 percent for exports and 18.9 percent for domestic use.

### Export Trends

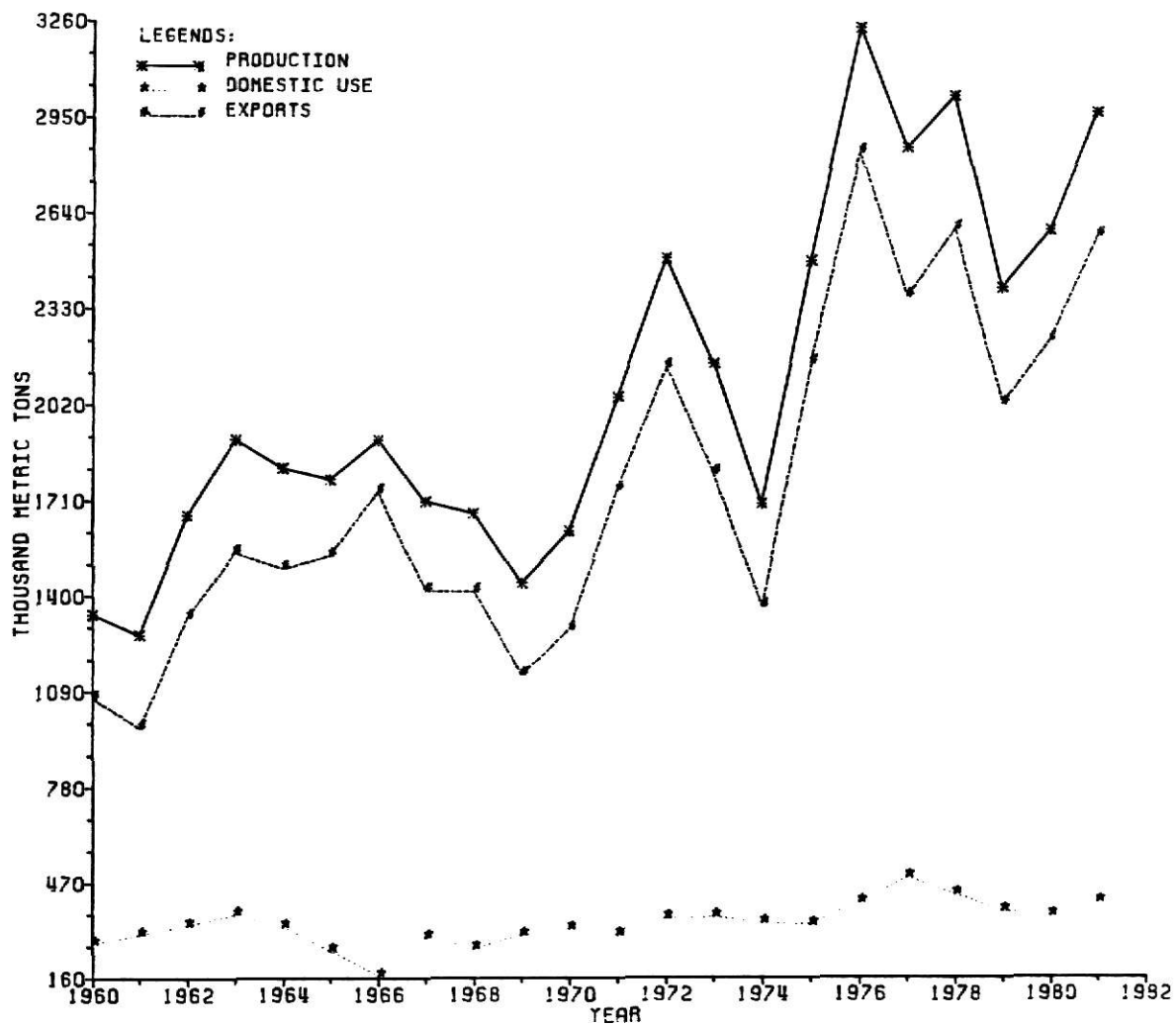
#### Export Volume

Coconut oil tops the list of coconut exports. Exportation was at its peak in 1981 when it topped the lists not only of coconut products but of all Philippine products exported. Peak exportation reached almost 1.6 million mt (copra terms), the equivalent of 76.5 percent to total coconut exports (figure 10).

Copra ranks second in coconut exports. However, a rather substantial fall in copra exports occurred in 1970 and 1974 and continued its downswing since 1977.

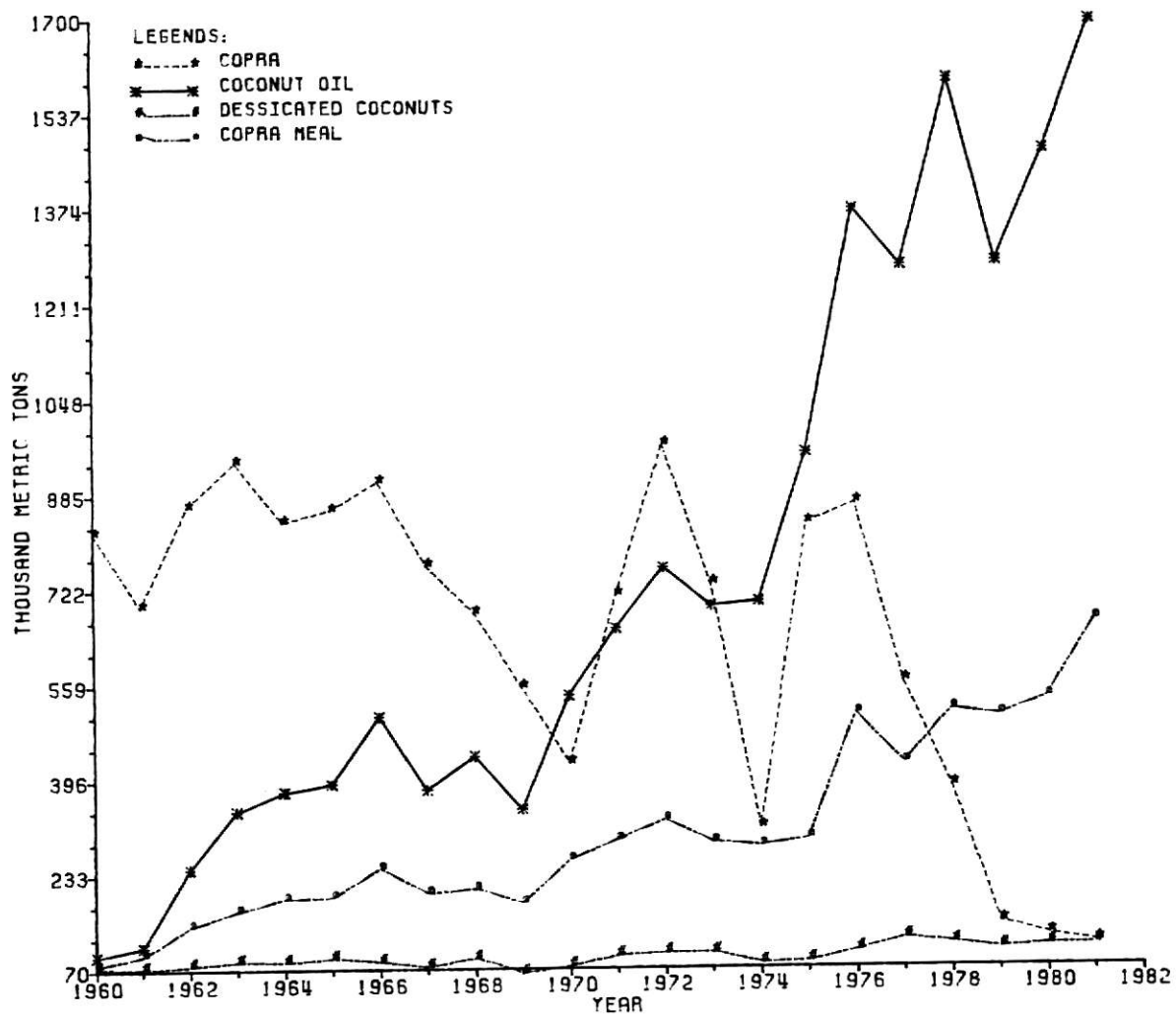
Coconut oil exports exhibit a fluctuating trend (figure 11). Reduced export volumes may be due to the time-honored ploy by buyers abroad of hedging their actual volume purchases in anticipation of lower prices, gambling on an increasing world supply availabilities. It is a legitimate trading operation, a deliberate risk by buyers of running down current

FIGURE 9  
PHILIPPINE COCONUTS: SUPPLY AND USE, 1960-1981  
IN COPRA TERMS



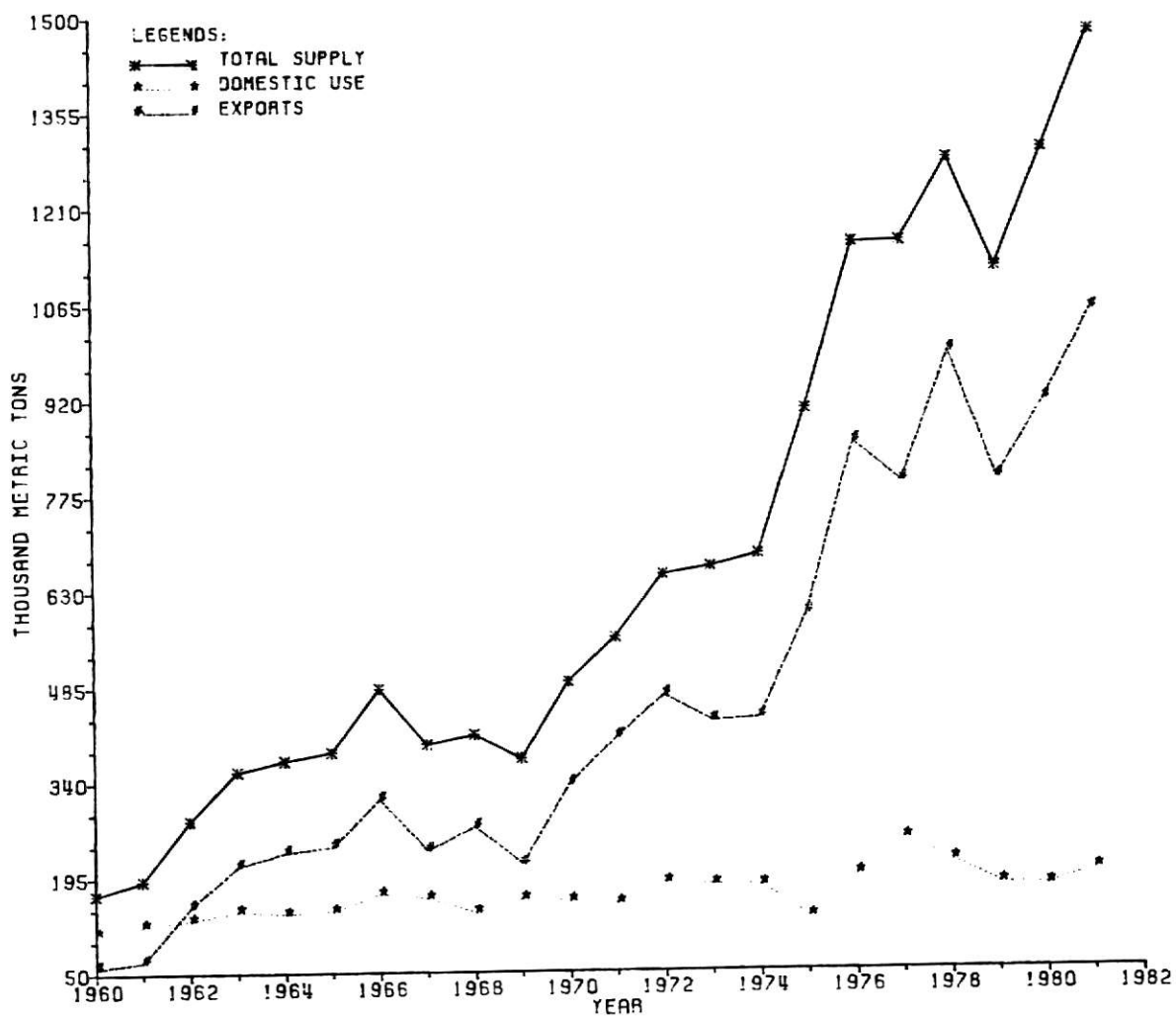
SOURCES:UCAP, PCA AND IAPMP

FIGURE 10  
PHILIPPINE COCONUT PRODUCTS: EXPORT VOLUME, 1960-1981  
IN COPRA TERMS



SOURCES: UCAP, PCA AND IAPMP

FIGURE 11  
PHILIPPINE COCONUT OIL: SUPPLY AND USE, 1960-1981  
OIL BASIS



SOURCES:UCAP, PCA AND IAPMP



inventories and/or operating on a "hand-to-mouth" basis.<sup>1</sup>

As oil export volume slackened, mills turned to the export of copra, more than doubling the small volume exported in January-September 1981. The free export of copra was later banned to assure more adequate supplies for the domestic mills.

Some increase in the volume of coconut products exports is expected this year unless storm damage or a rapidly expanding coco-diesel program restricts the export.

Dessicated coconuts peak shipment was in 1977 at 98,563 mt, valued at \$90.7 million. Exports to Western Europe substantially increased during 1977 and 1978 due to production difficulties experienced by Sri-Lanka.

The demand for copra meal stems from the shortage of animal feeds particularly during the winter season in temperate countries. Being an animal feed, it competes with the rest of oilseed meals and grains traded in the world market.

Although there have been slight fluctuations in volume shipments for copra meal, a steady increase in earnings was maintained for the past 22 years (figure 12).

