PIDP

Pacific Islands Development Program

Multinational Corporations in the Pacific Tuna Industry

U.S. TUNA PROCESSORS

by

Robert T. B. Iversen

East-West Center • 1777 East-West Road • Honolulu, Hawaii 96848

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David J. Doulman, Ph.D.
Project Director
Multinational Corporations in the Pacific Tuna Industry
Pacific Islands Development Program
East-West Center
1777 East-West Road
Honolulu, Hawaii 96848 U.S.A.

Robert T. B. Iversen is the President of Pacific Fisheries Consultants, which he established in Hawaii in 1985 after retiring from the U.S. National Marine Fisheries Service and Department of State where he served as a fishery research biologist, administrator, fisheries development officer, and Regional Fisheries Attache at the American Embassy, Tokyo, Japan.

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FOREWORD

At its inaugural meeting in Pago Pago in 1981, the Pacific Islands Development Program was directed by the Standing Committee of the Pacific Islands Conference to evaluate the potential beneficial role of multinational corporations in the Pacific islands region. In 1984, the Standing Committee again addressed the question of multinational corporations and approved this study to be undertaken on a sectoral basis, with the tuna industry being the first sector to be examined.

The tuna industry was selected as the first sector for investigation by the Standing Committee because the tuna fishery and industry in the Pacific islands region affects all countries and territories. The broad objectives of the tuna sectoral study are (1) to analyze the current and future role of multinational corporations in the tuna industry in the Pacific islands region, and (2) to evaluate the potential contribution these corporations could make to industry development in the region. This is the first time that a comprehensive study of the tuna industry in the Pacific islands region will focus on regional and international issues affecting the industry from the perspective of all island countries.

A proposal outlining the tuna sectoral study was drawn up in 1984. This was done in consultation with the Forum Fisheries Agency and research commenced in January 1985. The study will produce a range of technical reports that will address issues critical to the development, management and expansion of tuna industries in the Pacific islands region.

This report, prepared by Robert T. B. Iversen, describes the organization and operations of the major U.S. tuna processors, including the problems they have overcome in restructuring the production and harvesting components of the tuna industry. It also discusses measures taken by the processors, which are characterized as flexibility and mobility, to return to profitable operations. A recently agreed treaty between the U.S. and 16 Pacific island nations over fishing rights hopefully will lead to new business arrangements between the two groups and with this in mind, the report reviews implications for the Pacific islands.

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ABBREVIATIONS AND ACRONYMS

AID	U.S. Agency for International Development
ATA	American Tunaboat Association
CYRA	Commission's Yellowfin Regulatory Area
CPUE	Catch Per Unit Effort
EEC	European Economic Community
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization of the United Nations
FLSA	Fair Labor Standards Act
GRT	Gross Registered Tonnes
IATTC	Inter American Tropical Tuna Commission
ITA	International Trade Administration
MMPA	Marine Mammal Protection Act
NMFS	National Marine Fisheries Service
OPIC	Overseas Private Investment Corporation
PAFCO	Pacific Fishing Company
SAMI	Selling Areas Marketing, Inc.
SPF	South Pacific Forum
USDOC	United States Department of Commerce
USDOL	United States Department of Labor
USITC	United States International Trade Commission
USTF	United States Tuna Foundation

ABSTRACT

Since the mid and late 1970s, the U.S. tuna processing industry has overcome a series of problems that have led to a fundamental restructuring of both its production and harvesting sectors. These problems have included a rapid buildup and decline in the sales of canned tuna in the U.S. market and a reduction in the size of the U.S. tuna purse seine fleet by about 50 percent. Offsetting this reduction in U.S. capacity there was an increase in foreign purse seine fishing effort which led to increased worldwide production of frozen tuna. This depressed ex-vessel frozen tuna prices, making the average U.S. purse seiner unprofitable. Many of these purse seiners were owned, or partly owned by U.S. tuna processors. Furthermore, change in consumer preferences toward canned tuna in water encouraged foreign canners to meet this demand. Low cost canners, especially from Thailand, have captured about 35 percent of the U.S. market.

The U.S. processors found their operations increasingly unprofitable, culminating in serious losses during 1982-1984. In order to cut costs, processors closed all but one of their California canneries, and consolidated their operations offshore in Puerto Rico and American Samoa because 1) labor costs are relatively lower, and 2) generous tax incentives are given. The tax incentives are described in this report. This led to a turn-around in profitability for the processors in 1985 with indications that profitability has continued into 1986.

During this period of change, U.S. processors also modified their tuna procurement policies. After divesting most of their equity in seiners, processors are now purchasing raw material on the world market. Relations between the U.S. processors and the U.S. fleet have deteriorated as a result of these activities. The seiners are less profitable, and recently brought a lawsuit against the corporate parents of three U.S. processors for almost US$1.3 billion.

To regain profitability, the U.S. processors have been flexible and mobile, characteristics they previously demonstrated in their tuna activities in Africa and in the Pacific island region. In the early 1980s a shift in U.S. purse seine fishing effort to the central and western Pacific resulted in the seizure of several seiners. A serious adversarial relationship developed between the Pacific island countries and the U.S. tuna industry over access rights to their 200-mile zones. A recently agreed treaty between the U.S. and 16 island nations has settled the access issue. Pacific island countries have expressed a desire to increase their tuna fishing and related activities, and the U.S. processors have expressed an interest in considering new business relationships with these countries.

The report reviews the processing activities of the major U.S. tuna companies, their interactions with both U.S. and foreign governments, and the long-term impacts of the factors leading to the restructuring of the U.S. tuna processing industry. It discusses the implications for the Pacific island region by U.S. tuna processor operations and proposes alternatives and potentials for tuna development in the region.

TERMS OF REFERENCE

U.S. TUNA PROCESSORS

The purpose of this study is to describe and analyze the role of U.S. corporate processors in the world tuna industry. Particular attention shall be focused on, but not limited to, the following five themes. Where applicable these themes shall be discussed in relation to their effect on, and implications for, tuna operations in the Pacific islands region.

1. **INDUSTRY OVERVIEW.** This section shall describe tuna operations since 1975 of U.S. tuna processors such as Castle and Cooke/Bumble Bee, CHB Foods/American, H.J. Heinz/Star Kist, and Ralston-Purina/Van Camp. To meet this objective, this section shall include among other issues:

   (a) the location and level of all domestic and overseas processing capacity and production, including overseas involvement in joint-venture companies and other affiliations;

   (b) supply of raw tuna by type and source for processing (imports, processor-owned vessels, long term contracting arrangements);

   (c) description and share of tuna processing activity within the overall corporate structure;

   (d) employment and wage structure by plant type and location;

   (e) description of processing technology;

   (f) evaluation of company management policy applicable in developing countries.

2. **GOVERNMENT INTERACTION.** This section shall address and analyze:

   (a) relationships between U.S. processors and foreign governments;

   (b) financial arrangements such as tax incentives, repatriation of profits from foreign countries, etc.;

   (c) relationship between U.S. processors and U.S. government.

3. **MARKET POSITION/SHARES.** This section shall describe the overall conditions under which processed tuna are marketed and sold by U.S. processors:

   (a) location of sales;

   (b) product price history;

   (c) brokers utilized;

(d) transportation arrangements and costs;

(e) relative market shares of the various processors;

(f) analysis of profitability of processing in general.

4. INDUSTRY RESTRUCTURING. This section will provide an analysis of economic and other factors which have motivated the recent restructuring of the industry. Issues to be examined include:

(a) identification of exogenous events which occurred between 1975-85 leading to the observed move off-shore of U.S. canneries;

(b) events internal to the corporations which led to the restructuring of the tuna processing industry;

(c) analysis of these events as to their long term impact on the industry; and

(d) an assessment of necessary conditions (i.e., wage levels, infrastructure, tax incentives) for establishment or expansion of a processing facility.

5. IMPLICATIONS FOR THE PACIFIC ISLANDS REGION. This section shall review the finding of the case study and apply the results to tuna operations in the Pacific islands region. Emphasis shall be placed on:

(a) analyzing the present and potential impact of U.S. processor operations on tuna operations in the Pacific islands region;

(b) investigating development alternatives and prospective problems and potentials for the Pacific island region based on experience of the U.S. tuna processor sector.

INTRODUCTION

The U.S. tuna processing industry is in the process of emerging from one of the most chaotic periods of its existence. Over the last decade the industry has gone from a position of pre-eminence on an international scale where its processing plants dominated canned tuna production and its purse seine fleets were the most numerous and modern to be found on the world's oceans, to a situation where the processors suffered severe financial losses, the harvesting fleets became unprofitable and contracted by 50 percent. Faced with aggressive foreign competition and a buildup of modern purse seine fleets by many other countries, U.S. tuna processors have taken drastic action to insure their survival.

The industry has closed all but one of its processing plants on the U.S. mainland where labor costs are relatively high, and has consolidated almost all of its productive capacity in offshore U.S. territories where labor costs are much lower and where generous tax incentives exist. The industry is divesting itself of equity in vessels that once provided the raw material for processing. U.S. processors now buy frozen tuna on the world market at prevailing prices. These measures taken by U.S. processors have enabled them to survive the unprofitable years of 1982-1984. Current indicators are that U.S. processors' operations are profitable and show signs of remaining so.

Prior to the 1980s, the U.S. industry had to work with a Federal government which, on the one hand, promulgated environmental regulations that hampered the fleet's ability to catch tuna and that were very expensive to comply with, and on the other hand, promoted policies that protected U.S. tuna fishermen when they sought to fish in the 200-mile exclusive economic zones (EEZs) of other coastal states. Moreover, the preference of U.S. consumers changed during this period; canned tuna packed in water rather than in oil became the more desired product. The duty on imported canned tuna packed in water is less than half the duty on tuna packed in oil, and this has caused a rapid escalation in the amount of canned tuna being imported to the U.S., especially from Thailand (which has captured a significant share of the U.S. market).

In the early 1980s, a large portion of the U.S. tuna purse seine fleet moved its fishing operations to the central and western Pacific. This was partly in response to the El Niño conditions of 1982-1983 which adversely affected operations in the eastern Pacific. The presence of the U.S. fleet in the Pacific islands and the subsequent seizure of several U.S. flag vessels promoted an adversarial relationship between U.S. fishermen and island countries. These difficulties led to a protracted series of negotiations between the U.S. and 16 Pacific island nations which concluded in October 1986 with agreement on a tuna treaty providing for U.S. vessel access to the EEZs of island countries. The treaty is expected to improve relations and hopefully set a climate in which the U.S. processing industry will provide technical assistance to those island nations wanting to develop tuna industries (including possible participation by the U.S. processors in new business arrangements).

This report provides a survey of the structure of the U.S. tuna processing industry, including the changing relations between the processors and the U.S. tuna purse seine fleet. Following a description of the major and secondary U.S. tuna processors, their processing locations and sources of supply of tuna, the report discusses labor and wage factors that caused processors to move offshore, tuna processing technology, and historical company policies toward developing countries. The relationships between U.S. processors and foreign governments and with the U.S. government are also reviewed, including tax incentives provided by Puerto Rico and American Samoa. The relative position of the various processors in the U.S. market and their profitability is followed by an analysis of the events leading up to the present restructuring of the U.S. industry. Finally, the implications of possible processor operations in the Pacific islands region and whether the Pacific island nations can learn from the recent experiences of U.S. processors as a guide for developing tuna industries are examined. Conclusions are drawn on how Pacific island countries, U.S. tuna processors, and the U.S. tuna industry in general might cooperate to their advantage in future.

INDUSTRY OVERVIEW

The resource

Table 1 shows the catch of tunas on a worldwide basis from 1981 through 1984 by principal species and oceans (Patterson and Peckham 1986:4). In 1984, tuna catches of 2.1 million tonnes made up about 3 percent of the world's total catch of all marine fisheries of 74.9 million tonnes (USDOC 1986a:36). In 1984 about 1.43 million tonnes of five species of tuna (yellowfin, bigeye, skipjack, bluefin, and albacore) were caught in the Pacific. Exact amounts taken from such general areas as the eastern tropical Pacific and the central and western Pacific island areas are difficult to estimate because FAO reporting zones do not correspond exactly to these geographic areas. Quantities taken in these areas, however, are very large. For example, average annual landings of tunas for the years 1978-1981 in the eastern tropical Pacific were 437,000 tonnes (Joseph 1986:15). In 1984, fleets in the central and western Pacific from distant-water fishing nations caught an estimated 598,720 tonnes of tuna (Doulman 1986a:14). Of these 598,720 tonnes, 375,000 tonnes were taken by purse seiners, 148,620 tonnes by longliners, and 75,100 tonnes by pole-and-line vessels. The total market value of the 1984 catches in the Pacific island region are estimated to be US$662.7 million, with longline catches valued at US$385.4 million, purse seine catches valued at US$236 million, and pole-and-line catches valued at US$41.3 million (Doulman 1986a:13).

The ability of Pacific tuna stocks to withstand such fishing pressure varies according to the species. In the western and central Pacific, with the exception of Hawaii (Hudgins 1986a:14), skipjack stocks are robust and continued expansion of skipjack catches is considered to be viable (Sibert 1986:20).

Continuation of present yellowfin catch levels in Pacific island areas is less certain. The catch per-unit-of-effort (CPUE) by longliners since 1962 has fallen by a factor of almost two, while average catch rates by purse seiners are somewhat constant, with very high month to month variations (Sibert 1986:21). Sibert (1986:22) has reported that bigeye in the islands region "is viable and the present levels of exploitation could probably sustain higher catches." The harvest of southern stocks of albacore is mainly by longliners fishing in the more subtropical areas, but data for longline fisheries is not as complete as that for other species (Sibert 1986:22). There is a domestic troll fishery by New Zealand vessels that currently lands about 4,000 tonnes each year, and small U.S. trollers operating from southern California and Hawaii are testing surface albacore stocks in the southern summer in the vicinity of 150°W. at latitudes from 38-42°S. Fishing was very good in 1986 (Laurs 1986:14). Industry sources report fishing is even better in early 1987.

