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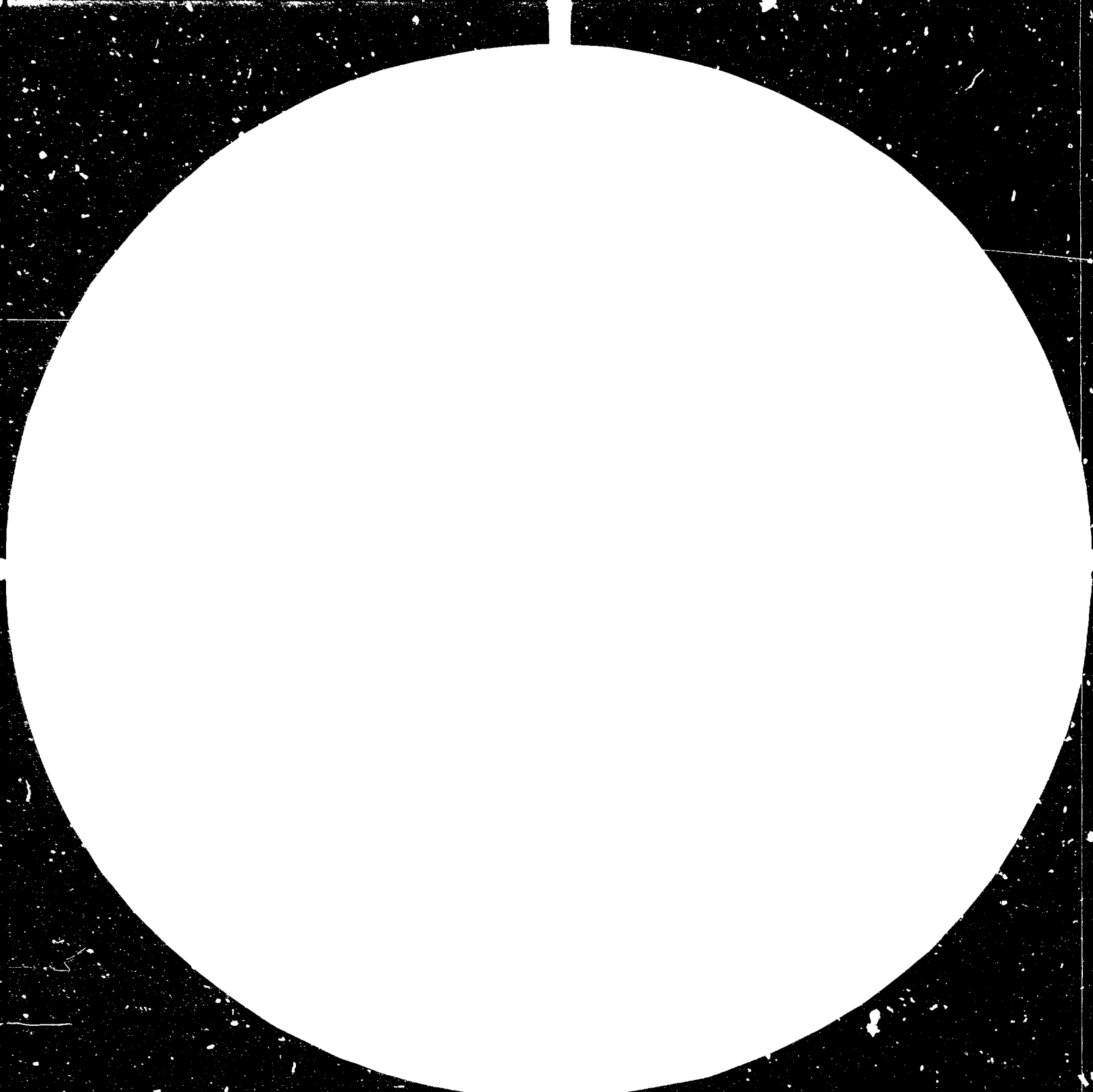