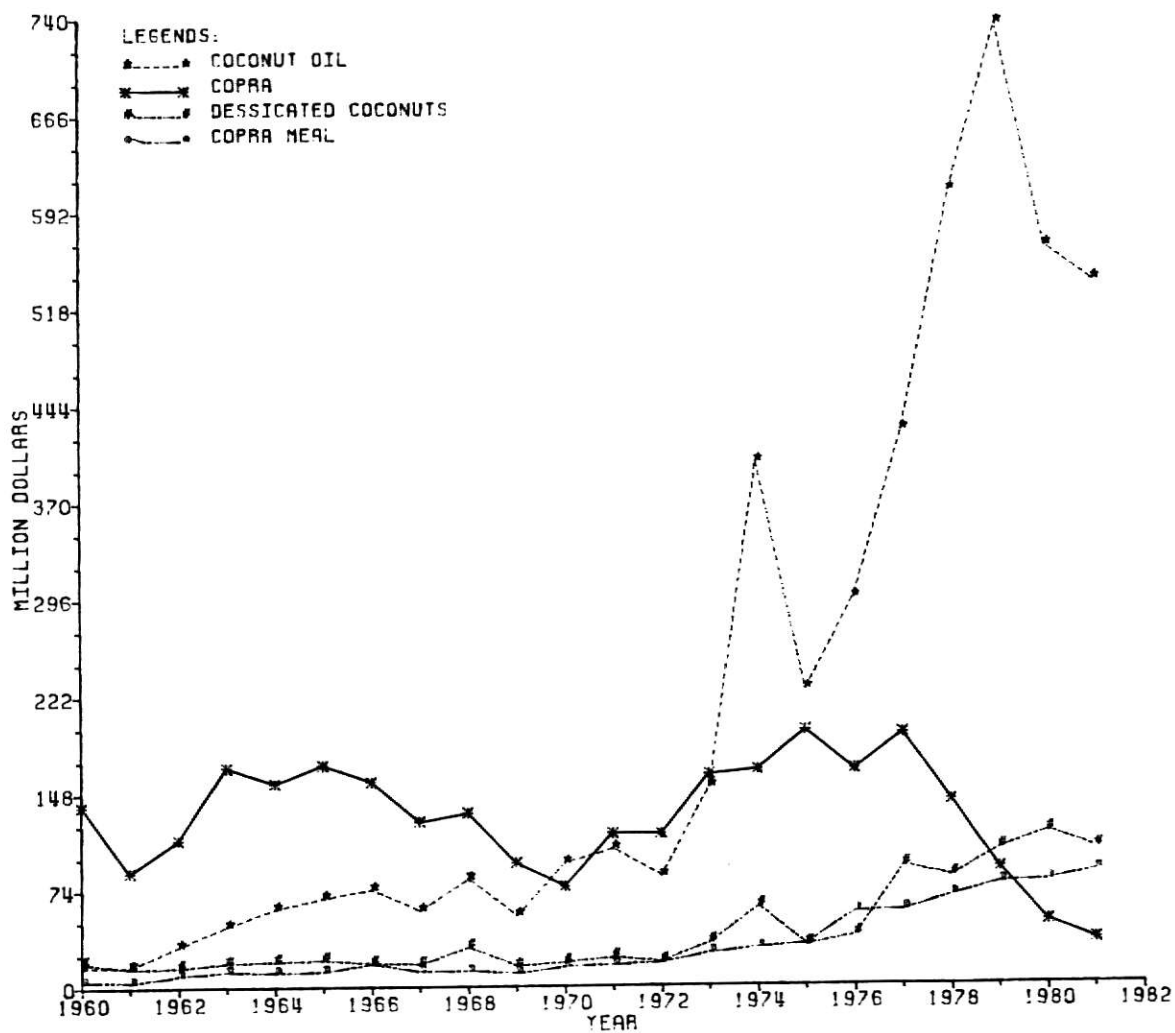
#### Export Earnings

The leading dollar earners based on percentage share to total earnings are coconut oil, copra, dessicated coconuts and copra cake/meal (figure 12).

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<sup>1</sup>G. P. Reyes, Jr., Coconut Farmers Bulletin, July-December, 1979.

FIGURE 12  
 PHILIPPINE COCONUT PRODUCTS: EXPORT VALUE, 1960-1981  
 IN MILLION U.S. \$, FOB



SOURCES: UCAP, PCA AND IAPMP

Total earnings from Philippine coconut exports for 1978 reached \$908.2 million. The increase in earnings came despite the minimal increase in production. These favorable earnings were attributed to a number of reasons:

- (i) the newly forged trading relationships between China and the United States and continued speculation as to soybean purchases by the Soviet Union and India;
- (ii) general inflation psychology observed to have been aggravated by the Iranian situation.

But improvement in the value of exports were mainly due to high prices in the export market.

Then in 1982, coconut export earnings dropped low due to the fall in world market price for coconut oil. Despite the decrease in export receipts, the coconut industry was still the country's top dollar earner during 1982. The industry realized \$206 million, followed by mineral products (\$158.3 million), sugar (\$154.4 million), and forest products (\$72 million).

#### Export Markets

Market development plans have been drawn to increase trading activities with non-traditional markets. The Philippines not only maintained its markets in the United States and Western Europe but also developed and expanded shares within them. It also penetrated new markets such as the Middle East bloc and the Socialist countries, in search of better price and wider markets. Non-traditional markets also include Indonesia, Japan and Korea.

The copra exports of the Philippines are principally absorbed by the Western Europe bloc. Other major buyers are the USSR, People's Republic of China (PROC) and Japan.

Majority of the country's coconut oil exports are directed to the United States and Western Europe. However, increased trading of coconut oil with non-traditional markets such as the USSR and PROC has been markedly observed. Coconut oil exports to markets other than the United States and Western Europe accounted for 36.5 percent, 36.3 percent to the United States and 27.2 percent to Western Europe.

Crude coconut oil is traded in the United States and Europe mainly through brokers in Rotterdam, Hamburg, New York, San Francisco or Los Angeles who have established a fairly organized communication network with Philippine traders on one hand and buyers abroad on the other.

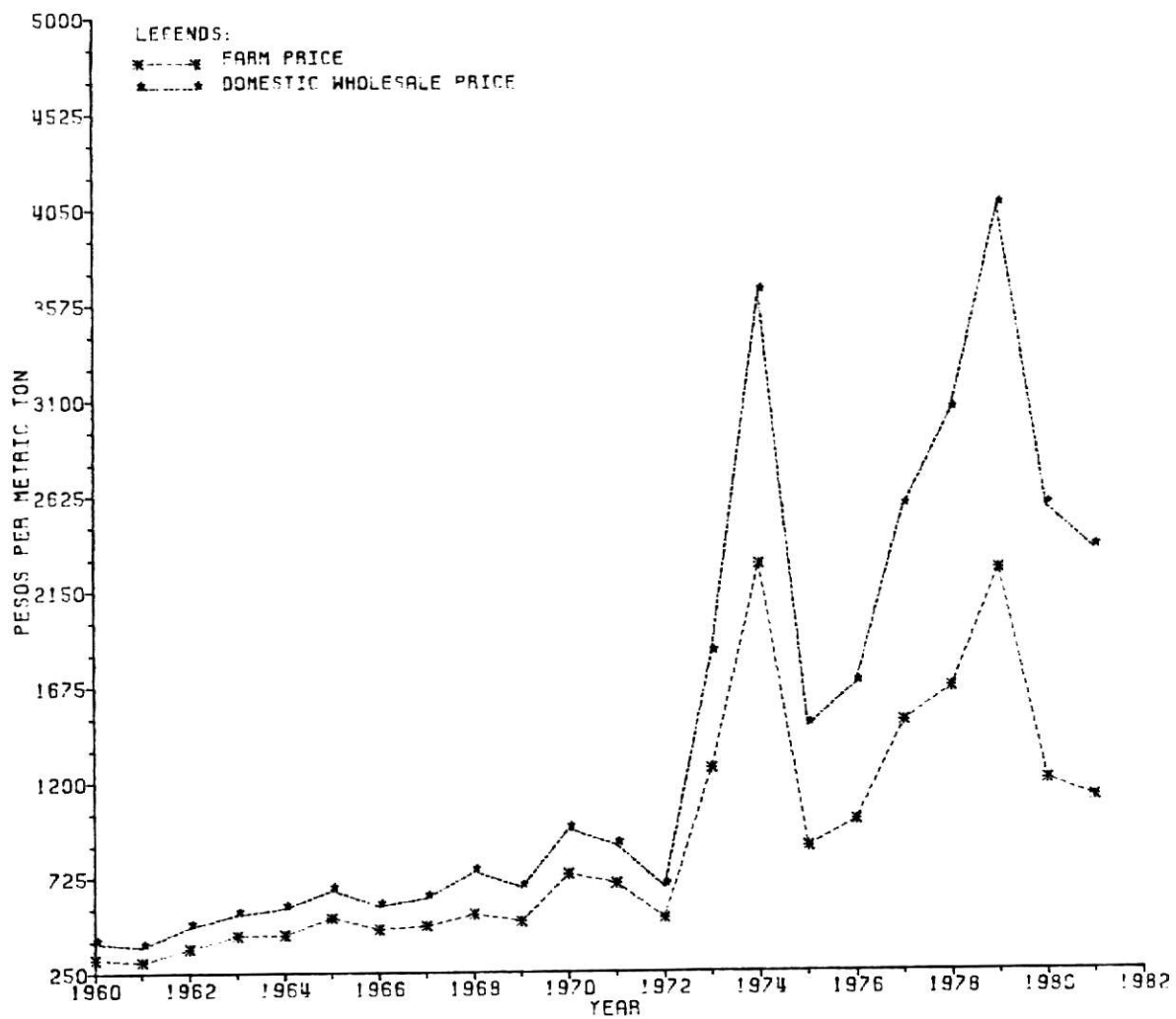
Of the four major export commodities of the industry, dessicated coconut is the most diversified market-wise. Philippine dessicated coconut is currently being channeled to more than 60 markets worldwide. The largest market of dessicated coconut is the United States and Canada, followed by the European bloc and the Asia and Pacific countries. The Middle East bloc is also apparently a growing market for this commodity.

Almost all of the Philippine copra meal exports find their way to Europe, with Japan importing minimal volumes over the last decade.

#### Price Trends

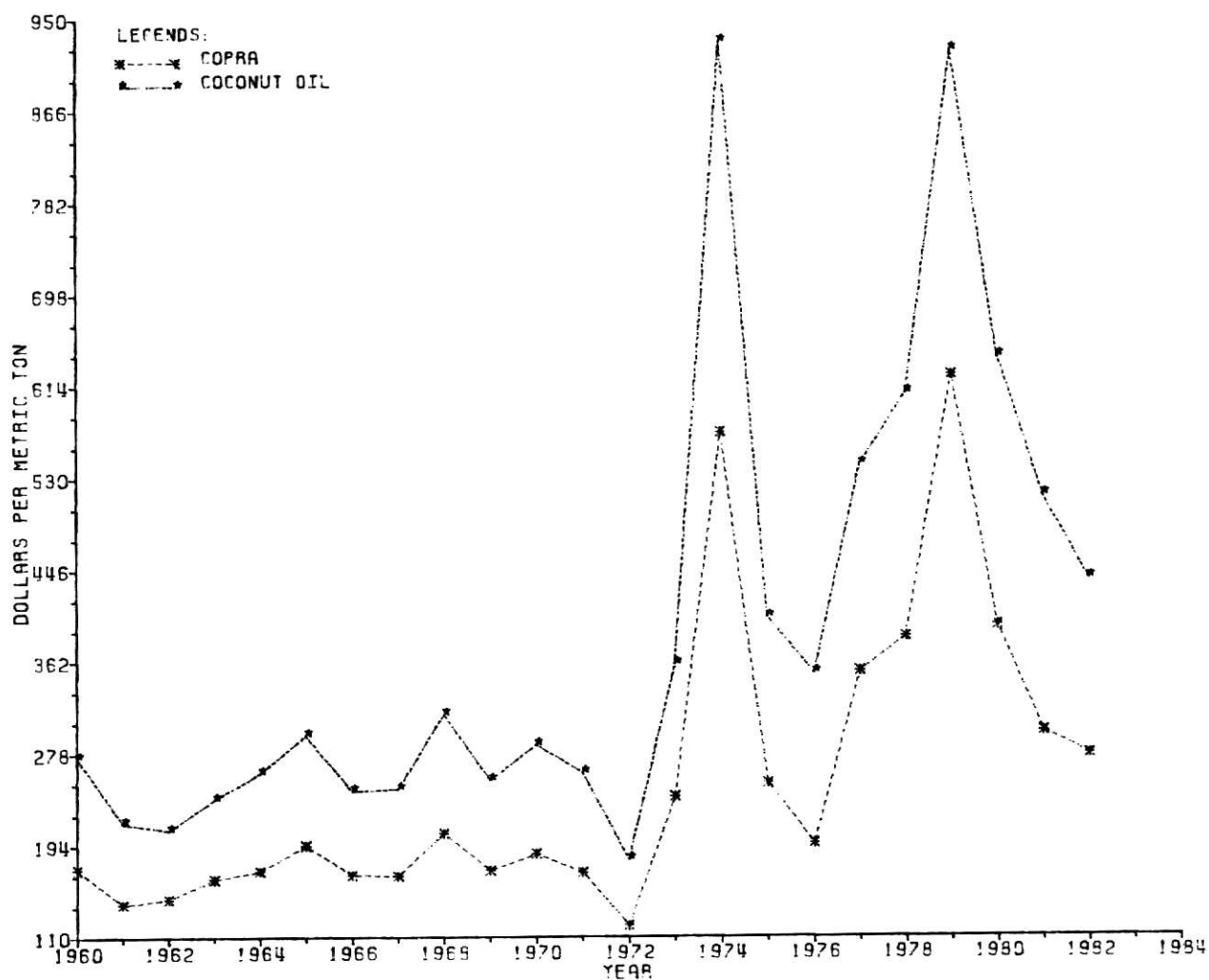
The domestic and export prices of copra exhibited similar patterns from 1960 to 1981 (figures 13 and 14). High prices in the world fats and oils due to global inflation buoyed copra and coconut oil prices to me-

FIGURE 13  
COPRA RESECADA: FARM PRICES AND DOMESTIC WHOLESALE PRICES  
PHILIPPINES, 1960-1981



SOURCES: UCAP, BAECON AND IAPMP

FIGURE 14  
AVERAGE EXPORT PRICES, FOB U.S. \$/MT  
1960-1982



SOURCES: UCAP, PCA AND IAPMP

teoric heights in 1974 (figures 13 to 15). Other reasons might be due to the drought which affected foreign countries that are producing competing oil products, coupled with the dollar devaluation which caused panic buying by foreign investors.<sup>2</sup>

Peak in domestic and export prices for copra and coconut oil during 1979 were due to:

- (i) expectations of a decline in Philippine coconut production beginning the first quarter of 1979 due to insufficient rainfall in the preceding year;
- (ii) forecast of 15 percent drop in Indonesian production; and
- (iii) expected sharp decline in palm production by as much as 11 percent due to the inability of West Malaysian and Nigerian outputs to recover.