Research by the Inter-American Tropical Tuna Commission (IATTC) indicates that eastern tropical Pacific stocks of yellowfin can sustain an average annual catch of about 160,000 tonnes from the commission's yellowfin regulatory area (CYRA), extending along the Pacific coastline off Mexico and Central and South America to 125°W. (Joseph 1986:14). Recent

Table 1. World tuna catches by principal species and ocean, 1981-84

Species by ocean	1981	1982	1983	1984
	(000s tonnes)			
ATLANTIC				
Yellowfin	140.1	144.0	142.3	114.9
Bigeye	59.2	66.0	46.4	54.6
Bluefin	24.6	29.1	32.0	31.9
Skipjack	130.3	139.3	149.0	132.9
Total light meat tuna	354.2	378.4	369.7	334.3
Albacore	66.4	77.7	71.5	66.8
Total all species	420.6	456.1	441.2	401.1
INDIAN				
Yellowfin	37.6	45.1	56.1	79.6
Bigeye	33.5	36.5	44.3	33.6
Bluefin	25.8	29.2	36.9	30.2
Skipjack	42.1	47.4	63.6	97.2
Total light meat tuna	139.0	158.2	200.9	240.6
Albacore	9.5	19.1	19.4	18.8
Total all species	148.5	177.3	220.3	259.4
PACIFIC				
Yellowfin	398.5	355.2	374.1	403.0
Bigeye	100.9	108.4	110.7	101.5
Bluefin	38.8	32.1	21.3	11.0
Skipjack	561.2	571.6	690.1	817.9
Total light meat tuna	1,099.4	1,067.3	1,196.2	1,333.4
Albacore	112.9	106.6	86.6	100.2
Total all species	1,212.3	1,173.9	1,282.8	1,433.6
GRAND TOTAL				
Yellowfin	577.9	544.2	572.5	597.5
Bigeye	193.8	210.9	201.4	189.7
Bluefin	89.2	90.4	90.3	73.1
Skipjack	733.5	758.2	902.6	1,048.1
Total light meat	1,594.4	1,603.7	1,766.8	1,908.4
Albacore	188.9	203.3	177.5	185.7
Total all species	1,783.3	1,807.0	1,944.3	2,094.1

Source: Patterson and Peckham 1986.

yellowfin catches in the CYRA by vessels of all nations have been high—190,750 tonnes in 1985 and 234,077 tonnes in 1986, an indication of overfishing (USDOC 1986b:4).

Principal U.S. tuna processors

There are four principal wholly U.S. owned tuna processors: H. J. Heinz Company, which processes tuna through a number of subsidiaries bearing the name of Star-Kist; Ralston Purina through its subsidiary Van Camp Seafood Company, Inc.; Bumble Bee Seafoods, Inc.; and California Home Brands, Inc., through its division Pan Pacific Fisheries.

There are two other secondary processors of tuna in the U.S., owned by Japanese interests. They are 1) Mitsubishi Foods (MC), Inc., a subsidiary of Mitsubishi International Corporation and Mitsubishi of Tokyo, and 2) Ocean Packing Corporation of White Plains, N.Y., a subsidiary of Mitsui and Co. (USA) Inc. which is owned by Mitsui and Co., Ltd., a large trading firm. Mitsubishi processes tuna in Puerto Rico through its subsidiary Caribe Tuna, Inc., and Ocean Packing processes through its Puerto Rico subsidiary Neptune Packing Inc. This report, however, deals predominantly with the four major U.S. owned tuna processors.

References to the four U.S. owned processors in this report will normally be by their subsidiary's names, such as Star-Kist, Van Camp, Bumble Bee and Pan Pacific, unless discussion calls for reference to their corporate parent. Table 2 gives the locations of these companies, their subsidiaries and various processing facilities.

Star-Kist. The principal tuna operating company of Star-Kist is Star-Kist Foods, Inc., founded in 1917 and acquired by H. J. Heinz Co. in 1963. Its corporate headquarters are in Long Beach, California. Through its several wholly owned subsidiaries, Star-Kist is the largest U.S. tuna processor and producer of canned tuna and tuna related products. It has over one-third share of the domestic market, selling canned tuna under the "Star-Kist" label (USITC 1986). Tuna and tuna related products processed by Star-Kist account for the largest share of the total sales of products of H. J. Heinz. In fiscal years 1984-1986, tuna and tuna related products averaged 19.3 percent of all consolidated sales of H. J. Heinz Co., and in 1986 Star-Kist produced 22.5 percent of the total operating earnings of H. J. Heinz Co.[1] Its principal tuna processing plants are located in Mayaguez (Puerto Rico) and Pago Pago (American Samoa). The Mayaguez plant is the world's largest tuna cannery and its Pago Pago cannery is the world's second largest. Both plants have recently had their capacities significantly expanded; the Puerto Rico cannery by 22 percent and the American Samoa cannery by about 40 percent (H. J. Heinz, 1985:17). Star-Kist also has a tuna processing plant and cannery in St. Andrews (New Brunswick) Canada.

H. J. Heinz also has a tuna processing facility in Douarnenez, France, and a tuna processing plant in Australia (Greenseas Division of H.J. Heinz, Co. Australia, Ltd.).

At one time Star-Kist operated as many as seven cold storage and collection/transshipment stations throughout the world, but only three are

Table 2. U.S. tuna processors, parent corporations, and subsidiaries; location by firm of processing plants and other facilities

Major processors	Facility and location
Bumble Bee Seafoods, Inc. San Diego, California	Processing plant, Mayaguez, Puerto Rico (Bumble Bee Puerto Rico, Inc.)
	Processing plant, Manta, Ecuador (Sociedad Ecuatoriano de Alimentos y Frigorificios—Ecuadorian Food and Refrigeration Society)
California Home Brands, Inc. Terminal Island, California	Processing plant, Terminal Island, California (Pan Pacific Fisheries)
Star-Kist Foods, Inc. Long Beach, California (H. J. Heinz, Co.)	Processing plant, Terminal Island, California
	Processing plant, Mayaguez, Puerto Rico (Star-Kist Caribe, Inc.)
	Processing plant, Pago Pago, American Samoa (Star-Kist Samoa, Inc.)
	Processing plant, Tema, Ghana/ Collection station, Abidjan, Ivory Coast (Star-Kist International, S.A.)
	Processing plant, St. Andrews, N.B., Canada (Star-Kist Canada, Inc.)
	Processing plant, Douarnenez, France (Ets. Paul Paulet)
	Processing plant, Eden, N.S.W., Australia (H. J. Heinz Co., Australia, Ltd.)
	Cold storage/collection stations: Dakar, Senegal; Agana, Guam; LePort, Reunion Island
Van Camp Seafood Co., Inc. St. Louis, Missouri (Ralston Purina Co.)	Processing plant, Ponce, Puerto Rico (National Packing Co.)
	Processing plant, Pago Pago, American Samoa (Samoa Packing Co.)
	Transshipment/collection stations: Tema, Ghana; Port-of-Spain, Trinidad; Abidjan, Ivory Coast
Secondary U.S. processors	
Mitsubishi Foods (MC) Inc. San Diego, California	Processing plant, Ponce, Puerto Rico (Caribe Tuna, Inc.)
Ocean Packing Corp. White Plains, New York (Mitsui and Co. (USA) Inc.)	Processing plant, Mayaguez, Puerto Rico (Neptune Packing, Inc.)

Sources: Company annual and 10-K reports, National Marine Fisheries Service; personal communication with company officials.

now operational: Dakar, Senegal; Agana, Guam; and LePort, Reunion Island. Vessels delivering to Star-Kist may also transship through Tinian, Northern Mariana. Star-Kist also operates a number of pet food plants in various locations in the U.S.

The Puerto Rico Star-Kist plant has an annual capacity of approximately 136,077 tonnes and is operating at close to full capacity. The plant employs about 4,000 persons. The American Samoa plant has an annual capacity of about 101,604 tonnes, and is operating at about 90 percent capacity.[2] The average employment in Star-Kist's American Samoa plant for the months of February, May, August and November 1986 was 2,358.[3]

Van Camp. Van Camp Seafood Company, Inc. is a wholly owned subsidiary of Ralston Purina Co., Inc., which acquired Van Camp in 1963. Both companies have their corporate headquarters in St. Louis, Missouri. For a number of years Van Camp was a division of Ralston Purina, but it became an independent subsidiary on September 30, 1985 (Ralston Purina Co. 1985:3). It is the second largest U.S. tuna processor and producer of tuna and tuna related products in the United States with about one-fifth of the domestic market.[4] In fiscal year 1985 Van Camp accounted for 4.8 percent of the total sales of Ralston Purina (US$253.0 million out of total sales of US$5.3 billion) (Ralston Purina Co. 1986b:16). Van Camp produces canned tuna and salmon under the "Chicken of the Sea" label, operating tuna processing plants and canneries in Ponce, Puerto Rico and Pago Pago, American Samoa. Van Camp does not operate any tuna processing plants outside U.S. territory nor is it engaged in any tuna processing joint ventures with foreign partners. Van Camp has a transshipment/collection station in Tema, Ghana, and also transships through Port-of-Spain, Trinidad. Tuna purse seiners delivering fish for Van Camp caught in the western Pacific are believed to be transshipping out of Agana, Guam and also Tinian, Northern Mariana.

The processing capacity and present production levels of Van Camp's plants in Puerto Rico and American Samoa are not known exactly, but industry sources indicate that the plant in Puerto Rico has an annual capacity of about 41-55,000 tonnes per year and the American Samoa plant has a capacity of about 70,000 tonnes per year. Based on the ratio of the number of employees of Star-Kist to Van Camp in American Samoa in 1986 (Star-Kist 2,358; Van Camp 1,244), the capacity estimate of 70,000 tonnes annual for Van Camp Samoa may be too high.

Bumble Bee. Bumble Bee Seafoods, Inc., with headquarters in San Diego, California, became a private corporation in June, 1985 when its corporate parent, Castle and Cooke, Inc., a large Hawaii based multinational conglomerate, arranged for its sale to a number its former senior managers by a leveraged buyout. The sale in 1985 did not cover all of Bumble Bee's facilities, as Castle and Cooke subsequently sold its tuna processing plant and cannery in Honolulu, known as Hawaiian Tuna Packers, to a newly formed Hawaii company, WRAF, Inc. In 1986, WRAF obtained a long term land lease from the State of Hawaii. The lease requires establishment of at least a one line tuna canning operation, but it is unknown when tuna processing and

canning will be resumed by WRAF. WRAF did not acquire rights to the Bumble Bee label.

The new Bumble Bee company is the third largest U.S. tuna processor and canner, selling under the "Bumble Bee" label. It holds about 16 percent of the U.S. domestic market. Bumble Bee's present facilities include a tuna processing and canning plant in Mayaguez, Puerto Rico and a processing plant and cannery in Manta, Ecuador. It also has a subsidiary known as Bumble Bee International, Inc. in Tokyo where it trades in tuna, including tuna for the Japanese sashimi market.

At the time Castle and Cooke was divesting itself of its Bumble Bee subsidiary, the tuna operations contributed by far the largest share of Bumble Bee's combined sales of tuna, salmon and shellfish. In 1984, tuna revenues were US$213.5 million out of total Bumble Bee seafood sales of US$301.4 million (Castle and Cooke, 1985:11). The present Bumble Bee tuna processing and canning facility in Puerto Rico has an annual capacity of about 64,000 tonnes and recently has been operating at about a 93 percent capacity. It employs about 1,300 persons.[6] The processing and production capacity, as well as number of employees for its Ecuador operation, is not public information.

Pan Pacific Fisheries. Pan Pacific, a division of California Home Brands, Inc., with corporate offices in Terminal Island, Californa is the fourth largest tuna processor and canner in the United States.[7] Its share of the U.S. domestic canned tuna market is not known, since it sells its canned tuna under a number of private labels for supermarket chains and also under its own house labels of "C.H.B.," "Top Wave," "Lucky Strike," and others. The September, 1986 Selling Areas Marketing, Inc. (SAMI) market survey shows private labels holding a 17 percent U.S. market share. The percentage of this share made up by Pan Pacific sales is believed to be a significant amount. Pan Pacific was a division of C.H.B., Inc. until 1985, when the company was sold and its name changed to California Home Brands, Inc., a privately held company. Pan Pacific's contribution to the new company's overall revenues is presumed to be considerable because in 1984, Pan Pacific's fish products (which also includes mackerel) provided 30.3 percent (US$88.3 million) of C.H.B.'s total revenues of US$291.4 million (C.H.B. Foods, Inc. 1984a:22). The company operates one tuna processing and canning facility at Terminal Island, California that employs about 500 workers. It has no overseas operations. The processing capacity and present level of production of the Terminal Island cannery is not known. California Home Brands, Inc. also processes a variety of food items, including canned fruits, vegetables, soups and pet foods.

Secondary U.S. tuna processors

Both secondary U.S. tuna processors are Japanese owned. They are Mitsubishi Foods (MC), Inc., with headquarters in San Diego, California, and Ocean Packing Corporation of White Plains, N.Y.