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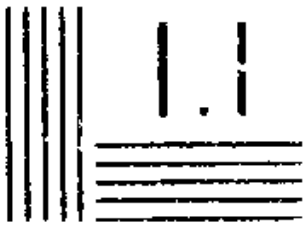
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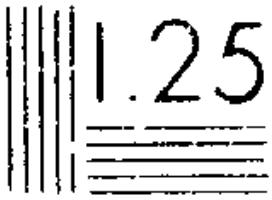
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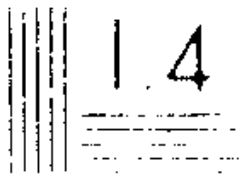
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ENGLISH

REVIEW OF THE VEGETABLE OILS AND FATS INDUSTRIES SECTOR OF THE PACIFIC REGION[1/]

DP/RAS/79/031

COUNTRY REPORT ON TUVALU .

(Ellice Islands)

Prepared for the Government of Tuvalu by the United Nations Industrial Development Organization in co-operation with the International Trade Centre UNCTAD/GATT

Based on the work of J. R. Santhiapillai and G. P. Yeats.

[1/] This document has been reproduced without formal editing.

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CONTENTS

RECOMMENDATIONS

1) Export fresh nuts to Australia.

2) Investigate feasibility of manufacturing laundry soaps by the Cold Process, and the same factory to produce coconut oil and copra cake for local sales.

3) Marketing of Copra

(a) The subsidy element is practically the entire copra price paid to the producer hence individual cost elements to be examined in detail e.g. the administration and handling charges of A$40 per tonne appears to be high, expenses as regards grading etc.

(b) Consider elimination/reduction of export duty.

4) As a region, press for establishment of a Futures market for copra and coconut oil.

5) Region press for payment of copra shipped overseas, based on specified standards.

INTRODUCTION

1. Project Background and Justification

The first consultation meeting on the Vegetable Oil and Fats Industry was held in Madrid from 12 to 16 December 1977.

This meeting convened by UNIDO in pursuance of the Lima Declaration and Plan of Action and General Assembly Resolution 3362, is part of its efforts to promote co-operation in raising the overall level of industrial production in developing countries. The meeting made a series of follow-up recommendations relating, inter-alia, to global policy for increased international and technical co-operation between the developed and the developing countries and among the developing countries themselves, and for specific follow-up action, both short-term and long-term.

UNIDO decided to carry out, through expert services, evaluation studies of the potential of the vegetable oil industries sector in a selected number of developing countries. This evaluation country study was to assess and evaluate the existing situation in the countries to be covered with regard to the availability and utilisation of oil-bearing materials (including the raw material potential), the domestic market situation (present demand) in vegetable oils and protein cake/meals and the present status of the vegetable oil industry. In fulfilment of the above decision, a UNIDO consultant on edible oils made a study of Western Samoa from November 20 to December 4, 1978.

Since the Pacific region is agronomically suitable for production of oil producing species, coconuts and oil palm, such raw materials offer one of few available possibilities for integrated agro-industrial development; vegetable oils and fats, detergents, cosmetics, protein cake/meals, livestock feed and further spinoffs and linkages with the agricultural sector.

It was agreed during the UNDP/ESCAP/SPC/SPEC Inter-Country Programming Meeting held in Suva in February 1979, that this type of study should be made into a Regional Pacific Project.

SPEC would like to see the exercise accord recognition to the concept that effective regional co-operation could be a positive means of reducing costs and rationalising development in the Pacific

2. Objectives

Development Objectives: The long term objective of this regional project is the promotion of regional self-sufficiency in production, processing and related agro-industrial development of vegetable oils and fats.

The study is to assess and evaluate the existing situation with regard to the availability and utilisation of oil bearing raw materials and the raw material potential the domestic market situation demands for a vegetable oil industry, protein/cake and the status of the vegetable oil industry at present in operation with a view to its further technical technological, and alternative development. It should provide specific long range recommendations towards improving the export of vegetable oils and fats, and provide marketing strategies in relation to present export patterns.

Immediate Objective: The immediate objective is to recommend methods that can be applied for improving local production and distribution and to provide a marketing diagnosis which will stimulate better export strategy which can be implemented in the immediate future.