Other reasons might be:

- (i) weakening US dollar as against major international currencies;
- (ii) uncertainties as to developments in Philippine fiscal measures on copra, coconut oil and copra meal/cake exports.

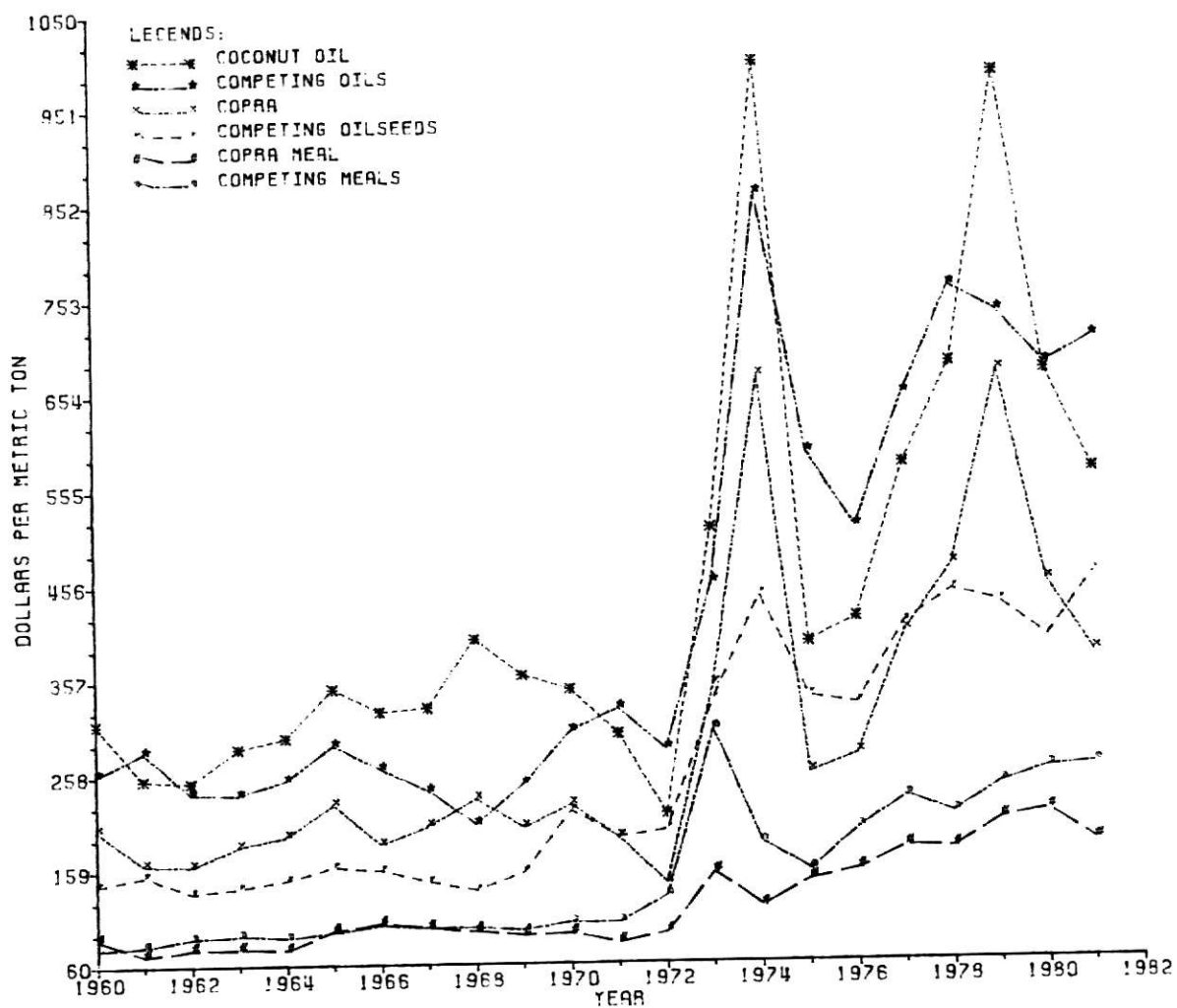
Then the following years saw a decline in prices. Price declines in coconut products in the world market may be due to the following factors:

- (i) the bumper harvests of coconut and other major oilseeds in other countries, increasing the total world supply of fats and oils;
- (ii) the much higher gains in the production of soybeans and sun-

---

<sup>2</sup>E. E. Dumayas, "A Supply Response Study of Coconuts in the Philippines," MS Report, Kansas State University, 1983.

FIGURE 15  
WORLD PRICES OF FATS AND OILS  
1960-1981



SOURCES OF DATA: UCAP, PCA AND IAPMP



*flower; and*

*(iii) the slump which follows a period of extremely high prices.*

*The adverse external influences thus exerted a downward pressure on the domestic prices of copra and as a response, a price support scheme was adopted and implemented which buoyed copra price, even if only temporarily. This partially explains the relatively comfortable P166.60 per 100 kgs of copra for 1981 despite the uncertainties in domestic and foreign trading experienced toward the last quarter of 1981.*

*Several factors determine the price of dessicated coconut. These are the demand and competition in the food ingredients market and the prices of other nuts and its complementary ingredients like sugar and chocolate.*

*Prices of Philippine dessicated coconuts have consistently moved upwards. From an initial price of \$299 per mt in 1969, it rose to \$1,329 per mt in 1980.*

*For copra meal, there were comparative constant increments in export prices over the past 22 years.*

## CHAPTER III

### POLICIES AFFECTING THE PHILIPPINE COCONUT INDUSTRY

#### External Policies<sup>3</sup>

##### *Pre-war Policy Instruments*

The pre-war policy instruments related to the coconut sector were usually in the form of taxes and trade tariffs. In 1809, the Spanish government generated \$221,446 from licensing fees (\$45,200 per franchise) which were paid by the entrepreneurs desiring to monopolize tuba sales within specific geographic areas. The United States did not impose any tariffs on copra imports but designed a quota on Philippine exports of coconut oil amounting to 200,000 long tons. The coconut oil quota, however, was never binding. Nevertheless, the Philippine copra exports were subjected to a US processing tax of \$0.03 per pound to protect the domestic oil-based substitute producers. Taxes paid on the processing of Philippine copra were credited to a special account during the period 1939 to 1946. The Philippine government could withdraw from the account given a 90-days written notice and provided that the funds withdrawn shall not be used to finance any subsidy payments to domestic producers of copra, coconut oil and other allied products.<sup>4</sup> During the period 1939

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<sup>3</sup>The discussion in this section relating to policies prior to 1970 relies heavily on the works of Nyberg and Recto.

<sup>4</sup>United States Internal Revenue Act, 1934, Section 602.5.

to 1946, the cumulative Philippine withdrawals from the processing tax account amounted to \$131.5 million.

#### *Post-war Policy Instruments*

In the post-war era, the major US trade policy affecting the coconut industry was the Laurel-Langley Agreement (effective January 1, 1956). Under the latter trade package, the Philippine exports of coconut oil to the United States were subjected to the following tariff-free quotas:

<u>Period</u>	<u>Magnitude (in thousand long tons)</u>
Prior to 1963	200
1963-64	160
1965-67	120
1968-70	80
1971-73	40

Imports in excess of the quota were covered by a preferential duty rate of \$0.01 per pound if entered on or before December 31, 1973. In the case of copra meal, the schedule of preferential treatments was:

<u>Period</u>	<u>Proportion of US Duties Application (in percent)</u>
1956-58	5
1959-61	10
1962-64	20
1965-67	40
1968-70	60
1971-73	80

The full US tariff on copra meal amounted to \$0.003 cent per pound. On the other hand, the processing tax on Philippine copra-based oil products was abolished in 1966. Hicks<sup>5</sup> cited three reasons, i.e.;

(i) Industrial users were better off with the availability of cheap supply of foreign oil.

(ii) The United States has become a major exporter of oil.

(iii) Quality deterioration of copra exports will be minimized.

Also, copra has always been on the duty-free list of US imports.

In the case of the European Economic Community (EEC) who accounts on the average for about 40 percent of the world fats and oils trade, their tariff structure is geared to protect their domestic oilseed producers.<sup>6</sup> As shown in table 2, except for France, tariff duties on copra imports are seldom imposed. It is basically coconut oil which is taxed heavily. The tariff regulations of the United Kingdom levy a 15 percent duty on coconut oil of non-Commonwealth origin.

### Internal Policies

Efforts of the Philippine government to promote the growth and development of the coconut industry dates back to 1940 when the National Coconut Corporation (NACOCO) was created through Commonwealth Act No. 518.

The major domestic policies pursued during 1950-1969 are given on table 3. Note that the basic objectives of the policies are to enhance

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<sup>5</sup>G. Hicks, "The Philippine Coconut Industry: Growth and Change, 1900-1965."

<sup>6</sup>Commonwealth Economic Committee (London), Vegetable Oils and Oilseeds, A Review, No. 18 (1968).

Table 2. Tariffs on copra and coconut oil by the European Economic Community and its member countries

Product	Common External Tariffs			Benelux			France			Germany			Italy		
	Free	Free	Free	Common Market <sup>a</sup>	Greece	Others	Common Market <sup>a</sup>	Others	Others	Common Market <sup>a</sup>	Greece	Others	Common Market <sup>a</sup>	Others	Others
<u>per cent ad valorem</u>															
Copra	Free	Free	Free	Free	Free	Free	3.0	3.0	3.0	Free	Free	Free	Free	Free	Free
Coconut Oil															
For technical or industrial purposes other than for the manufacture of foodstuffs															
Crude	5	2	5.0	5.0	5.0	5.0	6.0	9.0	9.0	0.2	1.5-6.5 <sup>b</sup>	3-8 <sup>b</sup>	4	7	
Refined	8	2	5.0	5.0	5.0	5.0	6.3	12.0	12.0	3.5	8.0-11.5	8-13	4	8.4	
Others															
Solids in immediate containers of a net capacity of 1 kgm or less															
Crude	20	2	9.5	14.0	6.3	20.0	6.3	20.0	20.0	8.7	2.0	2.0	4	16.0	
Refined	20	4	13.0	16.0	6.3	20.0	6.3	20.0	20.0	8.7	2.0	2.0	8	20.0	
Solids, otherwise imported; or fluid															
Crude	10	2	6.5	8.0	6.0	12.0	6.0	12.0	12.0	2.0	6.5	8.0	4	10.0	
Refined	15	4	11.5	13.0	6.3	16.2	6.3	16.2	16.2	3.5	11.5	13.0	4-8 <sup>b</sup>	13-16.6 <sup>b</sup>	

<sup>a</sup>Including the Associated Overseas Territories<sup>b</sup>A lower tariff applies for oils which are unfit for human consumption

Source: Commonwealth Economic Committee (London), Vegetable Oils and Oilseeds, A Review, No. 18 (1968).

Table 3. Major Philippine coconut policies, 1950-69

<u>Legislation Number and Date Enacted</u>	<u>Objectives of the Policy</u>
RA 1145 (June 17, 1954)	<p>Establishment of the Philippine Coconut Administration (PHILCOA), replacing NACOCO, to meet the following:</p> <ul style="list-style-type: none"> <li>(i) To ensure the steady and orderly development of the coconut industry;</li> <li>(ii) To promote the effective merchandising of copra, coconut oil, coconut products and by-products in the domestic and foreign markets;</li> <li>(iii) To improve the living conditions of laborers engaged in the coconut industry and the tenancy relationship between coconut proprietors and tenants; and</li> <li>(iv) To encourage the invention of useful machinery that will hasten the development of the coconut industry.</li> </ul> <p>PHILCOA was to be funded through a levy of P0.10 per 100 kgs of dessicated coconut, coconut oil and copra produced.</p>
RA 1365 (June 18, 1955)	<p>Basic objective is to improve the copra quality through the required use of moisture meters by all copra buyers in their first domestic purchase of copra. A schedule of price premium or deduction was formulated based on the moisture equivalent of the copra products. Also, an additional fee of P0.05 per 100 kgs of copra was levied on the first domestic purchase of copra.</p>
RA 1369 (June 18, 1955)	<p>A target appropriation of P30 million from the sale of government bonds was envisioned to finance the manufacture of coconut products, and tree by-products under the auspices of PHILCOA.</p>
RA 2282 (June 19, 1959)	<p>Establishment of a P30 million fund to provide credit to coconut cooperatives and producers. The fund was to be administered by the Development Bank of the Philippines (DBP).</p>
CB Circular 105 (4-25-60)	<p>Devaluation of peso from P2:\$1 to P2.30:\$1 to effect monetary reforms.</p>
CB Circular 117 (11-28-60)	<p>Devaluation of peso to P2.50:\$1.</p>
Establishment of Seedling Banks (1961)	<p>To provide seedlings to farmers for replanting old and diseased palms.</p>
CB Circular 121 (3-2-61)	<p>Devaluation of peso to P2.75:\$1.</p>
CB Circular 133 (1-21-62)	<p>Devaluation of peso to P3.42:\$1.</p>
RA 4059 (June 18, 1964)	<p>Creation of the Philippine Coconut Research Institute (PHILCORIN) to monitor, evaluate and conduct researches on coconut production.</p>
RA 4403 (June 19, 1965)	<p>Promotion of coconut farmers associations and agro-industrial coconut cooperatives to uplift the income of the farmers.</p>
CB Circular 210 (11-6-65)	<p>Devaluation of peso to P3.87:\$1.</p>

*the productivity of the industry and to maximize export earnings from coconut products. The welfare (e.g., equitable distribution of export earnings) of the coconut farmers who contribute close to 70 percent of the value added of coconut products are really relegated to the background.*

*Under RA 1145 and RA 1365, the cumulative total fees collected amounted to P21.828 million for the period 1954-55 to 1965-66.<sup>7</sup> Despite such funds generated, actual productivity levels have barely changed. Most likely, high-yield potential coconut technologies have not been adequately developed.*

*In 1971, the Coconut Coordinating Council (CCC) was formed to supervise, coordinate and evaluate the implementation of the coconut self-sufficiency program of the government. So three agencies existed simultaneously-- PHILCOA, PHILCORIN and CCC. It was lamentable that such agencies lacked singleness of purpose, and the framework upon which they operated did not revolve around the total development of the industry.*

*Therefore, as we turn the pages of history of the coconut industry prior to 1973, we see a giant industry that was stagnant. Except for Project Cocosund, there was practically no systematic or long-term approach towards the development of the industry. Coconut farmers remained in a sad and sleepy state and coconut production remained low, partly because of obsolete technologies of production and processing. Over the years, the coconut tree remained a lazy man's crop.*

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<sup>7</sup>PHILCOA Annual Reports, 1957-58 to 1965-66.