Mitsubishi Foods (MC), Inc. is jointly owned by the Mitsubishi International Corporation and the Mitsubishi Corporation, Japan and

operates a tuna processing plant in Ponce, Puerto Rico under the name Caribe Tuna, Inc. This plant employs about 700 people and has a capacity of about 27,000 tonnes per year. Its canned tuna is sold under the "3-Diamonds" brand, which is primarily distributed in the eastern and mid-west parts of the United States. Canned tuna sales make up about 50 percent of all sales of Mitsubishi Foods (MC), Inc., the remaining 50 percent being other types of canned foodstuffs, primarily fruits and vegetables. Mitsubishi Foods (MC) does not own or operate any tuna fishing vessels.

Ocean Packing Corporation operates a tuna processing and canning facility in Mayaguez, Puerto Rico under the name Neptune Packing, Inc. Ocean Packing is a wholly owned subsidiary of Mitsui and Co. (USA) Inc., which in turn is owned by Mitsui and Co., Ltd. of Japan. It employs about 500 persons, but its processing capacity is unknown. Ocean Packing recently sold three tuna purse seiners of Panamanian registration to a South Korean company.

Relations between harvesters and processors

Relations between tuna purse seine vessels (harvesters) and the four principal processors have undergone significant changes starting in the late 1970s. Prior to the 1980s, tuna processors often owned outright, or had large financial controlling interests in, purse seiners that supplied frozen tuna. This type of relationship helped the processors have a guaranteed source of supply. But as the high carrying cost of investment in vessels increased—many of which were financed during the late 1970s--a period of very high interest rates, U.S. tuna processors began to divest themselves of seiners. For example, Bumble Bee purchased 12 seiners from the Gann fleet in 1975 for US$30.5 million in cash and notes, only to resell them in 1982 (Castle and Cooke, Inc. 1975:3). This coincided with the reduction in raw tuna prices on the world spot markets in the early 1980s. By fiscal year 1986, Van Camp owned or operated 17 tuna seiners, of which it had a 100 percent interest in 9, a 50 percent or less interest in 6 and a long-term lease on 2 (Ralston Purina Co., 1986b:9). At present Star-Kist has an equity interest in about 15 to 20 seiners, but at one time had an equity interest in almost 50 purse seiners. Bumble Bee owns two seiners of 180 and 220 tonnes carrying capacity, which fish out of Ecuador. In 1984, Pan Pacific owned 11 seiners, but recently sold its remaining six seiners, two to a U.S. firm, three to Venezuelean interests, and one in Ecuador. The end result of this divestment in fleet by the processors was a shift of financial risks associated with vessel operations from the processors and harvesters entirely to the harvesters.

Decisions by processors to divest themselves of ownership and interests in seiners caused strain between the processors and vessel owners. Relations between the two groups took a turn for the worse in 1985 when a group of vessel owners sued the three largest U.S. processors (Star-Kist, Ralston Purina and Castle and Cooke). The following description of this suit illustrates the seriousness of the problem between some vessel owners and the processors (USITC 1986).

"A complaint for Damages and Injunctive Relief, (was) filed by Ed Gann, et al., vs. Star-Kist Foods, Inc., Ralston Purina, Inc., and Castle & Cooke, Inc., on February 14, 1985 in United States District Court for the Southern District of California. The 24 original plaintiffs, representing 54 tuna purse seiners—a majority of the U.S. flag tuna fleet, have alleged that defendants and other companies and individuals not named in the complaint engaged in a variety of acts in violation of sections 1 and 2 of the Sherman Act and section 3 of the Clayton Act. Plaintiffs are seeking treble relief for alleged damages totaling US$432 million, or almost US$1.3 billion. The alleged acts include a continuing combination and conspiracy in unreasonable restraint of interstate and foreign trade and commerce in tuna and canned tuna, conspiracy to monopolize, attempted monopolizations, and monopolization of interstate trade and commerce in tuna and canned tuna. In addition, defendants are alleged to have entered into unlawful tie-in contracts, exclusive dealing contracts, and requirement contracts. On May 13, 1985, the District Court dismissed with leave to amend the allegations relating into unlawful tie-in contracts, exclusive dealing contracts, and requirements contracts. On June 6, 1985, plaintiffs filed an amended complaint restating the above allegations except those concerning alleged violations of section 3 of the Clayton Act and violations with respect to canned tuna."

As of December 11, 1986, 260 filings, motions and counter-motions, and various other court orders and proofs of service had been entered into the record for this case.[8] At the present time, the case is in the discovery phase, and is not expected to come to trial before late 1987 at the earliest. The number of plaintiff vessels has now been reduced to 21. Star-Kist is defending itself vigorously against the suit and in November, 1985 filed its own antitrust and state law counter-claims against the plaintiffs (H. J. Heinz Co. 1986b:58). Ralston Purina and Castle and Cooke are also vigorously fighting the charges.

Supply and source of raw tuna for processing

U.S. tuna processors obtain their raw tuna from an international market, composed of landings in the United States from domestic vessels—primarily purse seiners—and from imports of frozen tuna. However, the U.S. share of world raw tuna imports has steadily fallen from roughly 49 percent in 1979 to 30 percent in 1984 (USITC 1986). In 1985, U.S. imports of raw tuna were 5 percent less than in 1984 (Herrick and Koplin 1986:Table 2).

In 1985, most of the catch of the U.S. fleet was produced in the western Pacific: 117,417 tonnes, 52 percent of domestically caught cannery receipts and U.S. direct exports for that year (Herrick and Koplin 1986). U.S. domestic cannery receipts from the western Pacific in 1985 were 87,650 tonnes of skipjack, 29,013 tonnes of yellowfin, and 754 tonnes of albacore. In 1985, many U.S. purse seiners moved back to the eastern Pacific where

fishing was good and where they were close to their home bases, sources of supplies and repairs.

In 1985, the eastern Pacific area produced 102,430 tonnes of U.S. domestic for all cannery receipts combined. The average annual cannery receipts from the eastern Pacific during 1980-1985 for all species was 137,621 tonnes, with a low of 87,562 tonnes in 1984 and a high of 205,005 tonnes in 1980 (Herrick and Koplin 1986). In 1986, with most of the U.S. fleet still fishing the eastern Pacific's CYRA, catches remained high, with a total catch of all species (including non-U.S. flag vessels) of 299,784 tonnes (USDOC 1986b:4).

In the mid-1970s, when the number of U.S. flag purse seiners was at its highest, domestic landings were also high, peaking in 1976 at nearly 300,000 tonnes. U.S. imports of frozen tuna from 1970-1980 fluctuated widely; approximately 210,000 tonnes in 1970, 380,000 tonnes in 1975, 215,000 tonnes in 1976, 395,000 tonnes in 1978, and 340,000 tonnes in 1980. Since 1977, domestic landings have been between 213,000-266,000 tonnes annually, with an average annual landing from 1977-1985 of 234,000 tonnes (Peckham 1986).

In 1984 and 1985, the U.S. imported frozen tuna from 33 countries--245,354 tonnes in 1984 and 233,682 tonnes in 1985. In 1985, the 10 leading exporters of frozen tuna to the U.S. were: Venezuela (30,552 tonnes), South Africa (19,140 tonnes), Ecuador (16,981 tonnes), South Korea (16,889 tonnes), Seychelles (15,715 tonnes), Taiwan (15,001 tonnes), Brazil (14,505 tonnes), Ivory Coast (14,410 tonnes), Panama (13,730 tonnes), and the Netherland Antilles (11,162 tonnes), (Peckham 1986:83). The amount of imports from these countries can be misleading, however, because they do not necessarily mean that vessels owned and crewed by nationals of these countries actually caught the tuna.

The decrease of U.S. imports of raw tuna in recent years reflects the shift of processing capacity away from the U.S. and its possessions to overseas producers, especially to Thailand. For example, Thailand in 1983 imported 26,308 tonnes of raw tuna for processing, increasing to 109,768 tonnes in 1984; an increase of 417 percent. All of this tuna was canned for export from Thailand, with most going to the United States. In 1979, Thailand exported only 2,197 tonnes of canned tuna to the United States, which was nine percent of U.S. imports. By 1985 Thailand exported 55,631 tonnes to the United States, which now accounts for 57 percent of United States canned tuna imports (USITC 1986).

The methods by which U.S. tuna processors arrange for the purchase, acquisition, and delivery of frozen tuna are diverse and have undergone a number of changes in recent years. A comprehensive description of the flow of frozen tuna from the producers to the processors is given by the USITC report (1986). Details of contract terms with vessels, "spot market" brokers, and long-term supply arrangements are considered confidential by processors. However, as world production of frozen tuna was increased, which lowered frozen tuna prices, processors have tended to purchase on the "spot market" or from individually owned tuna vessels (USITC 1986).

Nonetheless, processors have found it useful to maintain financial interests in some vessels, and often provide trip advances for fuel, repairs, and provisions in order to maintain a mutually beneficial relationship with these vessels. These arrangements ensure a steady delivery schedule for the fish caught by these vessels to the processors providing the advances and diminish the need for transshipping in foreign flag refrigerated carriers (H.J. Heinz Co 1986a:3).

Tuna processors in American Samoa have an advantage over those in Puerto Rico when it comes to the delivery of frozen tuna. Because American Samoa is outside the U.S. customs district, foreign flag fishing vessels can unload their catches directly into the canneries in the territory, while in Puerto Rico tuna caught by foreign fishing vessels must be transshipped outside Puerto Rico for delivery to the canneries. As a result, a fleet of about 60 to 80 Taiwanese and South Korean tuna longliners operate out of Pago Pago, and deliver their catches direct to the American Samoan canneries.

Share of tuna processing activity within overall corporate structures

The proportion of activity made up by tuna processing within the overall corporate structures of the four major U.S. tuna processors varies widely. Data on the share of these processors are given in Tables 3 through 6. Data for two companies, Bumble Bee Seafoods, Inc., and California Home Brands, Inc., (and its Pan Pacific Fisheries Division) are not available for years later than 1984. This is because both companies were sold and became privately held in 1985, and no longer issue public annual or 10-K reports.

In recent years (1984-1986) sales of Star-Kist's tuna and tuna related products has made up 19.3 percent of the total sales of its corporate parent, H. J. Heinz Co. (Table 3). Van Camp's sales of seafood products (which includes a small amount of non-tuna products such as canned salmon and oysters) has averaged 6.3 percent of the total net sales of Ralston Purina Co. from 1981-1986, ranging from a high of 8.5 percent in 1981 to a low of 4.8 percent in 1985 (Table 4). Since Bumble Bee is now privately held, it is assumed that tuna sales make up the majority of its seafood product line, which also includes canned salmon, smoked and whole oysters, and Figaro cat food. When Bumble Bee was a subsidiary of Castle and Cooke, Inc., its revenues from tuna sales as a percentage of the total revenues from Castle and Cooke in 1982, 1983 and 1984 averaged 14.0-14.7 percent each year (Table 5). Pan Pacific, as a division of C.H.B. Foods, Inc., produced the highest share of revenues for its corporate parent. During 1980-1984, Pan Pacific's share of C.H.B.'s total revenues was never less than 30.3 percent (1984) and was as high as 35.1 percent (1980).

As a privately held company, Bumble Bee's annual sales have reportedly increased and are in the 250 million dollar range (USITC 1986). Data for Pan Pacific's share of California Home Brands current sales are not available.

Star-Kist appears to be the most successful subsidiary in terms of the parent corporations's recent earnings. For the years 1984-1986,

Table 3. Description of tuna processing activities of Star-Kist Foods, Inc., as part of overall operations of H. J. Heinz Co., Inc.

	(US$ 000s)		
	1986	1985	1984
Total sales; H. J. Heinz	4,366,177	4,047,945	3,953,761
Share of total sales of tuna and tuna related products; Star-Kist (%)	19	19	20
Sales of tuna and tuna related products	829,574	769,110	790,752
Percentage change in tuna sales from previous year (%)	+7.86	-2.70	n.a.

	(US$ millions)		
	1986	1985	1984
Total international earnings; H.J. Heinz	$ 551.1	$ 491.5	$ 454.1
Star-Kist (domestic) earnings	124.0	113.5	101.0
Star-Kist (domestic) share of total H.J. Heinz earnings (%)	22.5	23.1	22.0

Sources: Based on data and calculations from data in H.J. Heinz Co. 1986 annual report and 1986 10-K report; First Boston Corporation Progress Report FD3158, September 26, 1986.

Star-Kist's domestic operations contributed 22.0 percent (1984), 23.1 percent (1985), and 22.5 percent (1986) to H. J. Heinz's total international earnings, and industry sources report Star-Kist has consistently been one of H. J. Heinz's most profitable subsidiaries (Table 3).

Van Camp's share of operating income to Ralston Purina's for the years 1982-1986, has fluctuated from a low of minus 1.2 percent in 1982 to 3.2 percent in 1985. The negative figure for 1982 was associated with an operating loss of about US$16 million on tuna vessels (Goldman Sachs 1986:2).

Bumble Bee's tuna contributions to Castle and Cooke during 1982-1984 were negative in all years, with a net loss of US$12.3 million in 1982, US$7.0 million in 1983, and US$1.0 million in 1984 (Table 5).

Table 4. Description of tuna processing activities of Van Camp Seafoods, Inc., as part of overall operations of Ralston Purina Co.