Whenever applicable, the study should also consider evaluating oils and fats from animal sources and the possibility of developing viable productions and import substitutions.

3. Project

In fulfilment of the above, two consultants a) Joe R Santhiapillai - Team Leader and Vegetable Oil Industry Specialist from UNIDO b) George Yeats - Marketing Analyst from ITC, visited Fiji, Kiribati, Tonga, Western Samoa, Niue, TTPI, Papua New Guinea, Solomon Islands, Cook Islands, Nauru, Vanuatu and Tuvalu and prepared twelve country reports with tables, annexes and assessments made and based thereon. In addition the experts produced a summary of the regional study. The project was for a duration of six months.

4. Acknowledgments

Our sincere thanks are due to all the people we had met during our visits to the different countries. If not for their considerable help and co-operation this project would not have been a success. A list of those people principally involved in discussions is given at the end of the report.

During the project we were based at SPEC, Suva and our special thanks are due to the Director, Deputy Director, Administration Officer and Mr John Franklin, Trade and Marketing Officer and all at SPEC for their invaluable help and co-operation. Our thanks are also due to Mr Dello Strologo, SIDFA and all at the UNDP office in Suva for their help in innumerable ways.

TUVALU

Population Est.	:	8,000
G.D.P. per capita 1979	:	A$512
Land Area	:	26 sq. kms.
Sea Area	:	900,000 sq. kms.
Geography	:	Tuvalu consists of 9 populated coral atolls which are low and flat-Nanumea (361 h.a.), Nanumanga (310 h.a.) Niutao (226 h.a.), Nui (337 h.a. Vaitupu (509 h.a.), Nukufetau (307 h.a.), Funafuti (254 h.a.), Nukulaelae (166 h.a.) and Niulakita (41 h.a.)
Agricultural Production	:	Coconut is the main and only export agricultural crop. Copra accounts for 90% of the country' exports.
Total Production of Oils & Fats Equivalent	:	135 tonnes
Total Export of Oils & Fats Equivalent		135 tonnes
Total Imports of Oils & Fats Equivalent 1979 Est.	:	50 tons
Import Dependency	:	100%
Per capita consumption of oils & fats (food uses) 1979 Est.	:	4.5 kgms per annum
Per capita consumption of soaps & detergents	:	3.1 kgms per annum

Note: All figures exclude fresh nuts and invisible fats consumption.

COCONUT INDUSTRY

Coconut is practically the only agricultural crop in Tuvalu and represents one of the mainstays of both the subsistence and the cash economies of the country. Copra is virtually the only export and represents over 90% of the total exports.

Copra

Copra is produced by sun drying. The production of copra in 1980 was 210 tonnes and appears to be the average with the exception of 1979 - the figure for 1979 needs to be rechecked.

Alternatives to Export of Copra

1) Manufacture of Coconut Cream

This alternative unfortunately might not be feasible in Tuvalu as there is no central coconut producing island where the cream could be manufactured and shipped. As such the fresh coconuts would have to be shipped from the islands to Funafuti for manufacture and this might not be feasible.

2) Conversion of Copra to Coconut Oil

For all the copra to be converted to coconut oil the tonnage is too small to be viable and unfortunately the local consumption is too low to absorb all the oil produced. If oil is to be exported this would have to be in drums and would not be feasible.

3) Selling as Fresh Nuts to Australia

This is a field in which Tuvalu could engage to considerably increase returns to growers. Prices offered for fresh nuts can be as high as three times those offered for the copra equivalent. However the nuts do have to be a good size, in fresh condition and supplied regularly to keep the market. Tuvalu has a shipment prepared for an Australian firm, but export has been delayed due to shipping. This should be able to be overcome as there is a bi-monthly service to Australia, where the market has doubled from 2m units in 1979 to 4m units the following year, for one importer into Sydney alone.

4) Conversion of part of the Copra to Coconut Oil and manufacture of Soap

This could be a viable venture, if it is remembered that this will only be a very small scale industry for the manufacture of laundry soaps only.