### *The Cocofund Law (RA 6260)*

*Through the Cocofund Law, the government has provided incentive for the farmers to put up their own investment company. The law has mandated the collection of 55 centavos per 100 kgs (or P5.50 per mt) of copra or its equivalent in order to raise the capital requirement. This began on March 1, 1972 and is supposed to end on March 1, 1981 or a ten-year period.*

*The purpose of the Cocofund levy is to institute a Coconut Investment Fund capitalized and administered by coconut farmers through a Coconut Investment Company (CIC) in order to provide adequate financing for capital investment in the industry. These levy payments are mere forced savings on the part of the farmers to enable them to raise the P100 million capital requirement for the company. Receipts for tax payments, called Cocofund receipts are supposed to be received by farmers when they sell their products. These receipts were convertible to shares of stock of the CIC after March 1, 1981.*

### *Creation of the Philippine Coconut Authority (PCA)*

*On June 30, 1973 Presidential Decree 232 signalled the first step in the integration of the coconut industry and initiated its systematic development. The decree abolished the PHILCOA, PHILCORIN and CCC, and created the PCA-- one single body which will carry out the functions of said agencies.*

*PCA aims to promote the accelerated growth and development of the coconut and other palm oils industry in all its aspects; to provide general directions for the steady and orderly development of the industry; and to achieve vertical integration of the coconut industry so that the*



coconut farmers become participants in, and beneficiaries of, the development and growth of the coconut industry.

The PCA has been constituted as collection agent and trustee of the Cocofund levy and has been charged with the processing of papers on levy payments to determine the equity participation of the farmers in the company.

#### *Establishment of the Coconut Consumers Stabilization Fund (CCSF)*

In mid-1973, coconut prices soared to high levels as the world convulsed in economic chaos spawned by the Arab oil embargo and the spiral of petrol prices. Prices of coconut-based commodities like cooking oil, filled milk and detergents, soared beyond the reach of many Filipinos. To bring prices down within the reach of the consumers, PD 276 was promulgated on August 20, 1973, establishing the Coconut Consumers Stabilization Fund (CCSF) with an initial levy of P15 per 100 kgs of copra or equivalent coconut products sold by farmers. Its aim was to support the sale of coco-based household items at socialized prices.

The amount of subsidy given out is computed :

$$S_t = kQ_t(SP_t - BP_t)$$

where  $S$  = units of the consumer product sold;

$Q$  = constant copra conversion factor;

$SP$  = settlement price (a three-week moving average of actual weekly copra prices in Manila); and

$BP$  = base price of copra (the copra price that would give refiners their normal profit subject to the level of government prices for the consumer products).

The old scheme for this program (August, 1973 to June, 1979) directly subsidized the refiners according to the above formula. The new scheme (June, 1979 to present), however, makes the UCPB coconut mills (to be discussed later) the only direct recipients of the subsidy. Refiners will be subsidized indirectly if they purchase their raw materials (i.e., copra or crude coconut oil) from the UCPB oil mills.

In the course of time, the CCSF levy metamorphosed into defraying the cost of industry developmental programs. As it turned out, the fund which was originally aimed to solve a consumer's problem later brought about economic miracles to the coconut farmers.

Table 4 gives the on-going allocation of the levy as of 1981. Take note that past breakdowns of the levy differed greatly from the given table.

#### *The National Coconut Replanting Program*

The need to increase coconut production has long been recognized by past administrations and industry leaders. Coconut seedling banks were established at strategic points all over the country in 1961 to provide planting materials to the coconut farmers. But these were not properly maintained and supervised that their effect on planting was small.

So the National Coconut Replanting Program or Seedgarden Venture, mandated as PD 582, was launched and implemented by the PCA. Its objective is to increase present production by as much as five times with the use of early bearing, high-yielding hybrid seednuts which will replace the old and unproductive trees that will be cut. This hybrid,

Table 4. The present use of the CCSF levy, 1981

Use	Amount (in pesos per mt)	Percent
1. Coconut Industry Development Fund (CIDF)	200.00	33 1/3
2. Subsidy*	120.00	20
3. Coconut Farmers Refund (CFR)	150.00	25
4. Coconut Industry Investment Fund (CIIF)	80.00	13 1/3
5. PCA Coconut Research	20.00	3 1/3
6. COCOFED (scholarship, operations, projects)	30.00	5
TOTAL (levy rate)	600.00	100

\* If there is a surplus: 40 percent of surplus for CFR; 35 percent for CPSF (Copra Price Stabilization Fund); and 25 percent for CIIF.

which is a cross between the West African tall and the Malaysian dwarf, is alleged to have a higher yield (500 percent or more) and a shorter gestation (three years) than the predominant native variety.

The Coconut Industry Development Fund (CIDF) drawn from the CCSF levy is financing the program. The ultimate objective is the distribution, for free, of hybrid seednuts to the coconut farmers. The contract to supply all the seednuts required in this program was awarded to Agricultural Investment, Inc. (AII). The firm developed 1,500 hectare-farm in Bugsoc Island off Palawan. According to this contract, the government will buy all the seednuts produced by AII at P7.00 per nut and will distribute them free to the farmers.

While increasing farm output and income of the farmers, the program will also enhance the Philippines' competitiveness in the world market through increased capability to provide adequate and steady supply of coconut products at fair and reasonable prices.

#### *Credit Enhancement Policy: Establishment of the UCPB*

For decades, the coconut farmers had been beset by a constant lack of adequate credit facilities. Usually, the farmers mortgaged their future harvest at a much lower price in exchange for much needed loans at higher interest rates. Under this environment, PD 755 was issued, enabling the coconut farmers to establish a commercial bank of their own, from their own money, and for their own benefit.

In 1975, the PCA bought the First United Bank (FUB) in behalf of the coconut farmers with funds representing the unused portion of the CCSF. The FUB later became the United Coconut Planters Bank (UCPB).

One of the roles of the UCPB is to provide credit to the coconut farmers. They can borrow from the bank for production purposes only at the preferential rate of 8 percent per annum. Another role of the UCPB is being the depository of the huge CCSF revenue, about P1.5 billion a year.

But the most important role of the UCPB is its management of the Coconut Industry Investment Fund (CIIF). The CIIF is the funding mechanism established to implement the provisions of PD 1468 (Article III, Sections 9 and 10) requiring investments for the benefit of the coconut farmers in commercial and industrial enterprises relating to the coconut industry. Eight of sixty pesos of the CCSF money are set aside to form the CIIF. This fund is intended for the vertical integration program which aims to integrate the production, trading, processing and financing sectors of the industry allegedly under the control of coconut farmers. In this regard, the UCPB, therefore, is expected to invest the CIIF in the purchase and/or establishment of oil mills, trading corporations and the like.

#### Coconut Marketing Associations (CMA)

To make sure that the farmers receive maximum profits from their produce, the PCA has spearheaded the organization of coconut marketing associations (CMA) in 1976. Their objective is essentially to check the exploitation by the middlemen in the marketing of farmers' products. Through CMA, members get higher returns than other coconut farmers who sell their produce individually to buyers through middlemen.

Pooling of resources is a strategy in the establishment of CMA. . An individual farmer with three sacks of copra will probably not be entertained by a wholesale buyer. However, 100 farmers with 3 sacks each,

*selling their copra as a group, will surely attract the attention of the big buyer.*

*The CMA, in seeking the highest price for the farmers' products, conducts a canvass of prices offered by end-users. Thereafter, sale is made to end-users who give the highest price.*

#### *Allocation of the CCSF Levy Surplus*

*With regards to the problem of allocating the subsidy surplus, a Letter of Instruction (LOI 852) was issued in 1979 to define an allocation rule. The rule is: (i) 40 percent of the surplus goes to the Coconut Farmers Refund (CFR); (ii) 35 percent of it goes to the CPSF<sup>8</sup> while (iii) the remaining 25 percent is set aside for the CIIF.*

*Two of every sixty pesos of the CCSF money goes to the PCA for coconut research purposes. And three of every sixty pesos goes to the Philippine Coconut Producers Federation, popularly known as the COCOFED. Of this, P1.00 is used for the COCOFED collegiate scholarship program. The remaining P2.00 are to be used by the COCOFED for its internal operation and for whatever projects it deems necessary.*

#### *Establishment of the COCOFED Marketing Corporation (COCOMARK)*

*Out of the Copra Price Stabilization Fund (CPSF), the Philippine Coconut Producers Federation (COCOFED) Marketing Corporation, or COCOMARK, was formed by virtue of LOI 857. This replaced the CMA established in 1976.*

*In issuing the Letter of Instruction, the President noted that:*

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<sup>8</sup>*Copra Price Stabilization Fund (CPSF) is a fund earmarked for the setting up of COCOFED copra buying centers.*

*".....one of the reasons for low farm-gate prices is the excessive number of middlemen participating in the multi-staged channel through which the copra produced by the coconut farmers is purchased and ultimately sold to end-users of copra."*

*COCOMARK has established cooperative copra collecting centers engaged in the direct purchase of copra from the coconut farmers and the direct sale of the product to end-users which the coconut farmers themselves own or control through the CIIF. This eliminates the need for multiple copra middlemen, such as the veteran Chinese traders who are alleged to have been exploiting the coconut farmers. The speculative profits that would otherwise be reaped by them are now shared by both the coconut farmers and consumers. Thus, farmers have higher farmgate prices of copra and consumers have reasonable prices of essential coconut-based products.*

#### *Problem of Oil Mill Overcapacity*

*In 1979, another problem arose to threaten the stability of the coconut industry. There was an overcapacity of the existing coconut oil mills.*

*Coconut oil milling is one of the most lucrative ventures in the industry. So profitable that anyone who had the financial resources would want to put up his own oil mill. Thus, the imbalance between the copra supply and the oil mills' capacity surfaced to critical proportions.*

*The indiscriminate putting up of oil mills and the low productivity of coconuts accounted for the discrepancy. As a result, oil mills scrambled for copra. The overcapacity of existing coconut oil mills and the cutthroat competition for copra led to inefficient and uneco-*

onomic flow of copra supply from island to island throughout the nation without regard to the respective locations of mills. Buyers had to settle for inferior quality copra if only to operate at a profitable crushing capacity. Yet, earnings were marginal. Some mills were forced to shut down while others could not meet the amortization of their loans which were mostly guaranteed by government financial institutions.

Resulting from these factors is the poor competitive position of Philippine copra, coconut oil and their by-products in the international market for fats and oils.

#### *Organization of the United Coconut Oil Mills (UNICOM)*

The United Coconut Oil Mills, Inc. (UNICOM) was therefore organized in compliance with LOI 926, authorizing the UCPB to invest the CIIF in a private corporation which serves as the corporate vehicle, pooling and coordinating the resources of the coconut farmers and oil millers in the buying, milling and marketing of copra and its by-products. It is owned 50 percent by the farmers by virtue of their investment through the CIIF; 10 percent by UNICOM-owned mills which retained their corporate identities.

UNICOM is not without precedent. Commonwealth Act No. 518 (1940) prescribed a National Coconut Corporation to establish and operate drying plants on coconut centrals with the view to strengthen the position of the industry in the world market.

When the defunct PHILCOA was formed under RA 1145, one of its major objectives was to help coconut farmers and planters organize themselves into associations or agro-industrial coconut cooperatives to



give them greater control in the marketing of their products.

Even in the United States, which is supposed to be the model for free trade, the US Supreme Court has ruled, as early as 1933, that the members of a distressed industry plagued with problems of overcapacity and cutthroat competition may band together in the form of a corporation for the purpose of obtaining the highest price for their products and attaining economies of scale. By this move, they do not run afoul of the laws prohibiting monopolies and other restraints of trade.<sup>9</sup>

UNICOM controls at least 2/3 of the country's entire milling capacity. Its creation came at a time when crushing capacity of 3.4 mt overtook copra availability of 2.4 mt annually. It was responsible for the continuous buying of copra at P200 per 100 kgs of copra when copra prices slid to P130 per 100 kgs in 1980.

The government pledged full assistance to the UNICOM as evidenced by the provisions of LOI 926 which discriminates the rest of the oil millers. The latter are not allowed to expand nor even do repair of their existing plants. Finally, no new mill is allowed to be established.

Together with the purchase of big oil mills was the acquisition of copra trading corporations that were connected to these mills. However, UCPB also established its own trading corporation, the Philippine Coconut Planters Trading, Inc. (PCPTI) which had branches all over the country. But the PCPTI proved to be too weak to compete with the Chinese traders. Its branches had gone bankrupt.

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<sup>9</sup>Appalachian Coals, Inc., et. al. vs United States of America, (288 US 344).