	(US$ millions)					
	1986	1985	1984	1983	1982	1981
Total net sales Ralston Purina	5,514.8	5,299.4	4,351.8	4,203.1	4,178.5	4,568.1
Sales of seafood products Van Camp[a]	270.8	253.0	262.7	270.4	290.3	388.3
Share of seafood to to coporate net sales (%)	4.9	4.8	6.0	6.4	6.9	8.5

Estimated operating results[b] (US$ millions)					
Item	1986[c]	1985	1984	1983	1982
Total operating income Ralston Purina	724.0	633.8	544.4	523.9	428.6
Operating income from tuna	20.0	20.0	10.0	15.0	(5.0)[d]
Share of tuna income to total operating income (%)	2.8	3.2	1.8	2.9	(1.2)[e]

Sources: Ralston Purina annual reports, 1983—86, and Goldman Sachs Investment Research Report dated April 30, 1986.
a. Includes some non-tuna products (e.g. canned salmon).
b. Net sales minus operating expenses.
c. Estimated
d. Includes about $16 million operating losses on tuna vessels.
e. Negative contribution towards total operating income.

The operating profits of Pan Pacific Fisheries fluctuated widely during the years 1980-1984, from a high of US$6.8 million in 1980 to a low of minus US$2.5 million in 1984 (Table 6).

The period covered above were years of considerable restructuring in the U.S. tuna processing industry, with canneries on the U.S. mainland being closed, stiff competition resulting from imports of canned tuna from foreign countries such as Thailand, and divestment of ownership in tuna purse seiners. For example, in 1984, Castle and Cooke management recommended establishment of a reserve fund of US$27 million after taxes for anticipated losses in disposing of its Bumble Bee Seafoods division (Castle and Cooke 1984:31). Star-Kist, in 1986, incurred a loss of

Table 5. Description of tuna processing activities of Bumble Bee Seafoods, Inc., under Castle and Cooke, Inc.

	(US$ millions)			
	1985	1984	1983	1982
Total revenues; Castle and Cooke	1,600.6	1,520.1	1,361.5	1,412.8
Revenues from tuna; Bumble Bee[a]	n.a.	213.5	190.2	208.0
Share of tuna to total revenue (%)	n.a.	14.0	14.0	14.7
Net loss tuna; Castle and Cooke	n.a.	1.0	7.0	12.3

Source: Castle and Cooke, Inc. annual reports for 1984 and 1985.
a. A privately held firm since June, 1985.

Table 6. Description of tuna processing activities of Pan Pacific Fisheries, under C.H.B. Foods, Inc.

	(US$ 000's)				
	1984	1983	1982	1981	1980
Total revenues; C.H.B. Foods[a]	291,389	292,627	288,080	291,784	270,274
Total revenues; Pan Pacific Fisheries	88,174	91,506	98,625	97,130	94,971
Total operating profits; C.H.B. Foods	17,915	19,576	19,100	18,802	12,843
Operating profits, Pan Pacific Fisheries	(2,474)	1,505	1,544	4,877	6,781
Pan Pacific Fisheries share of C.H.B. Foods total revenues (%)	30.3	31.3	34.2	33.3	35.1
Pan Pacific Fisheries share of C.H.B. Foods total operating profits (%)	(13.8)	7.7	8.1	25.9	(52.8)

Source: Based on data and calculations from data in C.H.B. Foods, Inc. annual reports for 1982-1984.
a. C.H.B. Foods, Inc. has been a privately held company since 1985, and has been renamed California Home Brands, Inc.

several millions of dollars due to a write down of its Canadian tuna inventory, resulting from the closure of its processing plant at St. Andrews (H. J. Heinz Co. 1986b:48). In 1984, Pan Pacific had US$24.8 million invested in its fishing fleet, but by 1987 had sold its remaining tuna seiners (C.H.B. foods, Inc. 1984b:21). Van Camp, in 1984, noted a US$38 million estimated loss connected with the shut down of its San Diego cannery (Drexel Burnham Lambert 1985:16).

Employment and wage structure

The combined total number of persons employed by the four major U.S. tuna processors in Puerto Rico, American Samoa, and California is approximately 11,255, as shown in Appendix 1. Details of the number of persons employed in American Samoa by Star-Kist and Van Camp are given in Table 7.

Table 7. Number of covered employees in fish canning and processing activities in American Samoa, by selected months, 1985 and 1986

	1985				1986			
	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Star-Kist	2,021	2,135	1,976	2,203	2,333	2,245	2,278	2,585
Samoa Packing (Van Camp)	1,005	1,013	1,088	1,115	1,254	1,363	1,133	1,226
Total	3,026	3,148	3,064	3,318	3,577	3,608	3,411	3,811

Source: U.S. Dept. of Labor 1986 and data from the USDOL office, Washington, D.C.

The minimum wages paid to employees of the three major U.S. processors in Puerto Rico are shown in Table 8. Current wage rates for the Pan Pacific processing plant in California range from US$6.82 per hour for general labor to US$8.34 per hour for a retort (skilled) operator (USDOL 1986:42). However, if benefits are also taken into consideration, the hourly dollar amount is higher.

According to the U.S. Department of Labor (USDOL 1986:D-2), the average straight time hourly earnings for 3,318 workers in American Samoa engaged in tuna processing and canning activities in November 1985 were US$2.94 per hour. At that time 2,481 workers, or 75 percent of the total cannery work force, were paid a Fair Labor Standards Act (FLSA) minimum rate of US$2.82 per hour. Under FLSA, workers in American Samoa are exempt from receiving the minimum wage paid elsewhere in the United States, (that is US$3.35 per hour). Hearings held by USDOL in March and April 1986 resulted in a ruling to raise the minimum wage in American Samoa to US$3.35 from US$2.82 per hour. The government of American Samoa, Star-Kist and Van Camp opposed the ruling. The two canneries together are the largest single employer in the private sector in American Samoa, a territory with a

Table 8. Hourly wage rates paid to cannery employees in Puerto Rico (November 1985)

Wage rate category	Van Camp	Star-Kist	Bumble Bee
Minimum hourly entry level wage (US$)	4.40[a]	3.35	3.67
Number of workers paid minimum wage	519	282	94
Lowest wage rate after 90 day probationary period (US$)	4.40	3.73	3.97

Source: U.S. Dept. of Labor 1986.
a. Although a collective bargaining agreement permits a minimum wage of US$3.35 an hour, all new employees are started at US$4.40.

population of only 35,000. A final ruling to raise the minimum wage was published by the USDOL on June 20, 1986 (Federal Register 1986:22518). However, this issue became moot when the Omnibus Territories Bill of 1986 contained a provision which overturned the ruling to raise the minimum wage in American Samoa. The minimum wage in American Samoa is still US$2.82 per hour. Another round of hearings on this subject is planned for July 1987, according to USDOL's Hawaii office.

It should be noted that the above data on wage rates apply mainly to personnel working for the minimum wage. The Puerto Rico data tabulated in Appendix 1 covers only 895 employees out of an estimated 6,900. According to industry sources, Star-Kist's average Puerto Rico wage is about US$5.00 per hour (excluding fringe benefits), and Van Camp's average wage in Puerto Rico is about US$8.00 per hour (including fringe benefits). Bumble Bee's average Puerto Rico wage is unknown, but it is probably competitive with Star-Kist and Van Camp.

In American Samoa the minimum wages paid by Star-Kist and Van Camp are the highest minimum wages in the territory. Minimum wages in other industries range from a low of US$1.46 per hour (laundry and dry cleaning workers) to a high of US$2.82 per hour for fish cannery and processing workers (USDOL 1986:51).

Processing technology

The processing of frozen or fresh tuna into its final canned product form has not changed for decades. The process is relatively straightforward and involves receiving the frozen or fresh tuna, thawing if necessary, butchering, pre-cooking the fish fillets, cooling and loading onto conveyor belts where "cleaners" separate the flesh into various components (white or light meat used for human consumption and red or dark meat used for pet food).

The stations occupied by the fish cleaners are called lines, and they may have dozens of workers on each side of the conveyor belt. Bones, viscera and the fish heads are converted into fish meal. After the cleaning line, the meat is packed with water or oil in hermetically sealed cans. The cans of tuna are then put through a retort for a second cooking and sterilization, cooled again, and then put through automatic machines for labeling and boxing. An excellent detailed description of the process is given by Patterson and Peckham (1986:19), a report prepared on the subject of canning tuna in developing island areas such as Micronesia. A more general description of the process is given by USITC (1986). While the basic technology is the same whether the tuna are processed in a small or large cannery, the scale of cannery operations varies by orders of magnitude. Patterson and Peckham (1986:58) provide a technical description of a one to five tonne per day operation within a processing area of about 1,800 square meters. On the other hand, the large canneries in Puerto Rico and American Samoa operate with as many as ten lines, and some plants are as large as a city block.

Although the basic canning technology has not changed since the 1930s, there have been technological innovations. The innovations have included better automatic handling of fish, improved quality control, introduction of new can sizes, and shrink packing the cans into new types of shipping containers. The U.S. tuna processors take their research and development efforts seriously. As an example, before it closed its San Diego cannery, Van Camp's research and development facilities covered 22,000 square feet (Ralston Purina Co. 1977:13).

One technological improvement that is much talked discussed, but to date has not been perfected, is an automatic butchering machine. The problem here is that tuna are of different species and come in a variety of sizes, from 1.5 kg. skipjack to a 55 kg. yellowfin tuna. A recent development has been the trial use of a "Danish" line to automatically butcher tuna. This technique is supposed to produce tuna fillets ready to be packed, eliminating the pre-cook and cleaning phases, and thus saving money. The Danish line has not been adopted, however, because of the different sized fish problem, and because the yield of tuna for canning is low, according to industry sources.

Production of tuna "loins". It is often suggested that one way to cut production costs is to have the tuna processed to the loin stage in an area where labor costs are low, and then have the loins transported to another area where the final cooking, canning, labeling and packing is done. Since about 70 percent of the typical processing plant's workforce is employed in getting the tuna to the loin stage (Figure 1), processing the product in such a two stage method should result in savings to the processor.

There are, however, reasons why loining as a separate operating may not be undertaken. In the first place, direct labor costs are a relatively small part of the overall costs of tuna processing and canning, accounting for about 5 to 15 percent (USITC 1986). Therefore, loining operations may result in relatively small cost savings. Furthermore, the cost of

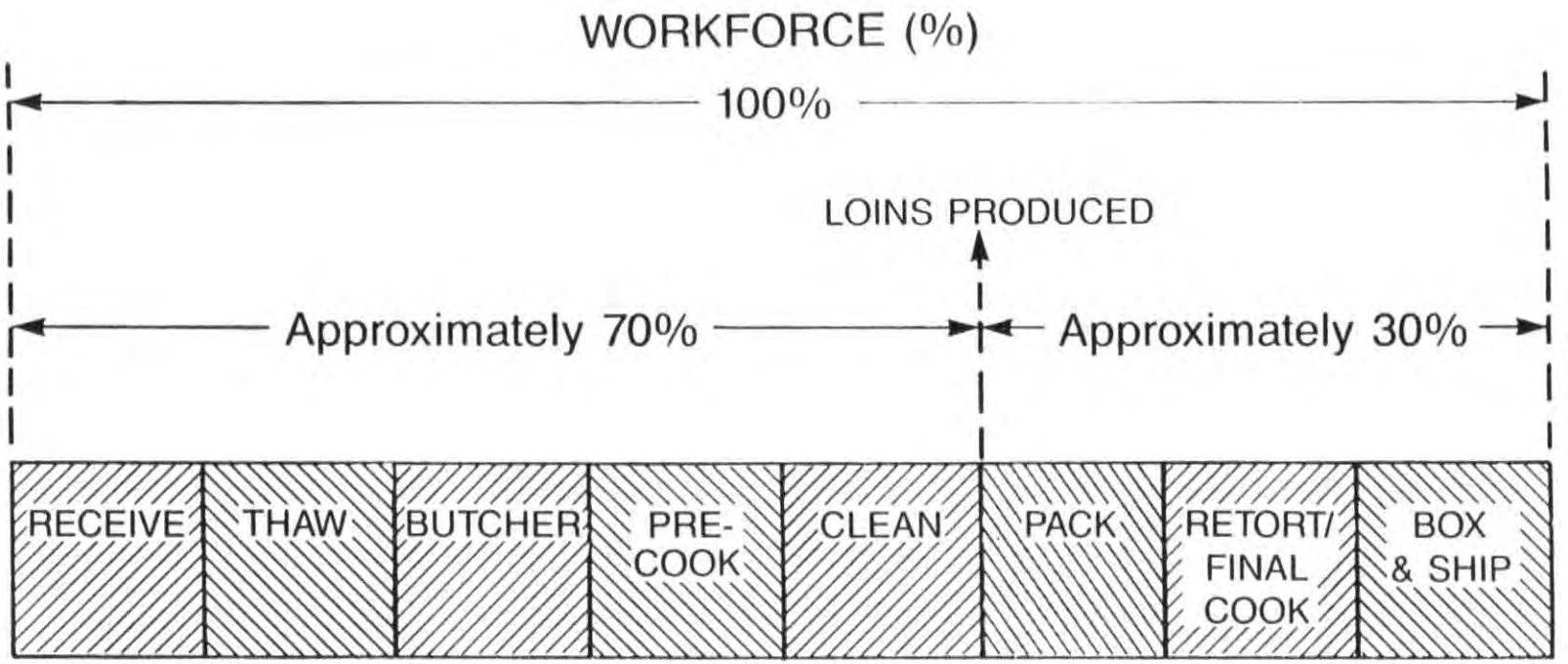

Figure 1. Schematic diagram of a tuna processing and canning plant

transporting tuna loins to the final processing destination must be considered, as tuna loins have a short shelf life. Another important reason, is that there are quality control problems with certain species, especially skipjack. Cooked skipjack tends to oxidize rapidly, and even vacuum packing is not very useful. For raw loins (those that have not even reached the pre-cooker stage), it is difficult to separate the red or "blood" meat from the lighter meat, thus resulting in a lower yield rate per tonne of tuna processed.[9]

Company management policies in developing countries

There seems to be no written public management policy by U.S. tuna processors that bear on their relations with developing countries. The closest statement to such a corporate policy that could be found for any of the four major U.S. processors is a statement in a booklet titled "The Star-Kist Story" (1977). Referring to Star-Kist's efforts to search out new locations for overseas bases, the booklet states "Whenever and wherever appropriate, Star-Kist is prepared to make commitments in any part of the world that will maintain its position of leadership and will aid in local fishery and economic development."