The estimated size of the laundry soap market is only about 25 tonnes of laundry soap per annum. This soap could be produced from coconut oil by the Cold Process as there will be

only very little capital investment. If this is done this could also be a means of selling crude coconut oil and determine whether this could be promoted. Further the copra cake produced could be sold locally as partial replacement of pig feed and chicken feed as any way they are being fed on coconuts at present.

For 25 tons of laundry soap we would need about 15 tons of oil, and hence copra to be milled = 25 tons per annum.

Assuming about 5 tons of coconut oil could also be sold locally per annum we would need an expeller which could mill about 35 tons of copra per annum. Assuming about 75% efficiency the capacity of the expeller should be not less than 50 tons of copra per annum i.e. not less than 25 kgms of copra per hour.

Plant for Oil Milling

The plant required is a very small oil extracting unit. One of the manufacturers is Hander Oil Machinery Corporation, P O Box 293, Central Osahna, Japan.

The Japanese equipment needed is:

1) Copra Crusher Type AA

2) Copra Scorcher Type S with Electric Motor and Oil Burner

3) Oil Expeller Type 52

4) Filter Press A Type

The cost of the above equipment would be about A$75,000.

We understand that "Save the children" organisation is looking into the possibility of installing a small oil expeller and would therefore recommend the above for consideration.

SOAP MANUFACTURE

The equipment needed for manufacturing soap by the Cold Process would only be an open end drum, and a few wooden moulds. The process basically involves mixing and stirring.

Caustic Soda is dissolved in a container and the solution strength made up to 30% i.e. 37^{o}Be.

A suitable quantity of oil is taken in a drum and the caustic soda solution is gradually added with slow but steady stirring. Stirring is continued for about ½ hours when the mass thickens as soap is formed, and consistency indicates completeness of saponification. This mass is then poured into

the wooden moulds and allowed to remain in the mould for a day or two and the soap block removed. The block is then cut into bars.

Ingredients for 100 lb soap

Coconut Oil	64 lb
Caustic Soda (Sodium Hydroxide)	11 lb
Water	25 lb
	100 lb

CONSUMPTION AND FUTURE MARKET TRENDS

Consumption

Tuvalu produces about 135 t of vegetable oil (in oil equivalent terms) and imports a further 50 t (in oil equivalents) of oils or fats as butter, margarines, animal oils and fats, soaps and oil seeds. Production is entirely of copra which is exported. The consumption of oils (in oil equivalents) is thus equal to imports, or 6.3 kg per head per annum. Human use is divided into food use of 4.5 kg (per head) and non-food use (soaps and cosmetics) of about 1.8 kg (per head).

In this figure we have not included consumption of fresh coconuts as food by humans and animals. This is because there are no reliable data on this available. A range of 175 nuts per head per year to 365 is often quoted for the Pacific Islands. If the figure of 200 were taken, the oil equivalent of this quantity would be 200 t, making it easily the largest source of oil consumed in Tuvalu, and about 50% of production of the coconut industry. This method of consumption is rather wasteful in that usually the nut is split in half, the "water" wasted, the "meat" grated, and the resultant "cream" extracted. The residual "meal" is discarded or fed to livestock. However this is part of the culinary tradition of Tuvalu, and is important also in that it involves no cash outlay. As prices of all foodstuffs rise, it is likeky that the bulk of the population (villagers owning coconut groves) will consume more coconuts to substitute for foods which have to be bought.

Tuvalu consumption of oils and fats is similar to that of other Pacific island countries, and based on experience elsewhere, it is likely that as incomes rise, the consumption of fats and oils will rise even faster. This extra intake will most probably be in the form of greater consumption of fresh coconuts as mentioned above, but also as edible fats and oils. Given a preference, this most likely would be animal fats, however margarine would also be acceptable and could be made using a major component of coconut oil or palm oil.

MARKETING OF COPRA

This is handled by the Tuvalu Co-operative Copra Society, established in 1975. This has agents on the eight outer atolls of the Tuvalu group which buy and store sun dried copra of two grades.