### *The Rationalization Program*

*The policy on the exportation of coconut products reflects the Rationalization Program of the government. This program, as adopted by the PCA since 1974, discourages the exportation of raw coconut materials and encourages the shift to semi-processed and finished products, like coconut oil. Incentive packages are being offered, such as the Board of Investment (BOI) Incentives and the coconut export tax/tariff structure.*

*Tables 5 to 8 show the export tax and tariff structures for coconut products. Note that as of 1980, copra is charged 7½ percent per mt while coconut oil and other by-products are charged only 4 percent per mt. The advantage enjoyed by the exporters of processed coconut products is meant to encourage the processing of copra in the Philippines.*

### *Recent Policy Issues*

*The major policy issues from 1981 to the present are focused mainly on the copra levy and on the intensification of research for new uses of coconuts to further boost coconut production and exportation.*

*On September 9, 1981 the Cabinet Executive Committee suspended the P76 per 100 kgs of copra levy. According to the Committee, this move was intended to allow free market forces to determine the buying and selling price of copra. Immediately thereafter, the buying price of coconut oil in the world market dipped down and so did the domestic price of copra. Prices plummeted and threatened to continue their downtrend.*

*So on October 2, 1981 the President partially restored the levy at a reduced rate of P50 per 100 kgs of copra by virtue of PD 1841, which established the Coconut Industry Stabilization Fund (CISF), rep-*

Table 5. Copra: statement of collection of export and premium duties, 1973-1980

Year	Rate of Duty (%)		Export Duty (PM)	Premium Duty (PM)	Total Duties (PM)	Stabilization		Export value (FOB US \$1000)
	Export	Premium				Tax (P1000)		
1973 <sup>2</sup>	-	-	31.87	-	31.87	29,770.083		79,041.47
1974	6	30	73.88	42.68	116.56	149.63		371.95
1975	6	30	80.81	40.98	121.79	1.01		-
1976	6	30	80.22	-	80.22	-		-
1977	6	30	82.48	14.14	96.62	193.13		486.84
1978	6	30	62.07	3.44	65.52	241.28		17.69
1979	7½ <sup>4</sup>	30	51.69	32.20	83.89	14.74		-
1980 <sup>5</sup>	7½	30	13.89	0.56	14.45	-		-

<sup>1</sup>Stabilization Tax (RA 6125) was phased-out and replaced by Export and Premium Duties since July 1, 1973 under PD 230 as amended by Executive Order No. 425.

<sup>2</sup>Second Semester only (July 1 to December 31, 1973)

<sup>3</sup>First Semester only (January 1 to June 30, 1973)

<sup>4</sup>Export duty rate increased from 6% to 7½% effective January 1, 1979.

<sup>5</sup>Export/Premium Duties on coconut products lifted effective May 17, 1980.  
Note: Total duties may not tally due to rounding of figures.

Source: Annual Report of Revenue Collections, Central Bank - RCO.

Table 6. Coconut oil: statement of collection of export and premium duties, 1973-1980

Year	Rate of Duty (%) Export Premium	Export Duty (PM)	Premium Duty (PM)	Total Duties (PM)	Stabilization	
					Tax (P1000)	Export value (FOB US \$1000)
1973 <sup>2</sup>	-	-	-	26.28	16,876.05 <sup>3</sup>	96.89
1974	4	106.06	146.33	252.40	71.25	248.57
1975	4	65.76	20.30	86.06	147.23	90.91
1976	4	82.46	-	82.46	139.12	43.80
1977	4	123.02	18.99	142.01	20.06	8.87
1978	4	160.93	9.02	169.94	303.84	-
1979	4	209.70	178.12	387.82	47.74	-
1980 <sup>4</sup>	4	73.46	10.36	83.82	-	-

<sup>1</sup>Stabilization Tax (RA 6125) was phased-out and replaced by Export Premium Duties since July 1, 1973 under PD 230 as amended by Executive Order No. 425.

<sup>2</sup>Second Semester only (July 1 to December 31, 1973)

<sup>3</sup>First Semester only (January 1 to June 30, 1973)

<sup>4</sup>Export/Premium Duties on coconut products lifted effective May 17, 1980 (Executive Order No. 593).

Note: Total duties may not tally due to rounding of figures.

Source: Annual Report of Revenue Collections, Central Bank - RCO.

Table 7. Dessicated coconuts: statement of collection of export and premium duties, 1973-1980

Year	Rate of Duty (%) Export Premium	Export Duty (Pm)	Premium Duty (Pm)	Total Duties (Pm)	Stabilization	
					Tax (P1000)	Export value (FOB US \$1000)
1973 <sup>2</sup>	-	-	-	5.18	3,232.71 <sup>3</sup>	19.16
1974	4	20	10.68	27.17	-	-
1975	4	20	4/	10.61	950.04	2,289.73
1976	4	20	-	10.55	-	-
1977	4	20	2.71	26.20	0.06	0.12
1978	4	20	6.11	30.66	-	-
1979	4	20	35.46	63.61	-	-
1980 <sup>5</sup>	4	20	20.23	35.96	2.86	-

<sup>1</sup>Stabilization Tax (RA 6125) was phased-out and replaced by Export and Premium Duties since July 1, 1973 under PD 230 as amended by Executive Order No. 425.

<sup>2</sup>Second Semester only (July 1 to December 31, 1973)

<sup>3</sup>First Semester only (January 1 to June 30, 1973)

<sup>4</sup>Amounted to P767.54 only because levy of premium duty on dessicated coconut was lifted effective May 23, 1974.

<sup>5</sup>Export/Premium Duties on coconut products lifted effective May 17, 1980 (Executive Order No. 593)

Note: Total duties may not tally due to rounding of figures.

Source: Annual Report of Revenue Collections, Central Bank - RCO.

Table 8. *Cora meal/cake: statement of collection of export and premium duties, 1973-1980*

Year	Rate of Duty (%)		Export Duty (P <sub>M</sub> )	Premium Duty (P <sub>M</sub> )	Total Duties (P <sub>M</sub> )	Stabilization	
	Export	Premium				Tax (P1000)	Export value (FOB US \$1000)
1973 <sup>2</sup>	-	-	3.25	-	3.25	2,664.72 <sup>3</sup>	12.01
1974	4	20	8.11	1.48	9.59	13.34	49.03
1975	4	20	9.85	2.65	12.50	22.92	22.54
1976	4	20	14.33	6.92	21.24	41.84	8.75
1977	4	20	16.54	18.83	35.37	30.05	36.80
1978	4	20	18.70	4.02	22.72	15.13	17.49
1979	4	20	19.77	19.73	39.50	21.77	-
1980 <sup>4</sup>	4	20	8.70	7.22	15.92	-	-

<sup>1</sup>Stabilization Tax (RA 6125) was phased-out and replaced by Export and Premium Duties since July 1, 1973 under PD 230 as amended by Executive Order No. 425.

<sup>2</sup>Second Semester only (July 1 to December 31, 1973)

<sup>3</sup>First Semester only (January 1 to June 30, 1973)

<sup>4</sup>Export/Premium Duties on coconut products lifted effective May 17, 1980 (Executive Order No. 593)

Note: Total duties may not tally due to rounding of figures.

Source: Annual Report of Revenue Collection, Central Bank - RCO.

*lacing the defunct CCSF.*

*On November 13, 1981 an 11-man coconut industry commission was created to formulate short and long-range recommendations on the industry.*

*Then on December 17, 1981 the P100 million collection earmarked for the subscription of the capital stock of the Coconut Investment Company (CIC) was reached instead of the targeted March, 1981 deadline. Management, thru a Memorandum Circular dated December 28, 1981 ordered a discontinuation of the Cocofund levy collection.*

#### *The Sliding Levy*

*On January 16, 1982 PD 1842 was issued which instituted the so-called "Sliding Levy" to ensure the viability and stability of the coconut industry. This concept of flexible assessment is aimed to effect a more realistic system of determining the amount of assessment on coconut and its products in order to provide immediate relief to coconut farmers while at the same time ensuring continued financial support to on-going socio-economic and developmental programs for coconut farmers.*

*The decree provides, among others:*

*".....the copra exporters, oil millers, refiners, dessicators and other end-users of copra or its equivalent in other coconut products are hereby assessed an amount equivalent to a specific percentage of the prevailing copra equivalent of the world market price of coconut oil which shall be imposed on copra rescada or its equivalent in other coconut products delivered to and/or purchased by them. This specific percentage shall be equal to the average percentage assessment derived from the immediately preceding quarter as determined by the PCA.*

*Provided, however, that no assessment shall be imposed and collected if the average world market price of coconut oil for the immediately preceding quarter falls below US 20 cents per pound.*

*The assessment shall be collected by the PCA and shall constitute the CISF."*<sup>10</sup>

The decree, therefore, provides a flexible rate of assessment which adjusts directly with the world market price of coconut oil. If the world market price of coconut oil is low, the assessment rate would be low and when the world market price is high, assessment would be high.

On the basis of the sliding scale formula and the prevailing world market price of coconut oil at US 25 cents per pound, the PCA adjusted the levy rate at P32 per 100 kgs of copra or its equivalent, which took effect on January 25, 1982. Thus, the previous rate of P50 was lowered by P18. The comparative breakdown of the old and new assessments are as follows:

<u>Allotment</u>	<u>Old Levy (CCSF)</u>	<u>New Assessment (CISF)</u>
CIDF	P20.00	P20.00
Insurance	12.50	6.00
Scholarship	4.00	2.00
COCOFED	3.00	2.00
PCA	2.00	2.00
Liquidation of UNICOM obligations	8.50	-
Total	P50.00	P32.00

The retainment of the P20 for replanting program was aimed at maintaining the Philippines' leading position as the world's premiere supplier of coconut products. Likewise, the program will generate ample

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<sup>10</sup>Presidential Decree 1842, Coconut Farmers Bulletin, Volume VI, No. 1, 1982, p.14.



supply of coconut raw materials for the P1-billion coco-chemical complex being set up in Bauan, Batangas.

#### The Coconut Reserve Fund (CRF)

PD 1842 has created a Coconut Reserve Fund (CRF), replacing the Coconut Farmers Refund (CFR), to ensure continued financial support to critical socio-economic and developmental programs in times of depressed world prices for coconuts. It is constituted from assessments in excess of P50 per 100 kgs of copra or its equivalent in other coconut products.

#### The Fuel Mix Program

The Ministry of Energy, in its quest for indigenous sources of energy, has adopted a coconut oil admixture program. The successful pioneering research on alternative and/or additional source of energy saw that coconut oil can be further processed into ester fuels that could fully substitute as fuel for diesel-engine vehicles. This technical breakthrough will hopefully result in foreign exchange savings by reducing the country's reliance on imported oil, saving some \$80 million a year, and in expansion of the international and domestic market of coconut products, thus improving the nation's trade imbalance.

In early 1982, the President ordered the implementation of the government's fuel mix program utilizing excess coconut oil in the market as a blending component. This has been estimated at 2.6 million tons a year or the equivalent of 19 to 20 million barrels of crude oil.

The President's directive involves the purchase and use of surplus coconut oil by the government. The government said that it will not affect

the country's export commitments. To accelerate the program, the President ordered the Philippine National Oil Company (PNOC) to buy coconut oil at a price equivalent to US 21 cents per pound, 4 cents higher than the world market price.

On September 6, 1982 an Executive Order was issued, exempting coconut oils used as engine fuel from payment of taxes, which include the sales tax, special fund impost and specific tax. This move will boost the government's coco-diesel program and expand the local market for surplus coconut oil.

The fuel mix consists of 10 percent coconut oil to be blended with 90 percent bunker or diesel oil. The blending will be done at the Bataan oil refinery under a program found to be technically feasible by engineers and experts.

Immediate users of the fuel mix will be the National Power Corporation (NPC) and the Philippine Navy in their power generation and transport operations. It was estimated that between the NPC and the Philippine Navy, one million tons of coconut oil could be consumed annually for the fuel mix.

This program hopes to ease the oversupply of copra and coconut oil in the market. The oversupply, along with international factors, had brought down the prices of copra and coconut oil. It has adversely affected the livelihood of more than one million Filipino farmers.

#### *Problem of Oversupply*

The coconut industry ran into trouble when the price of coconut oil in the world market dropped from US 42 cents per pound to US 23

cents. This was due to huge stocks in Rotterdam, San Francisco and other international trading centers. The surplus in the Philippines is reckoned at more than 100,000 tons.

The situation is worsened by the high cost of money in the American and European markets and the low cost of vegetable oils, which are also bogged down in huge inventories.

The two biggest buyers of copra (UNICOM and International Copra Corporation) which together account for 95 percent of the domestic copra trade, were ordered to continue buying copra at a subsidized millgate price of P2 per kilo and to pay cash on delivery.

All the coconut mills in the country were also directed to continue operations, even at a loss, to absorb the copra being produced by the farmers.

To help mills earlier closed down because of losses, the Central Bank was instructed to support the liquidity and financial requirements of the commercial banks financing the mills.

Then by mid-1982, the price of coconut oil in the international market plunged to a new low of US 17 cents per pound. As a consequence, the coconut levy was lifted on August 27, 1982.

#### *Intercropping Program*

The PCA launched and implemented a nationwide campaign on intercropping to maximize land use and augment the meager income of the coconut farmers. In the process, they can hedge or recoup their losses brought about by the low price of copra.

Suitable crops such as mongo, cacao, gabi, potato, pineapple, cassava, sweet potato, peanut, black pepper, coffee, corn and many

others have been planted already in different coconut regions of the country.

#### *Temporary Suspension of Copra Exportation*

Copra exportation by any person, firm or entity was temporarily suspended as an emergency measure to insure sufficient supply of copra for the requirements of the local coconut oil mills.

There was an urgent need to suspend copra exportation in view of the following:

- (i) by reason of the typhoons that hit the country's coconut-producing areas, copra production for 1982 is estimated to considerably drop by 20 percent compared to 1981; and
- (ii) as early as August, 1982 the volume of copra export has already surpassed the traditional yearly volumes of copra exports in previous years.

As of August 30, 1982 the total volume exported has already reached 147,138 mt compared to the yearly volumes for exports in previous years, namely:

1979 = 144,850 mt

1980 = 123,258 mt

1981 = 106,547 mt

The unrestricted exportation of copra has resulted in the inadequacy of raw materials to feed the country's coconut oil mills, and as a consequence, several oil mills are operating below efficient capacities and in certain instances, some have totally shut down to the prejudice of the workers.