It is difficult to categorize the policies of U.S. processors, but two key attributes they have demonstrates their flexibility and mobility, when necessary to react to changing business conditions.

While this report is focused on the western Pacific tuna industry, where companies such as Star-Kist, Van Camp and Bumble Bee have operated since the early 1970s, and whose activities have been discussed by Kent (1980), Frundt and Domike (1982) and Doulman (1984), it is useful to compare the activities of U.S. tuna processors in Africa, in order to judge how processors have been flexible and mobile in their management policies.

Details given below are taken from a comprehensive review of the development of tuna fisheries in Ghana by Hammond (1986:159).

Van Camp was the first U.S. tuna processor to enter Africa when it carried out a survey of western African waters in 1958, later establishing bases in several locations, including Ghana (Tema). Van Camp later withdrew from all its African operations.

Development of what Hammond calls "industrial" tuna fishing started in 1959, when Star-Kist and the government of Ghana agreed on a 50-50 basis to a survey of the Gulf of Guinea for tuna. The survey showed tuna fishing was feasible and Star-Kist then entered into an agreement with Ghana in 1962 to base foreign tuna vessels in Tema, and transship catches (paying certain transshipment fees). Catches in 1962 were 6,000 tonnes, of which 1,000 were sold in Ghana. Production increased until 41,000 tonnes were produced in 1974 by a fleet of 35 catcher boats. Star-Kist later moved some operations to Liberia, Senagal, and the Congo, after acquiring shares in coldstore companies. Star-Kist still maintains a cold storage and collection station in Senegal.

In 1963, Ghana attempted to enter tuna fishing itself using two purse seiners from the United Kingdom. This effort failed. Later, in 1973, Ghana again entered tuna fishing through a three way joint venture called Ghana Tuna Fishing Development Co. Ltd., involving Mankoadze Fisheries, Star-Kist and Nichiro of Japan. The company acquired several tuna fishing vessels. The acquisitions made possible by Star-Kist providing a guaranteed market for catches. However, these were serious problems involved in acquiring the vessels.

As a further development in 1976, Star-Kist took up 50 percent equity in the Pioneer Food Cannery, Ltd. in Ghana. Star-Kist provided US$600,000 to the company using Overseas Private Investment Corporation (OPIC) cover. It also provided technical assistance for the layout and operation of the cannery, which is now processing 20 tonnes per day for export to Europe.

French interests then tried to interest Mankoadze in establishing a tuna cannery in Abidjan, Ivory Coast, but this was declined because the company was collaborating in tuna fishing with Star-Kist in Ghana. After what Hammond characterizes as "sad experiences", the government of Ghana via its Investment Policy Decree in 1975 and its Development Plan of 1977-1981, regulated tuna fishing between foreign and Ghanian joint venture partners. In 1979 Ghana ruled that by 1983 all foreign tuna vessels should be phased out or be Ghanian owned by joint venture where possible. Within one year, tuna fishing stopped, but by 1986 33 tuna fishing vessels were back in operation. Ghana's annual production is now about 44,000 tonnes. However, in 1984, due to a disruption of supplies and services in Ghana, Star-Kist opened another transshipment operation in Abidjan, Ivory Coast.

Ghana has become a major source of supply for Star-Kist, the only U.S. canner remaining in Africa. Hammond concludes that Ghana's tuna fisheries development has been intimately linked with foreign and national companies and financial institutions, in joint ventures, with the local partner sometimes being at a disadvantage because of lack of technical expertise. He believes the establishment of joint ventures with large expatriate companies is not in Ghana's best interests, and proposes joint ventures with small expatriate companies. Hammond maintains that large expatriate companies are solely motivated by the need to make the highest possible profits, but overlooks the fact that if companies such as Star-Kist and Van Camp had not entered Ghanian fisheries, the present tuna fishery might not have taken hold. He does admit, however, that the changeover to local companies operating 33 vessels was assisted by outside financing, in part through the involvement of Star-Kist.

The point to be made here is that, whether or not one agrees with Hammond's assessment of the role of large tuna processors, Star-Kist's actions in Ghana and Africa exhibited the characteristics of flexibility and mobility that are required by a tuna processor if they are to stay in business successfully. In other words, as the Star-Kist promotional booklet stated, the company was trying to maintain its leadership, and at the same time was contributing to local economic development.

Developing Pacific island economies can expect future business dealings with U.S. processors to be characterized by a similar need for

this flexibility and mobility, and should take adequate measures to protect their own interests, should they decide to become economically involved.

GOVERNMENT INTERACTION

Relationships between U.S. processors and foreign governments

Relationships between the processors and foreign governments can be broadly categorized into two different groups; direct and indirect. In the direct relationship, the tuna processor will negotiate directly with a foreign government for the right to participate in certain activities, such as putting in a facility or participating in a joint venture with the government. In an indirect relationship, the processor often interacts with the foreign government through a third party, such as the U.S. government, or perhaps a tuna industry related organization in which the processor participates or has an equity in some of the members of the organization.

Direct relationships. Star-Kist operated a pole-and-line fishing fleet in Papua New Guinea from 1972 to December 1982. In 1977 Star-Kist formally proposed the construction of a cannery in the country. The proposal involved the government of Papua New Guinea taking up equity in the venture, along with the International Finance Corporation. Following several years of indecision, the venture was abandoned in 1982.

According to industry sources, the Papua New Guinea venture was abandoned because the U.S. tuna industry was economically depressed in the early 1980s and it simply was not economically feasible to start another canning operation, even a small one. Other sources have indicated there were differences between the central and regional Papua New Guinea governments about the cannery's location and that this jeopardized the venture. However, Papua New Guinea government sources provide a different picture as to events that took place. Whatever the actual reasons, the processors were not flexible enough to put in a facility.

Industry sources report that in 1974 Bumble Bee was considering a tuna loining operation in Western Samoa, with the final processing and canning to take place in American Samoa, 70 kilometers away. This was when Bumble Bee was considering building a cannery in American Samoa. Bumble Bee did not build in American Samoa, the reason given was that there was not enough water to support three large processing facilities. Star-Kist is also reported to have considered a loining operation in Western Samoa.

During 1986, two U.S. tuna processors visited Fiji to investigate becoming involved in tuna processing.[10] The government of Fiji announced it is reorganizing the Pacific Fishing Company (PAFCO) in Levuka following the withdrawal of C. Itoh Corporation of Japan, a partner in the joint venture operating PAFCO since 1976 (Fiji Times 1987). The PAFCO cannery's present output is about 12,000 tonnes per year. Whether or not the U.S. processors were discussing a joint venture or completely taking over the PAFCO cannery is unknown.

The U.S. Agency for International Development (AID) regional office in Fiji initiated and hosted a Regional Privatization Conference in Fiji (February 2-6, 1987), co-sponsored by the U.S. Department of Interior. Interest in the conference is reported to have been keen. It is possible

that the Fiji government is considering completely privatizing its PAFCO cannery by selling its 96 percent shareholding to another investor.

At the present time no major U.S. tuna processor is involved in a joint venture with a Pacific island government, although that possibility exists in future.

Another type of direct relationship is the transfer of technology from a U.S. processor to a foreign government with an interest in tuna fishing or related activities. In October 1986 a tuna access treaty was successfully negotiated between the U.S. and 16 Pacific island nations.[11] Among other things, the treaty calls for the U.S. tuna industry to provide an annual contribution of US$250,000 in technical assistance to the South Pacific Forum (SPF) member countries. It is likely that U.S. tuna processors will facilitate technology transfer through the U.S. Tuna Foundation (USTF).

Indirect relationships. There are any number of ways processors can have indirect relationships with foreign governments. One of the most visible is their participation in international treaty negotiations as advisors or observers (e.g., Pacific tuna access treaty or the Law of the Sea Convention).

Another indirect relationship has been the participation of U.S. purse seiner owners in negotiations with Pacific island governments by the American Tunaboat Association (ATA). Between 1980 and 1984, the ATA had agreements with ten Pacific island countries or dependent territories, none of which were renewed after they lapsed.

Tuna processors are also affected by foreign government policy related to trade barriers. For example, the tariff on canned tuna established by the European Economic Community (EEC) of 24 percent, and by Japan of 15 percent, effectively shuts out the export of tuna canned by U.S. processors to EEC member countries and Japan.

The state of these relationships at any given time depends on many factors that are dynamic. In the early 1970s and 1980s, Star-Kist's relationship with the Papua New Guinea government was not satisfactory and cannery negotiations failed. In more recent years, there has been an adversarial relationship between SPF members and the United States over the seizure of several U.S. purse seiners. The tuna treaty should remove this adversarial relationship for the duration of the treaty.

Representatives of U.S. processors, as well as other tuna industry representatives interviewed for this report, all expressed the desire that relationships between the U.S. tuna industry and the SPF members can now progress in a positive manner. Furthermore, almost all of the processing company officials interviewed indicated that their companies are interested in actively considering proposals to engage in activities related to tuna processing in the Pacific islands region. The USTF in particular says it is anxious to build goodwill with island nations through the transfer of technology.

Tax incentives and repatriation of profits

Beside seeking areas of low corporate income taxes, low labor costs, exemption from certain maritime laws (e.g. Nicholson Act and Jones Act), processors also seek tax concessions from local governments in order to lower the cost of doing business. Puerto Rico and American Samoa are receptive to granting tax concessions to induce processors to maintain and expand their plants in order to provide employment opportunities and other economic benefits. Both territories have granted generous fiscal incentives to U.S. processors.

Federal taxes. Pursuant to section 236 of the Internal Revenue Act (26 United States Code), a domestic corporation is allowed a tax credit equal to the taxable income from the active conduct of a trade or business within a possession of the United States. Income derived from operations in Puerto Rico and American Samoa is thus effectively exempted from U.S. corporate income tax (USITC 1986).

Puerto Rico. In Puerto Rico, fiscal incentives cover relief from corporate income taxes, property taxes, and municipal taxes (sales tax). Puerto Rico's Industrial Incentive Act of 1978 allows tuna processors and commercial fishing operations that supply Puerto Rican canneries tax exemptions of up to 90 percent of industrial development income for 10 to 25 years, depending on industry location (USITC 1986). A list of tax exemptions presently enjoyed by tuna processors in Puerto Rico is given in Table 9. These exemptions are subject to change because a new Industrial Incentives Act was passed in January 1987 to take effect upon the Puerto Rican governor's approval. The tax rate imposed by Puerto Rico in 1985 was 20 percent of applicable corporate income (USITC 1986).

Under the 1978 law all tuna processors, except Neptune Packing, have a 90 percent exemption on corporate income taxes with a maximum rate of 45 percent on income that is taxable. The present exemptions for the five processors are effective until the years 1993 to 2000, depending on company. Neptune Packing's present tax exemption is 85.5 percent. Bumble Bee, Star-Kist and Van Camp are in a zone providing maximum tax benefits, and their income tax exemptions will be reduced from 90 percent to 65 percent by the year 1995 (1993 for Star-Kist). Neptune Packing's benefit will be reduced to 35 percent by 1994, but Caribe Tuna's income tax exemption will be reduced to zero by 1993. Under the 1987 Industrial Incentive Act, however, the processors will have an opportunity to renegotiate their present level of tax exemptions.

Puerto Rico also has what is termed a toll gate tax (dividend withholding tax), which is a tax levied on dividends declared by Puerto Rico based companies that normally would be distributed to the parent corporation or outside Puerto Rico. The regular toll gate tax is 10 percent, but it is estimated the average effective rate paid by most tuna processors is in the range of 4-6 percent. A lower toll gate tax is provided if processors agree to keep some of their profits in Puerto Rico in what are termed eligible activities.

Table 9. Percentage of tax concessions granted by Puerto Rico to U.S. tuna processors for the years 1987-2000, under the Puerto Rico Industrial Incentive Act of 1978

Major processors	Tax concession category	Period (Percent)			
		1987	1987-June 1990	1990-1995	1995-2000
Bumble Bee	Income	90	90	75	65
	Property	90	n.a.	n.a.	n.a.
	Municipal	100	n.a.	n.a.	n.a.
			1987-April 1988	1988-1993	1993-1998
Star-Kist	Income	90	90	75	65
	Property	90	n.a.	n.a.	n.a.
	Municipal	90	n.a.	n.a.	n.a.
			1987-Nov. 1990	1990-1995	1995-2000
Van Camp (National Packing)	Income	90	90	75	65
	Property	90	n.a.	n.a.	n.a.
	Municipal	100	n.a.	n.a.	n.a.
Secondary processors					
		1987	1987-July 1988	1988-1993	1993
Caribe Tuna (Mitsubishi)	Income	90	90	75	0
	Property	90	n.a.	n.a.	n.a.
	Municipal	100	n.a.	n.a.	n.a.
			1987-May 1989	1989-1994	1994-1999
Neptune Packing (Ocean Packing Mitsui)	Income	85.5	85.5	50	35
	Property	100	n.a.	n.a.	n.a.
	Municipal	100	n.a.	n.a.	n.a.

Source: Puerto Rico Economic Development Administration.