The Copra Society Committee consisting of representatives from each producing atoll plus secretary and co-operative officer meets about three times a year, and a price sub-committee meets monthly. They operate a stabilization fund which has a contribution from the Stabex fund of the Lome Convention. The Society has no set ruling on adjustment of prices, and while we feel that with such a small industry its structure should not be too formalized, to have a price adjustment policy (to include operation of the stabilization fund and collection of export tax) to which to [illegible] would be desirable,

development. This would give the government the opportunity to formulate a clear policy for the eventuality that the stabilization fund will be exhausted, and the copra price can no longer be subsidised. This may happen in as little as one year at the new price level.

Copra is picked up by boat monthly in most atolls, but much less frequently in the northern group which is serviced only when it is needed to supply them with essential commodities. The copra is then carried on the boat via Funafuti to market in Fiji, or stock piled in Funafuti for a future shipment.

At the time of our visit prices for these grades were grade 1, A$224/t and grade 2, A$179.40/t. However from 1st June these were to be reduced to A$134.40 and A$112 respectively. The grading system was introduced recently, and is based on the Fiji system. Purchasing agents have been briefed on the grading system by issuing them with notes on the Fiji system.

All the copra produced is now sold to CASP Limited in Fiji at the same price at which it costs CASP to purchase its copra from Fiji.

<u>Pricing of Copra as at 19/5/81</u>

Price paid by Fijian buyer CASP Limited	=	F$145.50 cif.
	=	A$148.00
Freight = A$40, Insurance = A$2 from Funafuti to Suva	=	A$106.00 f.o.b. Funafuti
Freight and handling charges from other islands to Funafuti	=	A$22
Handling charges in Funafuti (unloading and loading)	=	A$8
	=	A$30
Hence price of copra outer islands	=	A$106-30
	=	A$76
Export duty (20% in excess of A$75)	=	A$6.00
Assuming administration and other charges	=	A$40
Nett price of copra without subsidy	=	A$76-A$46 = A$30/ tonne = 1.3ce per l
Present Price paid to the producers	=	10 cents per lb A$220 per tonne

Hence at the present price of 10 cents per lb paid to the producers the subsidy element is about 9 cents per lb! This reckoning does not take into account subsidised shipping by the government shipping service, which was said to be "substantial", costs of storage which is provided free by the government, and shrinkage and other losses between the atolls and Suva.

With the increasing costs the Society will very shortly find itself subsidising the entire price paid to the producers.

The Society will have to approach this problem in a more positive way and examine the individual costs involved in this operation and also examine the possibility of the Fijian buyers paying a higher price.

The following are some of the points worth noting:

(1) Administration and handling charges of A$40 per tonne appears to be high and needs detailed examination.

(2) The handling of copra has to be kept to a minimum. Some minor savings may be made in cutting out handling charges at Funafuti if atoll storage could be increased, and the ship fully loaded at one or two atolls and sailed direct to Suva, but this would result in less frequent delivery of goods to all atolls, and the government would lost out on handling charges at Funafuti. This might be possible by good planning and scheduling.

(3) Since the copra is sun dried the expense and necessity of grading would have to be examined.

(4) The Government would have to reconsider the imposition of an export duty on copra. It might be best to remove the export duty completely or in the alternative impose an export duty only if copra prices go above A$200 per tonne.

FUTURES TRADING, A MARKETING AID

It seems rather hollow, given the difficult conditions mentioned above, that consideration be given to a move to keep down fluctuations in world copra prices, but we believe that this is in the long term interests of the Tuvalu coconut industry to take into account.

A major trend which has emerged in many major world commodities in recent years is trading in futures.[1] "The futures market is basically an auction where contracts for future

1. Taken from "Export Crops Quarterly Review", Vol. 3 No. 1, April [illegible], Department of Primary Industry, PNG.

supply of commodities are traded. Contracts are bought and sold by members of the exchange on behalf of their clients. A futures contract is an agreement to buy or sell an amount of a commodity at a price at a future date. A futures contract can be bought and sold on a futures market, whereas a forward contract is a private agreement between one buyer and one seller. Most futures contracts do not in fact result in physical delivery of goods. The whole purpose of the futures market is to transfer the risk of price movements from the producer and end user to speculators. In this way producers can use futures to secure a fixed price for a commodity. This is known as hedging. In the same way one may hedge against fluctuation in currency exchange fluctuations". As yet there is no futures market in copra, coconut oil and copra cake, but this reports recommends that the countries of the region press for its establishment, and then take advantage of the opportunities it would give for stabilizing prices.