What makes it worse is that 84.1 percent of copra exports is channeled to Western European countries where a tax differential exists with respect to copra and coconut oil (copra is duty-free; coconut oil is taxed at 7 percent for edible use and 2½ percent for industrial use). Because of this tax differential, and in spite of the 7 percent Philippine export tax on copra, oil produced from exported copra has been unfairly competing with, and being sold at prices lower than that of oil produced in the Philippines, thereby further depressing the world market prices and adversely affecting the domestic prices for coconut farmers.

Independent oil millers have indicated to the PCA that, if the government will continue to allow the unrestricted export of copra, they will cease milling operations as a means to avoid further losses and instead engage in the exportation of copra. It is in view of all these factors that copra exportation was temporarily suspended on September, 1982.

## CHAPTER IV

### A THEORETICAL FRAMEWORK FOR ANALYSIS OF FACTORS AFFECTING PHILIPPINE COPRA AND COCONUT OIL EXPORTS

*The objective of this study is to determine and analyze the major forces influencing the Philippine copra and coconut oil exports. This will serve as a basis for making specific recommendations on market structure, trade policies and industry-wide technological improvements, for the purpose of improving the competitive position of the Philippines in the export market for coconut oil, copra and other export commodities. The objective is accomplished by performing an econometric analysis using multiple regression on various variables that may affect exports of Philippine copra and coconut oil.*

#### *Importance of Econometric Analysis in the Study*

*Timely reliable data on the coconut industry must be available to enable the government planners and policy-makers to monitor its developments and provide the basis for building analytical tools. But just data by itself is not enough, although inadequate data limits analyses of the industry. Even if data is available, it has little meaning unless put into related and meaningful formats and subjected to tests of economic sense.*

*Planning must consider more than just output and the domestic market for coconut products. The planning framework must consider total supplies as well as domestic use and exports. An adequate framework*

must also include relevant prices, forces shifting domestic and foreign demand and the forces determining the producers' response to incentives as well as the farm production that ensues.

In agriculture, much can be done to understand economic and technical forces by using the simplest kind of analysis and statistical manipulation. But much more can be learned from commodity analyses that identify and approximate the measurement of:

- (i) important demand forces; and
- (ii) forces that shape the way producers respond to economic incentives and new technology in determining output.

Such analytical tools involve mostly econometric analyses-- economic theory and statistical measurement. The objective of econometrics is to give empirical content to economic theory. This is done by fitting various functional forms and then choosing the best one with theoretical justification.

### *Methodology*

Annual time-series data on Philippine copra and coconut oil are obtained from 1960 to 1981. The data base which includes production, domestic use, exports and prices are aggregate in nature i.e., they are based on national totals. Volumes are measured in thousand mt; prices are consistently expressed in US dollars per mt and are deflated using the international price index so as to convert them to real terms or to allow for inflation; price ratios (world export price ratio of copra and competing oilseeds and world export price ratio of coconut oil and competing oils) are used as indices; and export tax is expressed in percent. Tabular, graphical and descriptive analyses of the data are used.

Other relevant information necessary for modelling is utilized to significantly relate them to copra and coconut oil exports model. World production and prices of competing oils are based on world averages.

Computer runs using multiple regression via SAS (Statistical Analysis System) are employed in order to estimate the regression coefficients for copra and coconut oil export models. The ordinary least-squares (OLS) method is used.

#### *Limitations of the Study*

The sample size of time-series data is rather limited. Variables with incomplete observations are deleted because they will lead to an inadequate sample size and lesser degrees of freedom for the model. Also, the problems of identification, multicollinearity and autocorrelation are not fully explored in this study.

#### *The Regression Models Used*

Basically, the export market supply function is stated:

$$Q_c = f(P_c, P_s)$$

where  $Q_c$  = quantity of coconuts exported which is measured in thousand mt;

$P_c$  = world export price of coconuts; and

$P_s$  = world export price of substitutes.

Given that functional form, the following implied assumptions are included:

(i) The actual export market supply of coconuts is represented by that for copra and coconut oil.

(ii) The changes in the world export price of copra, coconut oil



and their substitutes are expressed in real terms, assuming that all other prices are held constant.

(iii) The supply functions are for the world export market of copra and coconut oil, therefore, the models are aggregative. If the function is to be continuous and smooth over the relevant range, additional implied assumptions include:

- (a) The export market supply of copra and coconut oil is in the form of pure competition as there are many exporters and they have perfect knowledge of the prevailing product and factor prices.
- (b) There are constant returns to scale or at least uniform returns to scale over the whole range.
- (c) All exporters face similar supply functions and transformation functions because technology is assumed to be given and constant.

Each of the implied assumptions has its own implications for the copra and coconut oil export market supply functions.

- (i) Copra is produced when fresh coconut meats are dried. It yields approximately 65 percent coconut oil.
- (ii) World prices of copra and coconut oil are reported in US dollars per mt converted to real terms by using the international wholesale price index as deflator.
- (iii) The time trend is used to measure the effect of technological changes which have taken place through time.
- (iv) The ceteris paribus condition in the real world is absent so we have to look possibly at some other forces shifting Philip-

pine copra and coconut oil exports. In other words, export market supply reflects a complex of forces in the world markets. These include competing world supplies, world prices and comparative costs as well as the ability of the Philippines to produce a surplus above domestic use. Export supply depends heavily also on trade policy, which depends on government policy and administration.

However, it is impossible to include in the model all factors that may have causal influence on copra and coconut oil exports because:

- (i) Statistical data are lacking for some variables.
- (ii) The causal factors may be highly intercorrelated. Inclusion of a large number of variables in the model may increase the standard errors of the regression coefficients and tend to obscure the importance of explanatory variables in the equation.

#### Copra Exports Model

The volume of Philippine copra exports is postulated to be a function of (1) Philippine copra production; (2) domestic crush; (3) world export price of copra; (4) world export price of competing oilseeds; (5) world production of competing oilseeds; (6) peso devaluation; (7) copra export tax; and (8) time.

The fundamental equation for copra exports takes the form:

$$Q_c = a_0 + a_1CPRDN + a_2DMCRUSH + a_3EXPCOP + a_4EXPCOIL + a_5COPRODN + a_6PESODEV + a_7CEXPTAX + a_8TIME + E \quad (IV-1)$$

where  $Q_c$  = volume of Philippine copra exported in thousand mt;

$CPRDN$  = Philippine copra production in thousand mt;

$DMCRUSH$  = Philippine copra used for oil milling in thousand mt;

EXPCOP = world export price of copra in US dollars per mt;  
 EXPCOIL = world export price of competing oilseeds in US dollars per mt;  
 COPRODN = world production of competing oilseeds in thousand mt;  
 PESODEV = peso equivalent of one US dollar;  
 CEXPTAX = Philippine export tax for copra in percent;  
 TIME = a trend variable used to measure the effect of technological changes; and

E = error term.

The alternative equation for copra exports can be written as:

$$Q_c = b_0 + b_1 \text{CPRDN} + b_2 \text{DMCRUSH} + b_3 \text{CPRATIO} + b_4 \text{COPRODN} + b_5 \text{PESODEV} + b_6 \text{CEXPTAX} + b_7 \text{TIME} + E \quad (\text{IV-2})$$

where the variable definitions are the same as in Equation IV-1 except for CPRATIO, which is the world export price ratio of copra and competing oilseeds. The price ratio is used to provide an alternative for specifying commodity interdependence.

#### Coconut Oil Exports Model

The volume of Philippine coconut oil exports is hypothesized to be a function of (1) total Philippine coconut oil supply; (2) domestic crush; (3) world production of competing oils; (6) peso devaluation; (7) coconut oil export tax; and (8) time.

The fundamental equation for coconut oil exports can be written as:

$$Q_o = a_0 + a_1 \text{CNOSUP} + a_2 \text{DMCRUSH} + a_3 \text{WPCOILS} + a_4 \text{EXPCNO} + a_5 \text{EXPCOILS} + a_6 \text{PESODEV} + a_7 \text{OEXPTAX} + a_8 \text{TIME} + E \quad (\text{IV-3})$$

where  $Q_o$  = volume of Philippine coconut oil exported in thousand mt;

CNOSUP = total Philippine coconut oil supply in thousand mt;

DMCRUSH = Philippine copra used for oil milling in thousand mt;

WPCOILS = world production of competing oils in thousand mt;

EXPCNO = world export price of coconut oil in US dollars per mt;

EXPCOILS = world export price of competing oils in US dollars per mt;

PESODEV = peso equivalent of one US dollar;

OEXPTAX = Philippine export tax for coconut oil in percent;

TIME = a trend variable used to measure the effect of technological changes; and

E = error term.

The alternative equation for coconut oil exports can likewise be written as:

$$Q_o = b_0 + b_1 \text{CNOSUP} + b_2 \text{DMCRUSH} + b_3 \text{WPCOILS} + b_4 \text{OPRATIO} + b_5 \text{PESODEV} + b_6 \text{OEXPTAX} + b_7 \text{TIME} + E \quad (\text{IV-4})$$

Again, the variable definitions are the same as in Equation IV-3 except for OPRATIO, which is the world export price ratio of coconut oil and competing oils, and is used to provide an alternative for specifying commodity interdependence. The time subscripts for both copra and coconut oil exports models are omitted for convenience.

## CHAPTER V

### EMPIRICAL ANALYSIS OF FACTORS AFFECTING PHILIPPINE COPRA AND COCONUT OIL EXPORTS

*Single-equation regression models are used in this study. Semi-logarithmic function is employed for copra model while the coconut oil model utilizes the double-logarithmic function.*

*Several alternative specifications of the export supply functions are formulated and tried, then a number of criteria for selecting the most preferable equation are set up. The criteria include: (i) the expected signs; (ii) the test of significance (t-values); (iii) the standard error of the coefficients; (iv) the Durbin-Watson statistic (test for autocorrelation); and (v) the coefficient of determination ( $R^2$ ).*

#### *Copra Exports Model*

*All variables are transformed into logarithmic form except the dependent variable. Since the model is in semi-logarithmic form, the copra exports supply elasticities are calculated based on the mean of the dependent variable. The method of estimating the elasticity from a semi-logarithmic model can be written as:*

$$e = b / \bar{Q_c}$$

*where  $e$  is the elasticity;*

*$b$  is the regression coefficient; and*

*$\bar{Q_c}$  is the estimated mean of the dependent variable (Philippine copra exports).*

Among the number of copra equations estimated, Equations 1 and 3 are the most preferred (table 9) because they conform with the criteria being set up earlier. In equation 3, the variables are all significant at 1 percent probability level but the mean square error (MSE) becomes larger because the time variable is dropped, which is highly correlated with the other variables. In both equations, the estimated regression coefficients are large relative to their corresponding standard errors and the resulting signs are consistent with the expectations. The Durbin Watson statistics (2.125 and 1.803) indicate that the autocorrelation coefficients of -0.158 and 0.020 in the first order conditions are not significantly different from zero at the 5 percent level, and hence little or no autocorrelation appears to exist among the error terms. The coefficients of determination or  $R^2$  (0.9894 and 0.9738) suggest that about 97 to 99 percent of the variability in Philippine copra exports is explained by the variations in the explanatory variables such as Philippine copra production, domestic crush, world export price of competing oilseeds, world production of competing oilseeds and time.

#### Coconut Oil Exports Model

The coconut oil exports model employs the double-logarithmic function. Thus, each of the resulting regression coefficients is the elasticity of supply of coconut oil exports with respect to each of the explanatory variables. These elasticities are constant elasticities.

The most preferred equations for coconut oil exports are equations 2 and 3 (table 10). The variables are significant up to 15 percent probability level. The estimated regression coefficients of the significant

Table 9. Copra exports model, Philippines, 1960-1981

Explanatory Variables	1	Equations 2	3
Constant	-4323.341 (1072.919)	-3664.602 (1363.222)	-4607.842 (1193.686)
CPROD <sub>N</sub>	1885.449* (171.252)	1445.823* (134.878)	1579.583* (94.763)
DMCRUSH	-1198.995* (150.016)	-670.791* (69.664)	-713.307* (52.464)
EXPCOP	6.688 <sup>ns</sup> (62.653)	-105.512 <sup>++</sup> (68.651)	
EXPCOIL	231.281** (97.211)	445.376* (105.565)	384.319* (80.537)
COPROD <sub>N</sub>	-275.505* (81.009)	-388.369* (94.959)	-387.186* (84.946)
PESODEV	-10.014 <sup>ns</sup> (133.958)		
CEXPTAX	6.073 <sup>ns</sup> (8.106)	-1.796 <sup>ns</sup> (6.664)	
TIME	212.851* (65.776)		
Summary Statistics			
R <sup>2</sup>	0.9894	0.9779	0.9738
MSE	1299.709	2347.562	2456.144
F-value	151.755	110.724	158.080
DF	21	21	21
Durbin-Watson	2.125	1.894	1.803
1st order autocorrelation	-0.158	-0.084	0.020

Note: Standard errors are in parentheses.

\* Significant at 1 percent level

\*\* Significant at 5 percent level

<sup>++</sup> Significant at 15 percent level

<sup>ns</sup> Not significant

Table 10. Coconut oil exports model, Philippines, 1960-1981

Explanatory Variables	1	Equations 2	3
Constant	-0.1186 (1.1764)	-0.8103 (0.7676)	1.8043 (0.8194)
CNOSUP	0.3052 <sup>ns</sup> (0.4098)		1.3478 <sup>*</sup> (0.0871)
DMCRUSH	1.0538 <sup>**</sup> (0.4632)	1.4138 <sup>*</sup> (0.1040)	
WPCOILS	-0.3802 <sup>*</sup> (0.0838)	-0.3647 <sup>*</sup> (0.0703)	-0.5377 <sup>*</sup> (0.0840)
EXPCNO	0.0726 <sup>ns</sup> (0.0630)	0.0671 <sup>ns</sup> (0.0604)	0.1119 <sup>++</sup> (0.0740)
EXPCOILS	-0.1978 <sup>+</sup> (0.1107)	-0.1694 <sup>++</sup> (0.0983)	-0.2504 <sup>**</sup> (0.1123)
PESODEV	0.2458 <sup>++</sup> (0.1492)	0.2212 <sup>++</sup> (0.1437)	
OEXPTAX	0.0028 <sup>ns</sup> (0.0117)	0.0009 <sup>ns</sup> (0.0109)	0.0224 <sup>+</sup> (0.0113)
TIME	-0.0142 <sup>ns</sup> (0.0540)	-0.0184 <sup>ns</sup> (0.0526)	0.0624 <sup>ns</sup> (0.0534)
Summary Statistics			
R <sup>2</sup>	0.9978	0.9977	0.9964
MSE	0.0023	0.0022	0.0033
F-value	733.618	869.278	682.517
DF	21	21	21
Durbin-Watson	3.053	3.126	2.421
1st order autocorrelation	-0.549	-0.585	-0.233

Note: Standard errors are in parentheses.