American Samoa. American Samoa grants exemptions from the payment of certain categories of taxes for periods up to ten years for the establishment or expansion of qualifying industrial or business enterprises under the Industrial Incentives Act.[12] The exemptions may be extended to encourage new businesses or significant expansion of an existing businesses. Other benefits include the non-taxation of dividends paid by wholly owned subsidiaries of U.S. parent companies operating in American Samoa, and the carrying forward of business losses for tax purposes for up

to seven years. American Samoa has no taxes on sales or gross receipts, property, exports or value-added items. American Samoa also conveys 30-60 day free port storage charges for transshipment freight through Pago Pago (where the two tuna processors are located).

Both Samoa Packing Company (Van Camp/Ralston Purina) and Star-Kist Samoa, Inc. have agreements with the government of American Samoa covering a wide variety of tax benefits.[13] The agreements also call for the two firms to make investments to increase processing capacity and employment, improve the environmental conditions in Pago Pago harbor, and train American Samoans for managerial positions in the processing plants and as crewmen on purse seiners. Both agreements cover the same general types of benefits, but differ in details on what actions must be taken by the processors to continue enjoying the tax benefits.

The agreement with Samoa Packing was originally for the period of October 1983-September 1993, but it was amended in early 1985 to allow the tax benefit period to be extended equivalent to the amount of time the plant was closed during 1984 and 1985. The agreement with Star-Kist is for the period May 1983-April 1993.

The exact percentage of benefits from corporate income tax on net income earned from processing of tuna is unknown because the benefit income tax is linked to the amount of tuna processed in excess of a certain annual base tonnage--the base tonnage being in the 27,000 tonne to 39,000 tonne range. Both companies are exempt from paying dividend withholding taxes paid pursuant to the American Samoan tax code. Corporate income taxes on shareholders are exempt with respect to distributions from earnings and profits accumulated during tax exemption years. The agreements call for each company to expand their processing plant's capacities during a specified time period, with each company having to spend several millions of dollars each in capital improvements. Increases in employment levels as a result of processing capacity expansions are also covered in the agreements.

Exemptions from income taxes on activities related to the delivery of tuna to the two processing plants are provided for tuna longline and purse seine fishing vessels, and related vessels owned by corporations incorporated in American Samoa. Each corporation organized under American Samoa laws that owns or operates purse seiners is also exempt from all corporate income taxes on its income from tuna fishing if at least 20 percent of its annual tuna catch is delivered to American Samoa for processing. Tax rates imposed by American Samoa against corporate income are the same as the U.S. government's tax rates on corporate income (USITC 1986).

Relations between U.S. processors and the U.S. government

There are numerous major pieces of U.S. legislation that either directly or indirectly affect relations between the processors and the U.S. federal government. In addition, there have been investigations into the U.S. tuna industry conducted by the government, rulings on foreign trade

preferences, and financial assistance provided by government or by quasi-governmental agencies to the industry.

Marine Mammal Protection Act (1972) (MMPA). This law, among other considerations, regulates the manner in which U.S. purse seiners are allowed to fish for tuna associated with porpoises, as in the eastern Pacific. It also requires seiners to have U.S. observers on board during fishing operations. This requirement has caused serious differences between the processors and vessel owners on the one hand and the U.S. government on the other. It has resulted in extended legal battles between the two groups, with the tuna industry bearing high costs of litigation in court and in hearings. In protest of federal regulations concerning quotas on porpoises allowed to be taken under the MMPA, the entire eastern tropical Pacific tuna purse seine fleet tied up from February 1 to June 1, 1977. According to an industry official, this resulted in the loss of millions of dollars of income to the vessels, as well as causing the cost of frozen tuna to increase for processors.

On October 14, 1986, the government ordered U.S. purse seiners fishing in the eastern tropical Pacific to cease fishing on October 21 until the end of 1986, because the projected annual porpoise kill would have exceeded the quota of 20,500 animals. This was the first time that the fishery had been closed for this reason (USITC 1986). It has been estimated that compliance with federal regulations under the MMPA cost the industry tens of millions of dollars.[14]

Nicholson Act (1793). The Nicholson Act has assisted tuna processors in American Samoa because it allows foreign flag fishing vessels to unload their catches directly at the canneries, a benefit not enjoyed by canneries in either Puerto Rico or California, thus saving on transshipping costs.

Magnuson Fishery Conservation and Management Act (1976). The Magnuson Act established U.S. sovereignty over fisheries in its exclusive economic zone (EEZ) from 3 to 200 miles offshore, but specifically excluded highly migratory species from its jurisdiction. The Magnuson Act defines highly migratory species as tuna. The U.S. position on tuna is that highly migratory species of fish should be managed through international cooperation by coastal states and distant-water fishing nations. Tsamenyi (1986:32) argues that because only about 1 percent of the total tuna catch by U.S. fishermen comes from the U.S. EEZ, the aim of the Magnuson Act is to provide the U.S. fishing fleet open access to large tuna stocks occurring within the EEZs of other countries. In March 1982, Papua New Guinea seized the U.S. tuna seiner Danica and in June 1984, the Solomons seized the Jeannette Diana for what they considered was illegal fishing within their EEZs. Citing the Magnuson Act in both cases, the U.S. invoked an embargo prohibiting tuna and tuna products from both countries from entering the U.S. The embargo against Papua New Guinea was lifted in April 1982, and against the Solomons in April 1985 following negotiations leading to a settlement of claims in both cases.

Fishermen's Protective Act (1967). This act allows the United States to reimburse fishermen for fines or payments made to foreign governments as a result of a seizure of a U.S. vessel on the basis of claims not recognized by the United States.

Saltonstall-Kennedy Act (1954). This act allows the U.S. government to make grants to the U.S. fishing industry for research and development projects. In the mid and late 1970s, Saltonstall-Kennedy Act grants to the Pacific Tuna Development Foundation--now known as the Pacific Fisheries Development Foundation--provided funds for the charter of U.S. purse seiners to conduct exploratory fishing operations in the western Pacific.

Tuna Conventions Act (1950). This act sets forth participation by the United States in the activities of the Inter-American Tropical Tuna Commission (IATTC), an agency which conducts investigations on yellowfin and skipjack tuna in the eastern tropical Pacific Ocean and makes recommendations designed to keep populations of these fishes at levels of abundance to permit the maximum sustained catch. In recent years, however, the quotas recommended by the IATTC have not been followed by member countries, and have served primarily as a benchmark against which to measure the actual catch in the commission's regulatory area (USITC 1986).

Compact of Free Association Act (1985). This act, which established relations between the United States and the Republic of the Marshall Islands, Federated States of Micronesia, and perhaps at a later date with the Republic of Palau, has a provision that could affect U.S. tuna processors in the future. Canned tuna from these three countries would have duty free entry to the United States for an amount up to an annual quota of 10 percent of U.S. canned tuna consumption for the previous calendar year. This applies only to tuna packed in water. Canned tuna in oil would be dutiable at its present tariff of 35 percent (USDOL 1986).

Industry investigations

In 1984 and 1986 the U.S. government conducted two extensive investigations into conditions in the U.S. tuna industry. One, known as a "201" investigation, was undertaken after the U.S. International Trade Commission (USITC) received a petition for import relief on behalf of the USTF, C. H. B. Foods, Inc., the ATA, and three fishermen's unions under Section 201 of the Trade Act of 1974.

A determination was made that tuna canned in water and in oil were not being imported into the United States in such increased quantities as to be a substantial cause of injury to the U.S. domestic industry (USITC 1984).

The other investigation, known as a "332" investigation, was a comprehensive study of conditions in the U.S. tuna industry under Section 332 of the Tariff Act of 1930 (USITC 1986). The 332 investigation was requested by the U.S. Trade Representative, but the results did not include any policy determinations or recommendations. Its primary purpose was to

update the data collected by the USITC during the 201 investigation in 1984.

According to industry sources, the 201 investigation caused some disharmony between U.S. processors; Bumble Bee and Van Camp withdrew from the USTF in 1984 because they were not in favor of the petition. However, in 1986 they later rejoined USTF.

Both investigations caused U.S. tuna processors to supply the USITC with a large amount of data, much considered proprietary, in response to government questionnaires.

Some U.S. government rulings have helped U.S. processors, as did a 1983 ruling by the U.S. International Trade Administration (ITA), which concluded that manufacturers, producers or exporters in the Philippines of canned tuna had obtained certain benefits from the Philippines government which constituted bounties or grants within the meaning of the countervailing duty law. As a result, the ITA ordered a countervailing duty of an additional 0.72 percent be added to the duty normally charged on canned tuna imported from the Philippines (Federal Register 1983:50133).

Lastly, the National Marine Fisheries Service (NMFS) can guarantee loans to owners of U.S. purse seiners. The quasi-governmental Production Credit Association system, a part of the Farm Credit Administration (a federal agency) is an important source of financial assistance for tuna vessel owners (USITC 1986).

MARKET POSITION AND SHARE

Location of sales

The principal market for canned tuna from U.S. processors is the domestic U.S. market, as the export of canned tuna is negligible compared to total U.S. production (USITC 1986). Data are not collected separately on U.S. exports of canned tuna because of this. According to data tabulated by the NMFS, from 1979-1985 canned tuna was the most commonly consumed fish product in the United States. Sales and consumption of canned tuna occurs throughout the country, but tends to be concentrated regionally, especially in the metropolitan areas along the U.S. coasts—the northeast, southern California, and the Pacific northwest. However, on the basis of frequency of consumption, more canned tuna is eaten in the central and mid-Atlantic areas. It is also a more important seafood item in these two areas. There are also geographical preferences for different varieties of canned tuna, with the east coast market preferring whitemeat (albacore) tuna, and the west coast preferring lightmeat (yellowfin and skipjack) tuna (USITC 1986).

It is believed that the major U.S. processors sell their brands at all locations throughout the United States. However, according to industry sources, one of the secondary processors, Mitsubishi Foods (which markets its canned tuna under the 3-Diamonds label) sells its product primarily on the east coast, with little being sold beyond the U.S. midwest.

Relative market shares of various processors

Table 10 shows the retail market shares of the different processors.

Table 10. U.S. tuna processors market shares, September 1986

Brand	Processor	Market Share (%)
Star-Kist	Star-Kist	36.0
Chicken of the Sea	Van Camp	20.0
Bumble Bee	Bumble Bee	15.5
3-Diamonds	Mitsubishi	3.7
Geisha	Mitsui	2.8
Empress	Mitsui	1.4
Private labels		17.0
Other		3.6

Source: SAMI 1986.

Table 10 does not indicate the relative market position of Pan Pacific Fisheries, since its products are sold by California Home Brands under a variety of private labels. Industry sources indicate, however, that its share makes up a large proportion of private label sales, and that it is fourth in the U.S. market.

Details of the share of the private label market by the other processors is fragmentary. One report indicates that if its regional brands (private labels) are included, Star-Kist has about 39 percent of the U.S. canned tuna market. The growth of private labels volume in 1986 was about 7 percent--more than double the industry's overall rate of growth of 3 percent (Drexel Burnham Lambert 1986:8).

Beside retail sales of canned tuna, institutional sales (restaurants, hospitals, etc.) make up a significant amount of total canned tuna sales. From 1979-1985, shipments of institutional sales was between 10 and 12 percent, compared to shipments for retail sales of between 88 and 90 percent of total shipments (USITC 1986).

Imported canned tuna has captured a large share of the U.S. market. During the period 1979-1985, imports of canned tuna increased 298 percent in quantity and 221 percent in value. Imports rose from 54 million pounds (US$65 million) in 1979 to 214 million pounds (US$209 million) in 1985. During the same period, the share of private label sales by imported canned tuna went from 2 percent in 1979 to 20 percent in 1985, and from 43 percent in 1979 to 62 percent in 1985 for institutional sales (USITC 1986).

Product price history

The wholesale price history of canned tuna sold in the United States from 1975-1985 is given in Table 11 (using the cost of a standard case as the measure). Trends in prices for domestically produced tuna, both whitemeat and lightmeat, as well as for imports, are generally the same. Prices rose steadily from 1975 to 1980 and 1981, fell significantly in 1982-83, and generally increased in 1984-85 as market conditions improved following price cuts by domestic producers and increased amounts of low priced imports.

Domestic whitemeat tuna was US$25.81 a case in 1975, reached a peak of US$47.44 in 1981, declining to US$39.90 in 1985. Domestic lightmeat tuna was US$23.61 per case in 1975, US$35.58 in 1980, and US$26.00 in 1985. Canned imports sold for US$17.34 per case in 1975, reached a high of US$30.38 in 1981, and by 1985 were selling for US$19.06.

The total wholesale value of all canned tuna sold in the United States also varied widely during 1975-1985. It was US$699 million in 1975, rising to US$1,337 million in 1978, and then generally fluctuating downwards reaching a level of US$1,030 million in 1985 (Herrick and Koplin 1986:Table 4).

Chunk lightmeat tuna represents the largest share of the canned tuna market, but when the retail price of lightmeat tuna reached about US$1 per can in 1980, consumer resistance occurred, contributing to the price drop. Falling prices have also been influenced by the increased share of the U.S. tuna market being taken by imports, which have consistently been priced lower than the domestic product. Furthermore, the decline in the value of total tuna sales between 1981 and 1985 has generally followed falling world frozen tuna prices (USITC 1986).

Table 11. Wholesale price (U.S. dollars) of U.S. domestic and imported canned tuna, 1975-1985

	Domestic production price per standard case[a]		Canned imports price per standard case[a]
	whitemeat	lightmeat	
1975	25.81	23.61	17.34
1976	33.72	26.24	22.35
1977	36.70	30.91	25.15
1978	39.39	34.13	24.04
1979	39.79	33.49	23.63
1980	43.31	35.58	29.84
1981	47.44	34.14	30.38
1982	42.92	30.33	25.24
1983	36.19	26.63	21.89
1984	36.51	25.17	20.09
1985	39.90	26.00	19.06

Source: Calculated from statistics given in Table 4, Herrick and Koplin 1986.
a. A standard case contains 48 6.5 ounce cans of tuna.