Participation in futures trading is a skilled activity and in order to enable the island countries to make best use of such a facility it is recommended that a suitable consultant be asked to address a future meeting of the Asian Pacific Coconut Community on this subject. This is further discussed below in the chapter on regional co-operation.

SHIPPING

Shipping services within the Tuvalu group of atolls is by the government vessel, the M.V. Nivanga, a small passenger cargo vessel with a capacity of 120 t in a single hold. It calls at most atolls monthly; but to the northern atolls only when required, which may be as infrequently as biannually. Although the boat only draws 7' anchorage is difficult at some atolls, a New Zealand team is currently reef blasting to facilitate entry to lagoons. This should assist considerably particularly in inclement weather.

The same vessel provides one of the two overseas links for Tuvalu, and it is on this route that all Tuvalu copra goes to Suva. Depending on copra production, the Nivanga sails to Suva some six times a year. The other shipping is the Ollson Shipping Lime which maintains a bi-monthly service to Tuvalu. This route is Australia-Papua New Guinea-Solomons-Tuvalu.

These shipping services are adequate for Tuvalu's needs, but give no opportunity for manoeuvring with freight rates, or coping with emergencies such as if the Nivanga were to have a major breakdown. It makes it awkward to slip the Nivanga as there is no replacement. For the purposes of regional trade, Tuvalu only has the opportunity to import from Papua New Guinea, the Solomons and Fiji, and to export to Fiji.

REGIONAL CO-OPERATION

Regional Co-operation in trade or industry is not well developed between Tuvalu and the other island countries in the region, although imports from Papua New Guinea and Fiji have grown, slightly in the period 1977-79, and all Tuvalu's copra goes to Fiji. Because of the production from most island countries, this trade is not likely to build up unless there is a positive move to do this.

It is our belief that it is desirable to increase trade with economies at similar levels of development. In this way industries may develop which would otherwise not have been able to when most trade was with highly industrialized countries.

This study also recommends that in line with world-wide trends in many major commodities, futures trading markets be established for copra, coconut oil and copra cake. Most of island countries in the region sell their copra on a London price basis, and most get a quality premium of 1%, yet the quality of their copras varies enough to suggest that in some cases this quality is not adequately rewarded. Moisture (affecting yield of oil), free fatty acid and colour (affecting cost of refining the crude oil), are the three most important characteristics concerned. This study would recommend that the region press for payment of copra sent overseas, based on its laboratory-tested description at point of delivery, and to provide information to support this move, a regional investigation be made of copra quality, and this be related to the cost of further processing. This would also be a necessary study to guide those countries which are now carrying out a multi-grading procedure and wish to know whether this should be continued or a simplified system instituted. A copra inspection course applicable to the whole Pacific should be instituted. This becomes more necessary as trade increases in copra within the region such as from Tuvalu to Fiji.

Unless positive steps are taken to site industries in the islands, the existing pattern of development is likely to become intensified i.e. trade between the islands and outside industrialized countries, rather than trade between the islands. Under this system, development of industries in the islands is always discouraged unless special measures, are taken to promote industry. These measures have so far not met with a good deal of success if measured against effective local control and ownership.

To encourage trade within the region, it is recommended that Tuvalu and other island nations included in this study initiate a trade declaration to promote trade and production in the region on a more co-ordinated basis than presently. This declaration could be used as a basis on which trade in, and production of, specific items could be discussed between island countries, and as a stronger negotiating force when dealing with

the non-island SPARTECA agreement countries of New Zealand and Australia to more fully implement the intention in the SPARTECA agreement that these countries use their Trade Commissioners to investigate markets abroad for island products. Presently this is done on a limited scale, but needs positive promotion.

COPRA PRODUCTION

	Tonnes
1980	212.5
1979	721.3
1978	153.6
1977	215.3

Source: Tuvalu Copra Co-operative Society

Note : 1979 production figures appears to be high and could be overstated particularly as the figure given for exports is 500 and the figure given by the shipping is 350 M.T.