\* Significant at 1 percent level

\*\* Significant at 5 percent level

+ Significant at 10 percent level

++ Significant at 15 percent level

<sup>ns</sup> Not significant



variables are large relative to their corresponding standard errors and the resulting signs are consistent with the expectations. The Durbin-Watson statistics (3.126 and 2.421) are inconclusive at the 5 percent level. The coefficients of determination or  $R^2$  values (0.9977 and 0.9964) indicate that 99 percent of the variability in Philippine coconut oil exports is accounted for by the variations in the following variables: Philippine coconut oil supply, domestic crush, world production and world export price of competing oils, world export price of coconut oil, peso devaluation and coconut oil export tax. The time variable, although non-significant, is retained in the model since dropping it would result to higher mean square errors (MSE).

This analysis suggests several economic conclusions based on copra and coconut oil exports supply elasticities with respect to their explanatory variables (table 11).

#### Philippine Copra Production and Coconut Oil Supply (CPRDN and CNOSUP)

Both copra and coconut oil exports increase with production and total supply. A 1 percent increase in copra production results in a corresponding 2.47 percent rise in copra exports; while a 1 percent increase in coconut oil supply leads to a 1.35 percent increase in coconut oil exports. This supports the National Replanting Program of the government which aims to accelerate coconut production and thus increase exports.

#### Domestic Crush (DMCRUSH)

A 1 percent increase in domestic crush will significantly restrict copra exports by 1.11 percent but will increase coconut oil exports by

Table 11. Elasticity coefficients for Philippine copra and coconut oil exports models, 1960-1981

Copra Exports Model <sup>1</sup>		Coconut Oil Exports Model	
Variables	Elasticities	Variables	Elasticities
CPRDN	2.4673	CNOSUP	1.3478
DMCRUSH	-1.1142	DMCRUSH	1.4138
EXPCOIL	0.6003	EXPCNO	0.1119
COPRODN	-0.6048	WPCOILS	-0.5377
PESODEV <sup>2</sup>	-0.0576	PESODEV	0.2212
PRATIO <sup>2</sup>	-0.9802	OEXPTAX	0.0224
TIME	0.3325		

<sup>1</sup>The elasticities are computed at the sample means.

<sup>2</sup>Significant at 1 percent level when the alternative equation for copra exports is used.

1.41 percent. This is expected since the Rationalization Program of the government discourages copra exportation in favor of coconut oil production.

#### World Production of Competing Oilseeds and Oils (COPRODN and WPCOILS)

Prices of copra and coconut oil are both determined or affected significantly not only by the supply of copra but also by the quantity of coconut oil substitutes in the market. The increasing supply of competing oilseeds and competing fats and oils and synthetics generates increased market pressure on both copra and coconut oil, thus producing the declining world market prices of copra and coconut oil as noted in figure 15 (page 27). This is demonstrated by the negative signs in the exports supply elasticity with respect to world production of substitutes. A 1 percent increase in world production of competing oilseeds, fats and oils will result in a decline in copra and coconut oil exports by 0.60 of one percent and 0.54 of one percent, respectively.

#### World Export Price of Competing Oilseeds and Coconut Oil (EXPCOIL and EXPCNO)

Prices of copra and coconut oil behave with world export price of competing oilseeds, fats and oils. As the world market prices of substitutes go up, domestic and international prices of copra and coconut oil likewise will rise, prompting exporters to offer larger quantities. Results of the chosen regression models show that a 1 percent increase in the world export price of substitutes will increase copra exports by 0.60 of one percent, while a 1 percent increase in the world export price of coconut oil will boost coconut oil exports by 0.11 of one percent.

### Price Ratio (PRATIO)

This variable significantly affects copra exports. A 1 percent increase in the world export price of copra relative to world export price of competing oilseeds will reduce copra exports by 0.98 of one percent, as the traditional buyers will turn to cheaper substitutes.

### Peso Devaluation (PESODEV)

Bautista (1978)<sup>11</sup> has shown that the overvaluation of the peso will tend to discriminate against the growth of the exports of processed coconut products, e.g., coconut oil, as long as the following condition is met:

$$v_2/v_1 \geq o_1/c_1$$

where  $v_1$  is the export supply elasticity of the unprocessed coconut product;

$v_2$  is the export supply elasticity of the processed coconut product;

$o_1$  is the total production of the unprocessed coconut product; and

$c_1$  is the domestic consumption of the unprocessed coconut product.

Using an empirical data base from 1952 to 1973, he noted that a 10 percent devaluation of the domestic currency would result in a reduction of copra exports by 0.53 percent and an increase in coconut oil exports by 5.46 percent.<sup>12</sup>

Bautista's findings are supported by the analysis in this study.

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<sup>11</sup>R. M. Bautista, "Interrelated Products and the Elasticity of Export Supply in Developing Countries," *International Economic Review*, Volume 19, No. 1, February 1978.

<sup>12</sup>The correlation between the copra and coconut oil export changes will be negative given an exchange rate in Bautista's framework provided that:

where  $x_1$  is the export of the unprocessed commodity.

The regression results show that a 10 percent devaluation of the peso will result in a reduction of copra exports by 0.58 percent and an increase in coconut oil exports by 2.21 percent.

#### Export Tax (CEXPTAX and OEXPTAX)

The export tax is expected to have a negative effect on copra exports and positive effect on coconut oil exports since copra is taxed higher than coconut oil. However, the analysis of this study showed the export tax to have an insignificant effect for the copra exports model.

The coconut oil exports model shows that a coconut oil export tax which is 1 percent lower relative to that of copra export tax will enhance coconut oil exports by 0.02 of one percent.

The government imposes a higher tax on copra exports than on coconut oil exports to counteract the tax and trade policies of copra importing countries.

The United States imposes a duty on coconut oil, Japan has a differential duty between copra and coconut oil, and the European countries impose a duty on coconut oil while admitting copra duty-free. These foreign trade policies are aimed at maintaining the Philippines as a copra exporter but also to prevent her from becoming a coconut oil processor which would eventually compete with them.

#### Time Trend (TIME)

The time trend is highly significant in the copra exports model but proved to be insignificant for all the coconut oil exports models that were tested. A 1 percent increase in technology will result to a .33 of one percent increase in copra exports.

*The fluctuating trend in copra and coconut oil exports over time has been brought about by the adverse economic situations around the world. The prevailing world economic problems such as inflation and high interest rates have reduced Philippine copra and coconut oil exports.*

## CHAPTER VI

### SUMMARY, POLICY IMPLICATIONS AND RECOMMENDATIONS

The Philippine agricultural setting suggests that to meet the objective of increasing coconut production for export earnings, policies and programs must be designed to provide output targets, including growing domestic and export markets. Special commodity programs to expand production of coconut and its by-products and reduce costs to farmers and consumers must be initiated. Longer-run policy strategy for coconuts and oils include the following: (i) facilitate replanting; (ii) increase grower incentives; (iii) reduce excessive government controls (e.g., coconut levies), heavy export taxes; and (iv) reexamine trade policy.

#### Low Copra and Coconut Oil Price Situation

The prevailing low price of copra locally can be traced to the corresponding low price of coconut oil in the world market as a substitute for vegetable oil. The depressed price of coconut oil is largely the result of stiffening competition from the growing larger world supplies of substitutes like palm oil, rapeseed oil, cottonseed oil, sunflower oil and soybean oil. However, the rising value of the dollar relative to many other world currencies, is making US oils more expensive in the world market when compared to coconut oil.

Prices of coconut products are dependent on one major phenomenon, i.e., the "impermanence of world prices." Any price improvement on copra

and coconut oil will depend principally on the demand for such products by the United States, Europe and other industrialized nations which need coconut oil for industrial usage.

The decline of copra prices experienced the past three years brought to the fore certain deficiencies in the industry. Among these are product dependence and market dependence.

Our major export commodity items have always been coconut oil and copra. But these products suffer from their limited substitutability in the volatile market for other fats and oils. Also, we have become so attached to our traditional trading partners like the United States and Western Europe and have failed to seriously explore alternative markets. As a consequence, there will likely continue to have an oversupply of Philippine coconut products, especially coconut oil.

In response to the bearish market situation and in order to cushion its adverse effects, particularly on the coconut farmers, the author suggests that the following recommendations be vigorously pursued by the Philippine government in its future policies with respect to agriculture and particularly the coconut industry.

Product diversification. De la Cuesta (1980) stressed the need to explore other and improved uses of coconuts-- such as the coconut timber, coco-chemicals, coco-diesel and food; and push the frontiers of research and development to evolve higher technology and productivity.<sup>13</sup>

Product diversification policy is part of the general plan to integrate an industrialized coconut industry and to diversify the uses

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<sup>13</sup>R. de la Cuesta, "Progress and Prospects of the Coconut Industry," *Fookien Times Yearbook*, 1980.



of coconut oil to ensure a more stable price for coconut products.

The move to encourage exportation of semi-processed coconut products like crude coconut oil rather than copra has been initiated. Export figures reveal that the ratio of volume of coconut oil exports have consistently increased relative to copra. But coconut oil can be further processed into chemicals. This is an important consideration in the face of the ever-increasing price of petroleum-based chemicals. The world market behavior shows that 60 percent of coconut oil is bought for industrial use and only 40 percent for edible use. It is necessary therefore, to stress further processing of coconut oil into chemicals. Since they are processed products, it is hoped that they will command higher prices in the world market, thereby pulling up the domestic price of copra to the benefit of the farmers. Additional processing will also generate employment and accompanying personal incomes, which the Philippine economy presently suffers severely.

With the setting up of the United Coconut Chemicals, Inc. (UNICHEM) plant in Bauan, Batangas, the Philippines will become an exporter of processed and semi-processed coconut products while at the same time shift from the traditional food or vegetable oil usage of coconut oil to industrial usage.

Market diversification. The aim is to open and expand new markets in the world to take up the increase in local coconut production.

Palm oil, palm kernel oil and soybean oil are more competitive in the world market than coconut oil because they have greater market channels which include India, Pakistan, Iraq, Saudi Arabia, Egypt, Iran and Nigeria. Coconut oil on the other hand, depends only on the United

States and Western Europe. The United States is the biggest buyer of coconut oil while Western Europe is the biggest buyer of copra.

Penetration of non-traditional markets will increase demand for coconut products, hence increase the domestic price of copra and the income of the coconut farmers.

Farm diversification. This includes intercropping, which is designed specifically to augment the real income of the coconut farmers.

#### Copra Export Ban

The suspension of copra exports was brought up by the private sector as a possible move to solve the imminent closure of some coconut oil mills due to lack or inadequacy of copra to crush.

Because of the copra shortage, on an industry-wide basis, the country's mills have been operating at 57 percent of their rated capacity. This is far below the 90 percent level for a mill to be viable.

PCA is cognizant of the general policy to encourage domestic processing of copra but we have to take into consideration the long-term program, the elements of substitutability, tariff protectionism and the welfare of the other sectors of the industry, especially the coconut farmers.

Phasing out copra exports by the Philippines will result in reduced copra to crush for European millers, thus forcing them to shift to soybeans and palm oils which are cheaper than copra and imported coconut oil.

Moreover, a suspension of copra exportation might result in European retaliation by denying future copra sales and by imposing higher

duties on coconut oil exports. There is also no assurance that Europe will continue to buy coconut oil once exportation of copra has been stopped.

It is not enough that the Philippines has a ready market for coconut oil, thereby shifting wholly into oil exportation. An integrated approach to the problem should consider primarily the effects upon farmers. Between the oil millers and the farmers, the former are in a better position to absorb any possible retaliatory trade policies by importers.

The policy is to allow a manageable mix between copra and coconut oil exports. This would be in keeping with the rationalization program of encouraging processed products exportation.

Copra exportation must be continued to assure high prices of copra locally. The competition between copra exporters and oil millers in the purchase of copra should benefit the coconut farmers because they should expect higher prices for their produce as a result of the increased competition for copra.

#### Maintenance of the European Market

It is very important that the Philippines maintains the European market for the following reasons:

- (i) The loss of the European market will adversely affect the coconut farmers because the local price structures of copra are based on its international demand.
- (ii) With the loss of the European market, the viability of the replanting program will be placed in jeopardy. It is projected that by 1990, the country will double its copra production.

Assuming that all the oil mills, both existing and proposed will be operating at 80 percent of capacity, there should be surplus production which, through more cost-efficient production and marketing policies, should make it possible to compete more effectively in the world market, thus potentially increasing the income of coconut farmers and will earn more foreign exchange.

By the time increased production is attained, the Philippines would have an excess supply of copra over and above the so-called "inelastic domestic demand." Thus, the move to maintain the European market for copra exports assures the absorption of this excess in international trade.

#### Maintenance of the Tariff Difference

The tariff difference<sup>14</sup> in the computation of the premium duty of copra vis-a-vis coconut oil and other coconut products should be maintained because of the following reasons:

- (i) Government sharing in windfall gains of the exporter during a bullish market.
- (ii) The across-the-board computation was done to provide reasonable relief to all exporters of coconut products and not only to oil millers.

#### Suspension in the Collection of Coconut Levies

The coconut industry is faced with the problem of high processing

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<sup>14</sup>For copra: 30 percent of the difference between the base price and the customs monthly valuation price;

For coconut oil: 20 percent of the difference between the base price and the customs monthly valuation price. This is the same for dessicated coconuts and copra meal.