Use of brokers

At the present time the four major processors use brokers to sell their canned tuna. Van Camp, however, has not always used brokers for distributing products. Ralston Purina's annual reports for 1983 to 1985 indicated that its canned tuna was being marketed by its own sales offices. This arrangement apparently proved to be unsatisfactory and the company switched back to distributing through brokers.

There are reportedly more than 200 brokers selling U.S. canned tuna. They are organized on a regional basis and each broker usually sells only one brand of tuna. This is required by processors. Current broker fees are 2-3 percent of either the number of cases sold or as percentage of sales. Imported canned tuna is generally marketed by the importing firm, which may also act as a broker for some domestically produced canned tuna. Institutional food brokers also distribute imported canned tuna, since imports are concentrated in this sector (USITC 1986).

Transportation arrangements and storage costs

The main cost of shipping canned tuna from the processing plants to market areas in the United States involve two types of transportation. U.S. processors outside the continental U.S. utilize both ocean shipping to a coastal port of entry and ground transportation from the port of entry to the market area. Pan Pacific because of its location in California needs only ground transportation.

Discussions with industry officials provide sample information to develop figures related to shipping costs. One company's cost of shipping a 40 foot container containing 1,764 standard cases of canned tuna from Puerto Rico to the U.S. east coast was US$0.90 per case, or US$1,588 per container. A standard case has 48 6.5 ounce cans of tuna, which results in a shipping cost of about US$0.02 per can. The ocean transportation costs from American Samoa to the west coast could be much less. For example, if 40 containers were shipped as one lot, the cost per container is about US$1,160, or US$0.66 per standard case. The rates from American Samoa to the U.S. west coast are lower than the rates from Puerto Rico to the east coast, even though the distance from American Samoa to the U.S. west coast is about 2 to 3 times greater. The reason for the difference may be related to the shipping line used or to the fact that the rate from American Samoa covered 40 containers per bill of landing while the rate from Puerto Rico was for a single container. The rates include costs of unloading at the U.S. port of entry which also may be higher on the U.S. east coast.

After unloading from the cargo vessels, the canned tuna is usually trucked to regional warehouses which are leased around the country. Current storage costs range from about US$0.50 to US$0.60 per hundredweight per month—less than 1 percent of present average wholesale case prices for canned tuna (USITC 1986). Ground transportation rates from the port of entry to final destination depend on the size of the load and destination. One tuna industry representative said the cost of trucking a 40 foot container with 1,764 standard cases from the east coast to Chicago was about US$0.55 per case. This is about US$970 per 40 foot container, or about US$.01 per can. Total transportation costs for domestic processors are relatively low, about 1 to 3 percent of the wholesale case price, according to the USITC (1986), but the example cited above works out to be higher than 3 percent at present wholesale case prices. Trucking costs from California to destinations around the U.S. are comparable to those from the east coast. Thus the total cost of shipping a container of canned tuna from Puerto Rico to Chicago including ocean and ground transport and storage would be about US$1.45 per standard case (US$0.03 per can roughly).

Profitability of tuna processors

Aggregate data on the net income or losses of U.S. tuna processors (including Japanese owned processors) for fiscal years 1979-1985 is given in Table 12. These data are for operations for the production of tuna for human consumption only. Net sales increased strongly from 1979 to 1981, from US$961 million in 1979 to US$1.2 billion in 1981, a 27 percent increase. Sales then began to decline, and by 1985 they were down to US$1.0 billion—a drop of 15 percent.

As tuna sales began to decline in 1982, the processors reported net income losses of US$61.7 million (-5.5 percent) in 1982, US$50.4 million (-4.7 percent) in 1983, US$4.6 million (-0.4 percent) in 1984, returning to profitability in 1985 with net income of US$57.9 million (5.6 percent). However, even though the processors in the aggregate showed losses in net income only for the years 1982-1984, in every year except 1980 at least

Table 12. Net income or loss of U.S. tuna processors on producing canned tuna for human consumption only, fiscal years 1979-1985

	Net sales (000s) US$	Net income[a] (000s) US$	Net income[a] (Percent)	No. of firms
1979	960,687	24,395	2.5	5
1980	1,037,591	53,933	5.2	5
1981	1,220,005	18,402	1.5	5
1982	1,111,621	(61,668)	(5.5)	6
1983	1,073,153	(50,393)	(4.7)	6
1984	1,056,654	(4,583)	(0.4)	6
1985	1,042,946	57,932	5.6	6

Source: USITC 1986.
a. Before income taxes.

one processor reported operating losses. The worst year was 1982, when four processors reported operating losses, but in every other year between 1979-84, either one or two processors reported operating losses (USITC 1986).

It would be a mistake, however, to attribute the net losses in income from 1982-1984 solely to declines in net sales, because gross income was positive in all years from 1979-1985. During the period 1981-1984 several firms wrote off large costs of closing their California plants which reflected as net losses between 1982 and 1984.

In 1985, the U.S. canned tuna industry enjoyed a marked increase in profitability with a positive net income of US$57.9 million, even though net sales were down from 1984. This improvement in profitability was due in part to a decrease in the costs of production and divestments in fishing vessels. Preliminary data submitted by processors for 1986 show a continuation of the trend towards profitability (USITC 1986).

Financial data submitted to the USITC (1986) by the processors for the years 1979-1985 covering all aspects of their operations involving any kind of tuna processing (canning for human consumption, pet food, and fish meal) in general show the same results as shown in Table 12, although the numbers differ in magnitude. The main difference is that losses in net income occur only in 1982 (US$174.3 million) and 1983 (US$1.5 million). A further difference is that at least one company showed an operating loss in every year from 1979-1985, and in 1982, the losses were at their highest, five out of six companies showed operating losses.

Data relating to the profitability of operations concerning the production of tuna-based pet foods was available to the USITC for 1984 and 1985 with preliminary data for 1986. Net sales of tuna-based pet food were US$119.5 million in 1984, and US$112.1 million for 1985. These sales, however, produced net income before income taxes of US$7.2 million (6.1 percent) for 1984 and US$5.9 million (5.3 percent) for 1985, which were as good or better than the percentages of net income produced by either

overall company operations or operations producing tuna canned for human consumption.

The point to be made here is that companies in Pacific island areas contemplating going into tuna processing may not find the recent profitability performances of U.S. tuna processors an adequate guide for decision making. Some U.S. processors were operating in areas of high labor costs, and incurred losses when they closed their plants and when they divested themselves in ownership or equities in vessels.

INDUSTRY RESTRUCTURING

Events since the mid-1970s, and especially since the early 1980s on the international and national scene for U.S. tuna processors, have combined to bring about fundamental changes in the world tuna industry. These changes included 1) a rapid buildup of the U.S. purse seine fleet to a peak of about 140 vessels in 1975, followed by a rapid decline in the 1980s, 2) a worldwide recession starting in 1981, 3) an increase in foreign tuna purse seine fleets that increased world tuna supply and reduced prices, 4) changes in the location of U.S. fleet operations, and 5) the emergence of large-scale tuna canning in foreign countries, notably Thailand. Foreign imports of canned tuna to the United States have now captured almost 35 percent of the U.S. market for canned tuna (Peckham 1986). Faced with relatively high domestic labor costs and falling domestic production, the U.S. processors closed all their mainland canneries except one, and moved offshore.

External factors

The recession of 1981 and its associated rise in interest rates began to cause financial difficulties for the U.S. purse seiner fleet. By 1986 the number of active U.S. purse seiners had declined to 72, down 51 percent from the fleet's peak in 1975 (USDOC 1986c:2). At the same time, foreign tuna purse seine fleets were undergoing expansion. In 1980 there were 14 Japanese purse seiners fishing in the western Pacific, but by 1985 had increased to 33 (Doulman, 1986a). This was made possible by the reduction of tonnage in the Japanese longline tuna fleet, with a transfer of about 20 percent of the withdrawn tonnage being earmarked for purse seiners. There were also 53 other foreign seiners fishing the western Pacific in 1985, in addition to the U.S. fleet (Doulman 1986a:8).

European fleets of purse seiners began fishing in the Indian Ocean, and the Mexican government began a construction program of modern tuna purse seiners. In 1987 Mexico may have the largest national fleet of purse seiners (Hudgins 1986b:1). According to industry sources, Korea and Taiwan are building or planning to build another 10-15 seiners.

Expanding purse seine fleets led to more frozen tuna available on the international market, which depressed prices for raw frozen tuna. Skipjack tuna, which was about US$1,063 per short ton in 1980 was selling for US$640 per short ton in 1985 and yellowfin tuna went from US$1,180 in 1980 to US$860 in 1985 (USITC 1986). As a result, U.S. tuna processors started to change their tuna procurement policies and began divesting themselves of vessels in which they had a financial interest. As a result, many seiners today are fishing on an "open ticket," have no guaranteed market for their fish and must negotiate prices with the processors on a per trip basis, often when they return to port.

The U.S. fleet also dramatically changed its fishing areas and by 1985 had some 60 seiners fishing in the western Pacific, in part brought on by the environmental conditions of El Niño of 1982-83 which caused a decrease in fish availability in the eastern Pacific. Today, however, much of the fleet has returned to the eastern Pacific where fishing has greatly

improved and only about 35 seiners are fishing in the western Pacific. The increased world-wide production of frozen tuna has led to a truly international market, and processors will buy the product at the cheapest possible price wherever they can get it, sometimes to the financial disadvantage of U.S. vessel owners.

According to aggregate profit and loss data reported by the USITC (1986), the average U.S. tuna purse seiner showed a net loss before taxes in all years from 1979-1985.

Changes in the dietary habits of the U.S. consumer have also played an important role in changing market conditions. Canned tuna packed in water (which consumers prefer for its lower calorie content) has captured the largest U.S. market share going from 45 percent in 1979 to 72 percent in 1985 (USITC 1986). The duty on canned tuna in water is less than half of that on canned tuna in oil, which may have stimulated the large increases in tuna canning in foreign countries, especially Thailand. From 1979-1985 imports from Thailand accounted for 74 percent of the increase in U.S. imports of canned tuna. Low cannery labor costs of about US$3 per day allow Thailand exporters to consistently undersell U.S. processors in the U.S. market (Table 11).

The lack of access arrangements between the ATA and the Pacific island countries since 1984 caused the fleet some problems, because without agreements with the better producing areas, such as the Federated States of Micronesia, Kiribati and Papua New Guinea, seiners had their mobility restricted. However, numerous seiners were able to operate in the EEZ of Papua New Guinea in 1982, 1983, and 1984 because the Papua New Guinea government licensed them using the Papua New Guinea-Japanese licensing arrangement.

The seizure of the Danica and the Jeannette Diana led to negotiations and the conclusion of a tuna access agreement between the United States and 16 Pacific island nations. Under the terms of the treaty, U.S. seiners will enjoy access to the fishing zones of those countries. In return the United States will provide a minimum of US$12 million each year for at least five years to the SPF countries. The U.S. tuna fishing industry will contribute US$1.75 million in license fees and the previously mentioned US$250,000 in technical assistance. The U.S. government will provide US$10 million annually in economic assistance (U.S. government 1986).

Internal factors

The major internal factor that led to offshore processing exclusively by Star-Kist and Van Camp was the high cost of labor in their California canneries, although both firms had been in Puerto Rico and American Samoa for several decades prior to the closing of their mainland canneries. Wages paid by processors in Puerto Rico are considerably lower than wages currently paid by Pan Pacific in California. Labor costs are even lower in American Samoa. Tax concessions granted by Puerto Rico and American Samoa were another very important reason for the offshore move. American Samoa even provides exemptions for tuna fishing vessels owned by companies organized under its laws. Another reason for moving offshore was the

adverse ruling by the USITC in 1984 in its "201" investigation that concluded canned tuna imports from foreign countries were not causing serious injury to U.S. processors. This ruling effectively stopped any further increase in the duty covering tuna canned in water that was being imported into the United States.

From 1980-1984 domestic tuna landings at U.S. ports and domestic tuna processing fell dramatically. In 1980, domestic landings were 181,436 tonnes, but by 1984, the landings were only 96,161 tonnes---a drop of 47 percent. In addition, the volume of canned tuna produced domestically fell from 14.8 million standard cases in 1980 to 6.5 million cases in 1984---a decrease of 56 percent (King and Bateman 1985). U.S. processors were faced with either continuing processing activities both offshore and in California where they operated expensive canneries, or consolidating all of their processing offshore where costs were significantly lower.

Another contributing factor to the offshore move was the change in relationship with the U.S. fleet that supplied the mainland canneries. Most of the vessels were homeported in California, and so long as the processors either owned the vessels or had large equities in them, and maintained their canneries in California, the vessels probably exerted pressure on the processors not to move. By 1980-1983, however, most seiners were operating independently of the processors, and presumably exerted less influence over processor decision making and policies.

High catches of tuna in the western Pacific should make the continued operation of canneries in American Samoa viable, and good catches of tuna in the eastern Pacific for delivery to Puerto Rico canneries should keep them operating successfully. A financial simulation analysis of 19 different types of purse seine operations in the eastern and western Pacific conducted by E.R.G. Pacific, Inc. (1985) shows that direct deliveries by 1,100 tonne seiners to either American Samoa or Puerto Rico appear to be profitable. Other scenarios for various size vessels and landing sites appear unprofitable, unless the price of tuna rises by 10 to 30 percent over its current level.