IMPORTS - A$

	1977	1978	1979
Butter	7,191	21,907	23,064
Margarine & Shortening	10,817	12,745	20,497
Fined Vegetable Oils and Fats	1,562	2,209	7,809
Soaps & Detergents	17,539	34,107	28,419
Animal Feeds	-	56	238
Total Imports	1,246,862	1,572,755	1,850,820

EXPORTS 1979 - A$

Copra 517 tonnes	237,412
Beche-de-mer 1,032 kgms	4,548
Re-export of Films	14,668
	256,628

IMPORTS FROM PACIFIC ISLANDS - A$

	1977	1978	1979
Fiji	368,843	447,469	378,788
PNG	4,259	15,429	3,324

INTERNATIONAL PRICE OF SELECTED OILS AND OIL SEEDS, 1969 - 1981 (US $/M.T.)

Year	Oils					Oilseeds	
	Coco Oil Phil/Indo. Cif. Rott.[2]	Soybean Oil Dutch fob ex-mill[1]	Palm Oil Malaysian 5% Cif. Europe	Palm Kernel Oil, Dutch fob ex-mill[3]	Sunflower oil, a.a. ex-Tank Europe	Copra Phil/Indo Cif N.W. Europe	Soybean U.S. n 2 Yell Cif. Rott.
1969	347	197	173	306	213	202	107
1970	379	286	260	367	330	222	121
1971	353	304	262	336	374	190	132
1972	254	241	217	219	326	142	144
1973	513	436	376	506	481	348	290
1974	998	832	672	1,046	977	670	277
1975	394	563	433	409	739	256	220
1976	418	438	405	433	581	275	231
1977	578	575	530	620	639	402	280
1978	683	607	600	764	665	471	268
1979	984	662	654	1,064	762	673	298
1980	674	593	584	763	633	453	296
1981							
Jan.	614	545	625	829	690	433	323
Feb.	603	516	640	821	670	411	306
Mar.	574	536	620	805	630	392	305
Apr.	552	511	588	742	632	387	316

1) Prior to December 1970 — f.o.b. ex-tank Rott.

2) Prior to January 1973 — Sri Lanka cif. bulk. CIF Europe Ports

3) Prior to January 1972 — West African, CIF Europe Ports

Source: [illegible]

WORLD TRADE - MAJOR IMPORTING COUNTRIES

SHIPMENTS OF COPRA INTO THE FOLLOWING COUNTRIES

(Metric Tons)

	1975	1976	1977	1978	1979
Belgium-Luxembourg	20,247	18,300	15,000	13,200	5,200
Denmark	21,274	42,931	20,993	22,400	18,300
France	63,879	71,582	61,300	52,100	55,700
Netherlands	166,691	143,500	74,000	78,700	37,701
Spain	11,000	15,300	13,000	10,000	15,600
Portugal	11,100	17,000	25,900	24,300	18,200
Sweden	38,505	38,400	41,600	37,000	13,000
United Kingdom	28,988	21,345	25,598	19,100	22,074
West Germany	413,142	325,183	351,400	211,000	53,900
U.S.S.R.	29,000	9,300	19,900	9,800	14,500
Singapore	27,100	43,700	40,800	73,300	36,100 Nett
Japan	89,866	110,956	97,785	30,400	55,459
TOTAL:	920,792	1,062,697	786,073	641,300	365,933

Source: 1979 Annual Review Frank Fehr & Company Limited

Note: Main drop in imports is in Netherlands and West Germany. Total drop from 1975 to 1979 is 554,859 mt. Philippines drop in exports in the same period was about 650,000 mt.

PERSONS INTERVIEWED

1) Mr Vasa F Vave, Secretary, Copra Co-operation Society

2) Mr S Taafaki, Secretary, Ministry of Commerce and Natural Resources

3) Mr I Niuvatui, Senior Technical Officer

4) Mr Charles Borman, Department of Agriculture

5) Secretary, Ministry of Transport and Communications