*costs and limited and uncertain supply of copra.*

*Suspension in levy collection is directed toward:*

- (i) bailing out the ailing coconut industry; and*
- (ii) discouraging smuggling of copra abroad, which fetches good prices. Copra smuggling contributes to an inadequate supply of copra available to the domestic coconut oil processors.*

#### *Increase the Milling Capacities and Storage Facilities*

*An increase in coconut production does not necessarily mean a proportionate increase in coconut oil and other products such as dessicated coconuts unless the factories themselves either increase milling capacities together with an increase in storage facilities. In order to maintain a steady supply in the world market, the coconut industry should have the capability to equalize seasonal production by having buffer stocking facilities to accommodate seasonal surplus production patterns, and to deliver more coconut oil to the world market during slack periods of production.*

Appendix 1. Philippine coconuts: area planted, number of trees, production and yield, 1958-1981

Year	Area Planted ( <sup>1</sup> 000 hectares)	Number of Trees (million trees)	Production (million nuts)	Yield (nuts/hectare)
1958	995.6	165.0	5,973.6	6,000
1959	1,006.1	166.6	6,041.4	6,005
1960	1,059.4	167.1	6,015.9	5,679
1961	1,199.9	185.1	6,194.7	5,163
1962	1,283.7	197.6	7,395.6	5,761
1963	1,392.3	211.7	7,704.4	5,534
1964	1,482.9	232.1	7,222.2	4,870
1965	1,604.7	240.9	7,051.8	4,394
1966	1,610.9	244.8	7,089.8	4,401
1967	1,820.1	243.7	7,925.2	4,354
1968	1,800.4	252.4	7,412.5	4,117
1969	1,484.5	264.5	7,244.0	3,925
1970	1,883.9	272.4	7,745.2	4,111
1971	2,048.5	297.0	7,813.9	3,814
1972	2,125.5	325.5	8,424.4	3,963
1973	2,133.3	315.2	8,310.9	3,896
1974	2,206.0	334.5	8,376.3	3,797
1975	2,283.1	346.6	8,421.3	3,689
1976	2,521.2	353.5	11,301.5	4,483
1977	2,728.2	376.9	11,985.9	4,393
1978	2,889.8	387.0	14,880.3	5,149
1979	2,994.6	396.4	14,906.2	4,978
1980	3,125.9	417.4	9,774.0	3,127
1981	3,162.2	411.2	10,412.0	3,293

Source: Bureau of Agricultural Economics (BAECON), Quezon City, Philippines.

# **PHILIPPINE COCONUT OIL EXISTING CRUSHING CAPACITY OF OIL MILLS**

<u>OILMILL</u>	<u>PLANT SITE</u>	<u>Daily Rated Capacity Copra Tonne (MT)</u>	<u>Annual Rated Capacity Copra Tonne (MT)</u>
<b>MANILA/RIZAL</b>			
1. Procter & Gamble, PMC	Tondo, Manila	250	82,500
2. Philippine Refining Company	Paco, Manila	275	80,300
3. Imperial Vegetable Oil	Pandacan, Manila	310	90,750
4. Liberty Oil Factory	Quezon City	100	30,000
5. International Oil Factory	San Juan, Rizal	175	57,750
6. Royal Industrial Dev. Corp.	Makati, Rizal	130	49,500
7. Central Vegetable Oil Company	Paco, Manila	150	79,200
8. Tantuco Industrial & Dev. Corp.	Makati, Manila	240	79,200
9. Tayabas Oil Company	Taguig, Rizal	55	18,150
10. Po Man Hing	Parañaque, Rizal	60	19,800
11. Domestic Weaving	Quezon City	75	24,750
12. Metroplex Commodities, Inc.	Muntinlupa, Rizal	100	33,000
	Sub-total	1,920	608,600
<b>LAGUNA/QUEZON AREA</b>			
1. Coco-Chemical Phil., Inc.	Atimonan, Quezon	250	82,500
2. San Pablo Manufacturing Corp.	San Pablo City	450	148,500
3. Red V Coconut Products	Lucena City	50	16,500
4. Royal Manufacturing Company	Lucena City	115	37,950
5. Lucena Oil Factory	Lucena City	150	49,500
6. Tantuco Enterprises	Lucena City	195	64,350
7. Peter Paul Philippines, Corp.	Candelaria, Quezon	40	13,140
8. Sun Ripe Coconut Products	Magdalena, Laguna	55	17,520
9. Blue Bar Coconut Products	Tiaong, Quezon	27	8,760
10. Franklin Baker Co.	San Pablo City	27	8,780
11. Coconut Oil Manufacturing of the Philippines	Sta. Cruz, Laguna	75	24,750
12. Southern Luzon Oil Mill	Mulanay, Quezon	110	36,300
13. PCY Oil Mill	Sta. Cruz, Laguna	100	33,000
14. Atson Oil Mill	San Pablo, Laguna	50	16,500
15. Quezon Champion Oil Mill	Candelaria, Quezon	25	8,250
16. Licup Oil Mill	Candelaria, Quezon	25	8,250
17. APO Oil Mill	Candelaria, Quezon	25	8,250
18. Mina Oil Mill	Cabuyao, Laguna	25	8,250
19. Mindeco Consolidated Manufacturing Corp.	Lucena City	50	16,500
20. Laguna Insular Commercial	Cabuyao, Laguna	50	15,000
	Sub-total	1,894	122,530
<b>BICOL</b>			
1. Pitra Export Corporation	Jose Panganiban, Camarines Norte	250	82,500
2. Legaspi Oil Company	Legaspi City	300	99,000
3. Bicol Oil Mill & Refining	Pasacao, Cam. Sur	100	30,000
	Sub-total	650	211,500
<b>VISAYAS AREA</b>			
1. Lu Do & Lu Ym Corp.	Cebu City	900	297,000
2. NIDC Leyte	Tanauan, Leyte	125	41,250
3. Visayan Manufacturing Co.	Iloilo City	50	16,500
4. West Visayas Coco Dev. Corporation	Iloilo City	100	33,000
	Sub-total	1,175	387,175
<b>MINDANAO AREA</b>			
1. Iligan Bay Manufacturing Corporation	Kauswagan, Lanao del Norte	250	75,000
2. Granexport Manufacturing Corporation	Iligan City	1,000	330,000
3. Phil. International Dev. Corp.	Zamboanga City	280	92,400
4. NIDC Davao	Davao City	125	41,250
5. NIDC Jimenez	Jimenez, Mis. Occ.	125	41,250
6. Legaspi Oil Company	Davao City	700	231,000
7. Cagayan de Oro Oil Mill	Davao City	150	43,800
8. Davao Gulf Oil Company, Inc.	Cagayan de Oro City	350	115,500
9. International Copra Export	Davao City	300	99,000
10. Pacific Oil Products	Baliwasan, Zamboanga	300	99,000
11. Southern Island Oil Mills	Davao City	150	49,500
	Roxas, Zamboanga del Norte	400	132,000
12. Mindanao Coco Oil Manufacturing	Karomatan, Lanao Sur	250	82,500
13. Phil. Agro Edible Oil	Zamboanga City	200	66,000
14. Iligan Coconut Industries	Iligan City	300	99,000
15. Bislig Oil Mill	Iligan City	15	4,500
16. Lim Ket Kai Sons Milling	Cagayan de Oro City	300	90,000
	Sub-total	5,195	1,691,700
	GRAND TOTAL	10,834	3,522,080

Appendix Table 3. Data base used for Philippine copra exports model, 1960-1981

Year	CPRDN (1000 mt)	DMCRUSH (1000 mt)	EXPCOP (\$/mt)	EXPCOIL (\$/mt)	COPRODN (1000 mt)	PESODEV (P/\$)	CEXPTAX (percent)	Philippine Copra Exports (1000 mt)
1960	1,094.9	274.0	209	164	9,116.7	2.00	0	820.9
1961	1,002.3	308.0	166	172	9,337.8	2.00	0	694.3
1962	1,321.1	455.2	169	154	8,042.0	3.43	0	865.9
1963	1,516.9	575.0	188	187	6,887.0	3.43	0	941.9
1964	1,440.1	601.0	196	174	6,868.7	3.89	0	839.1
1965	1,480.5	621.3	207	182	7,355.9	3.91	0	859.2
1966	1,686.3	778.1	183	181	7,477.1	3.90	0	908.2
1967	1,402.8	639.8	186	173	7,756.4	3.90	0	763.0
1968	1,344.6	663.2	235	182	8,043.6	3.90	0	681.4
1969	1,157.5	604.0	205	190	8,125.6	3.90	0	553.5
1970	1,216.2	792.7	193	219	8,642.5	5.73	10	423.5
1971	1,610.0	899.5	156	191	8,951.4	6.4317	8	710.5
1972	2,021.1	1,052.6	99	170	8,922.4	6.6748	6	968.5
1973	1,709.1	981.1	190	224	9,999.6	6.7563	6	728.0
1974	1,320.2	1,010.7	302	233	9,604.0	6.7879	6	309.5
1975	2,172.0	1,339.4	120	167	10,570.6	7.2479	6	832.6
1976	2,430.5	1,563.5	105	172	11,400.2	7.4402	6	867.0
1977	2,235.1	1,675.2	139	162	13,302.1	7.4032	6	559.9
1978	2,238.0	1,858.2	160	152	13,437.7	7.3781	6	379.8
1979	1,795.0	1,650.1	214	133	14,761.4	7.3776	7.5	144.9
1980	1,954.0	1,830.7	127	111	14,011.3	7.5113	7.5	123.3
1981	2,122.4	2,012.9	93	116	14,901.1	7.8995	7.5	109.5

Sources: UCAP, PCA, IAPMP and FAO Production Yearbooks



Appendix Table 4. Data base used for Philippine coconut oil exports model, 1960-1981

Year	CNOSUP (1000 mt)	DMCRUSH (1000 mt)	WPCOILS (1000 mt)	EXPCNO (\$/mt)	EXPCOILS (\$/mt)	PESODEV (P/\$)	OEXPTAX (percent)	Philippine Coconut Oil Exports (1000 mt)
1960	170.0	274.0	1,195.0	311	332	2.00	0	58.9
1961	191.0	308.0	1,270.0	244	343	2.00	0	68.3
1962	282.2	455.2	800.0	243	329	3.43	0	151.2
1963	356.5	575.0	1,132.7	294	299	3.43	0	212.4
1964	372.6	601.0	829.7	315	317	3.89	0	232.9
1965	385.2	621.3	946.7	350	334	3.91	0	241.4
1966	482.1	778.1	970.0	297	309	3.90	0	313.2
1967	396.7	639.8	977.7	299	277	3.90	0	234.9
1968	411.2	663.2	1,044.3	382	271	3.90	0	270.5
1969	374.5	604.0	1,025.7	336	300	3.90	0	213.8
1970	491.5	792.7	1,183.0	319	307	5.73	0	334.3
1971	557.7	899.5	1,297.3	266	318	6.4317	6	405.2
1972	652.7	1,052.6	1,316.7	173	275	6.6748	6	469.0
1973	664.3	981.1	1,343.0	298	276	6.7563	4	428.6
1974	682.6	1,010.7	1,456.3	533	474	6.7879	4	433.3
1975	903.5	1,339.4	1,803.0	202	322	7.2479	4	591.6
1976	1,156.6	1,563.5	1,708.7	185	262	7.4402	4	851.2
1977	1,158.4	1,675.2	1,922.3	253	303	7.4032	4	790.9
1978	1,284.2	1,858.2	1,981.0	247	281	7.3781	4	989.4
1979	1,118.1	1,650.1	2,073.3	319	244	7.3776	4	794.6
1980	1,298.9	1,830.7	2,458.7	198	201	7.5113	4	914.0
1981	1,478.0	2,012.9	2,355.7	150	191	7.8995	4	1,051.7

Sources: UCAP, PCA IAPNP and FAO Production Yearbooks

## Appendix 5. International Price Index (1970 = 100)

Year	Index
1960	88.6
1961	89.4
1962	88.3
1963	88.7
1964	90.2
1965	92.8
1966	93.7
1967	95.2
1968	89.3
1969	90.2
1970	100.0
1971	108.5
1972	119.9
1973	144.6
1974	180.9
1975	208.7
1976	210.7
1977	231.1
1978	267.8
1979	303.2
1980	334.9
1981	365.1

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AN ANALYSIS OF FACTORS AFFECTING  
PHILIPPINE COPRA AND COCONUT OIL EXPORTS

by

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AN ABSTRACT OF A MASTER'S REPORT  
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## ABSTRACT

*The Philippines is the world's premiere producer and supplier of coconut products and by-products, providing more than 70 percent of world requirements.*

*The past years have been dynamic and propitious years for the coconut industry. Its performance, in terms of providing export dollars to support imports, generates employment and personal incomes, and has been most remarkable during 1976-1979. The income accruing from those years accounts for 21 to 27 percent of Philippine foreign exchange earnings from merchandise exports.*

*Total receipts from exports reached a shattering height of \$1.019 billion for 1979, surpassing past year's records. This has been the highest percentage contribution of the industry to the country's dollar receipts and international exchange payments. The coconut industry has thus, become one of the pillars of our economy.*

*But since 1979, the industry has been affected adversely by the depressed world market situation causing a general decline in world prices of coconut products. Recent years have placed the coconut industry in a crucible, characterized by reduced economic activity, generally caused by the world recession, glut of fats and oils in the world market, protectionist practices by many competitors and importing nations, and high interest and energy costs. These depressed economic conditions have resulted in a general decline in value of coconut products exports*

*and its accompanying impact on coconut farmers and processors.*

*In such a scenario, the future competitive position of Philippine coconut products in the world market is in great danger. There is, therefore, a need to adopt both domestic and international policies that will bail out the industry from its present predicament, if it is to maintain and strengthen its position as the number one international dollar exchange earner of the country, as well as the world's leading producer and supplier of coconut products.*

*Concrete steps are being undertaken to ensure and maintain the stability of the coconut industry through governmental policies and programs. Research studies must be undertaken to determine the economic impact of these policies, as well as to increase its competitive position at the producer and processor level. This will be crucial if the Philippines is to maintain its comparative advantage position in coconut production in the face of a more competitive world market for agricultural commodities. The developed nations and other competing developing nations are striving for an ever-increasing share of that world-trade dollars.*

*The results of the analyses presented in this study are intended to assist government policy-makers and planners in developing programs that are in line with greater self-sufficiency in some products, while expanding industrial growth and export development in other commodities, particularly coconuts.*