Long term impacts on the U.S. tuna industry

U.S. tuna processors can be expected to maintain their canning operations in Puerto Rico and American Samoa, where they are well placed to respond to U.S. market forces. The processors can be expected to continue their present policies of divesting in ownership of purse seiners in order to take advantage of the lowest possible frozen tuna prices on the international market.

It is unlikely that the processors will resume operations on the U.S. mainland because of labor costs, the need to re-establish expensive infrastructures in seaport areas where the competition for waterfront space is keen, and where processing plants are unwanted because of environmental problems.

Wages may increase in Puerto Rico and American Samoa, in which case the tuna processors will do everything possible to reduce other production

costs, especially by seeking the lowest possibly priced raw material and by seeking cost lowering improvements in processing technology.

The processors will also continue strong efforts to extend and expand their present fiscal concessions in Puerto Rico and American Samoa. In discussing any new business arrangements with Pacific island governments, U.S. processors will probably seek concessions that will make it profitable for them to engage in processing or processing related activities, such as provision of freezer bases and transshipment facilities.

Canned tuna imports into the U.S. will continue to increase and will gain an even larger share of the U.S. canned tuna market, unless a change in the duty on canned tuna packed in water is obtained. This would require a basic change in the U.S. administration's policies towards protectionism, and even stronger efforts to equalize tariff barriers.

Some industry analysts think that the consumption of canned tuna in the U.S. will only increase as the population increases (about 1 percent per year), but most industry officials interviewed for this report foresee a rate of increase in sales over the next few years of between 2 and 4 percent per year.

As a result of conclusion of the tuna treaty with island countries, more U.S. purse seiners may be expected to be based in the western Pacific. This could result in renewed attempts to start processing operations in areas of relatively low labor costs if landings in the western Pacific increase.

U.S. processors will continue to examine opportunities for profitable business arrangements in the Pacific island region. U.S. purse seine owners, using their relatively newer seiners that presently are in financial difficulties, may seek joint venture operations with local governments or private investors.

U.S. purse seiners will continue to fish in the western Pacific because the tuna treaty guarantees payment of US$1.75 million per year by industry in license fees. As U.S. processors continue to seek the lowest international prices for frozen tuna, and if seiners continue to lose money, and if U.S. seiner owners seek joint ventures overseas, it is likely that the number of U.S. flag vessels will drop below the 72 vessels in the current active fleet. Vessels that remain will likely fish in the western Pacific for delivery to American Samoa or in the eastern Pacific for delivery to Puerto Rico. Transshipment from Guam and Tinian will continue unless Pacific island nations develop transshipment facilities closer to the centers of fishing and make strong efforts to base seiners at these ports.

Finally, the tuna treaty might indirectly lead to business ventures between U.S. interests and Pacific island countries. As the treaty requires the transfer of technology on a continuing basis, it is possible such interaction between U.S. processors, vessel owners, island governments and investors could lead to unexpected cooperative business efforts.

Conditions necessary to establish or expand a processing facility

There are numerous broad categories of issues, activities and operations which must be considered in planning for establishment of a tuna processing facility or expanding one already in operation. Conceptual issues related to infrastructure are discussed more fully in Mattson (1984) and Miklius (1987).

- **Land.** There must be adequate land available for the processing plant's activities, including space for unloading fish, cold storage, receiving and shipping, tuna processing and canning lines, quality control laboratories, fish meal plants, can manufacturing plants if necessary, warehouses to store supplies and inventories, and office space. Adequate space for container yards with sufficient electrical outlets is also needed.

- **Deep draft harbors or ports.** Processing plants ideally should be located where both the tuna fishing vessels and freighters transporting incoming supplies and the outgoing cargo can moor alongside wharves adjacent to the processing plants. Pago Pago, American Samoa is a good example of such a port. It is possible to site processing plants away from waterfront areas, as in Thailand and Japan, but this would probably be less efficient in most Pacific island countries.

- **Infrastructure.** Infrastructure includes adequate wharves and piers, electricity, water, vessel fuel and fueling facilities, roads and medical facilities. The plant should be located within reasonable distance of air transportation in order that spare parts may be brought in quickly, and for the transportation of company personnel and vessel crews.

- **Cold storage.** Cold storage facilities are needed to hold fish before processing, and should be capable of making ice. This is important if fishing fleets supplying the processing plants include baitboats operating on trips of short duration.

- **Vessel support and repair facilities.** At least minor repair facilities for fishing vessels should be located at the processing plant site, and major repair facilities should not be too far away. Since purse seiners will probably deliver most of the fish for processing, adequate space is needed to spread seine nets for repairs. Fishing vessels have high technology equipment, (e.g. sonars, satellite navigators, and helicopters), so a first rate repair facility would probably have to be in the center of other industrial activities, including an electronic repair facility.

- **Labor force.** An adequate supply of dependable workers at reasonable wage rates is a necessity. Government policymakers may have to compare their local wage rates with those of tuna processors in other foreign countries, and if necessary make adjustments (not necessarily wages) that will allow

prospective tuna processors to compete with other low cost areas such as Thailand. Some island countries may be able to compete with the labor rates in Thailand tuna processing plants and some may not. For example, the present hourly wage rate in Western Samoa is about US$0.25 per hour for jobs in tourist related activities and about US$0.28 per hour for other types of jobs (at the exchange rate of 1 Tala=US$0.45).[15] In Papua New Guinea the present exchange rate is 1 Kina=US$1.07. The present urban wage scale is about 5 Kina per day, or roughly US$5.35.[16] The Fiji Manufacturing Industry Wages Council has recently approved minimum wage rates of F$1.13 an hour for regular workers, and F$1.41 per hour for casual workers, but they are being protested as too high by the Fiji Manufacturers Association (The South Sea Digest, 1986:1). (The present exchange rate is about F$1=US$0.90.)

- **Tax incentives or other business concessions.** In order to induce tuna processors to invest the capital necessary to build or expand processing facilities, as well as to insure their long term profitability, tax incentives or business concessions are necessary.

- **Overseas shipping lines.** The processing plant should be located in an area that is capable of being serviced by cargo and container ships that can carry products to market and service reefer vessels used to transship frozen tuna. Some reefer vessels are large, on the order of 100 meters long.

- **Political and legal considerations.** These are probably as important as any other criteria in assessing the feasibility of establishing a tuna processing plant. Governments must be politically stable and have reasonable legal regulations concerning expatriate companies doing business either in joint ventures with private or as single business entities. The environment should be protected as much as possible, but environmental regulations should be reasonable and practical in order to achieve desired development objectives.

IMPLICATIONS FOR PACIFIC ISLAND COUNTRIES

Problems faced and overcome by U.S. tuna processors in the period beginning in 1975 are useful for Pacific island countries to study because they illustrate the intrinsically dynamic, and sometimes unpredictable nature of tuna processing. The large U.S. tuna processors succeeded in overcoming serious problems connected with resource location, abundance, and price, as well as increased costs of production, rapid changes in consumer demand for canned tuna, intense competition from foreign processors, and large scale changes in both the U.S. and foreign purse seine fleets. That they have succeeded in overcoming these problems may be due as much to their being part of much larger corporate entities, as it is to decades of experience in a changing industry, issues that the Pacific island nations have not historically dealt with.

In the mid-1970s, when U.S. tuna processors had ownership interests in large numbers of purse seiners, domestic landings were at an all time high. However, with the buildup of foreign purse seine fleets and the onset of a worldwide recession in 1981 with high interest rates, the U.S. fleet suffered serious financial setbacks and the number of U.S. seiners dropped to about 50 percent of the mid-1970s number. The buildup of foreign fleets caused an increase in the worldwide production of frozen tuna, much from the central and western Pacific, and forced prices down, causing further losses to the U.S. fleets, and a sharp drop in domestic landings to the processors.

Tuna processors overseas, taking advantage of lower prices of raw tuna, and extremely low labor costs, began to import increased amounts of frozen tuna, and exported the canned product to the U.S. market, where they have captured an ever increasing share. Dietary habits of the U.S. consumer began to change, with a shift to tuna canned in water, which enjoys a much lower duty than tuna canned in oil. This allowed overseas producers, especially in Thailand, to dramatically increase their exports to the United States. The U.S. government in addition refused any tariff relief for the U.S. processors in face of increased imports from overseas.

Faced with a drop in domestic tuna processing, a large financial stake in unprofitable purse seiners, and increasing labor costs in running their U.S. mainland canneries, U.S. processors incurred considerable losses. As canned tuna prices rose to new highs in 1981-1982 consumption fell, causing additional losses to processors, which when coupled with unprofitable operations of processor owned fishing vessels, caused losses in net income for most of the processors between 1982 and 1984.

These losses led processors to close their California canneries during 1982-1984, to divest themselves of ownership in purse seiners, and to expand their processing capacities offshore in Puerto Rico and American Samoa. Today only one relatively small processor is operating on the mainland United States. Processor finances then began to improve, becoming profitable in 1985 with the trend continuing into 1986.

While expanding offshore production capacities in Puerto Rico and American Samoa (where labor costs are lower than in California) the

processors sought and received generous tax incentives and other concessions from the two governments and are expected to press for their continuation. At the same time, fishing areas of the U.S. fleet changed, with a large number of seiners moving to the central and western Pacific where tuna resource availability is high, and where it is expected to remain at high levels of abundance. Since 1985, when 60 U.S. seiners were operating in the western Pacific, about half have returned to the eastern Pacific where fishing success has greatly improved. Nevertheless, the financial success of many purse seiners remains marginal, and further decline of the U.S. fleet is likely.

The activities of U.S. processors in foreign countries over the past two or three decades has shown that they must maintain flexibility and mobility if they are to succeed in business, but their involvement with local government and business interests can lead to economic development in countries whose tuna fishing and processing industries are still relatively undeveloped.

Over the long term, due to the increase of the world's population, and without catastrophic depressions in the world economy, the demand for canned tuna can be expected to increase, and this should present new opportunities for Pacific island countries to become a more significant part of this worldwide industry. One way to achieve this is for the Pacific island nations to forge new links with U.S. industry and their related activities—including the still large tuna purse seine fishing fleet—which maintains a keen interest in fishing in the central and western Pacific areas.

Impact of U.S. processor operations on the Pacific islands

U.S. processors will probably need to repair relations that have eroded over the past five years with Pacific island nations in order that future business discussions may proceed in a positive manner. There are indications this is beginning. Tuna processors are expecting a continued annual increase in the U.S. consumption of canned tuna. If it should reach levels beyond the productive capacities of their plants in Puerto Rico and American Samoa, they may consider processing operations in areas closer to the tuna resources supplying those plants.

Since the processors are likely to continue to reduce their holdings in vessel ownership and operations, they will seek business arrangements that allow them to purchase frozen tuna direct at the lowest possible prices. If U.S. purse seine owners can enter into profitable joint ventures with island governments—in which the government is willing to subsidize some of the vessel operational costs in return for the social and economic benefits of basing a purse seiner in a developing area leading to lower frozen tuna costs—processors would be expected to endorse such an arrangement.

Processors can also be expected to contribute to technology transfer under the terms of the U.S. tuna treaty, and may be able to make substantial contributions in this area.

Processors are in the position to offer Pacific island nations that are producing canned tuna marketing skills needed to sell their products on the U.S. market. Some Thailand processors are already exporting canned tuna bearing the labels of major U.S. processors, so U.S. processors might consider similar arrangements with island processing plants if the costs of the canned tuna were competitive with the Thai product, even if they are not involved in the ownership or management of the processing plants.

U.S. processors might also help island nations develop new fishing bases, providing the outcome would lead to a dependable supply of tuna for their processing plants. (Doulman 1986b:7) cites five conditions needed to establish a viable fishing base in the Pacific islands: (1) support of the local government, (2) satisfactory port and ancillary facilities, (3) a fleet of at least five fishing vessels, (4) willingness of vessel owners to fish offshore and cooperate with each other, and (5) central fleet management.

Tuna development alternatives and potentials based on U.S. processor experiences

If Pacific island countries seek to develop tuna fisheries based on the recent experiences of U.S. tuna processors they should model their processing activities (or at least their inducements to get others to start processing), on the methods used by U.S. processors to return to profitability following years of business losses. The U.S. processors were able to improve their situation because they consolidated operations in areas of relatively low labor costs, received tax concessions from local governments, divested their interests in unprofitable purse seiners, and purchased their raw tuna at much reduced prices.

Assuming interested developing Pacific island nations are able to provide a labor force whose wages would be low enough to encourage investors in processing plants, or would provide potential investors with sufficient tax incentives or other concessions, they are then faced with the problem of making sure the cost of raw tuna would not jeopardize the processing operation. If the potential investor does not have the ability to obtain low priced frozen tuna on the world market, the country may have to resort to operating its own fleet of tuna vessels to supply the processing plant. The capital needed for enough catcher boats to supply the processing plant may be beyond the ability of governments, so they might consider joint ventures with, say a U.S. purse seine owner who is seeking a way out of his financial difficulties. If the island government is willing to just break even on vessel operations, or perhaps even contribute a subsidy towards vessel operations in order that the processing plant received a steady supply of reasonably priced fish, it might be worth the effort, on the assumption that the general social and economic benefits from an operational processing plant would outweigh the subsidy.

The vessel partner, however, would have to be reasonably assured of at least some profit, or there would be no incentive in forming a joint venture. If the processing plant was a reasonably small one——say 12,500 tonnes per year capacity——it could require three seiners to provide the necessary fish. Catch data from industry sources indicates that the 32

standard Japanese 499 GRT seiners during 1986 on the average caught 541 tonnes of tuna per trip, so for a 12,500 tonne processing plant, about 23 such trips would be required. These seiners averaged 8.3 trips during 1986, so it is theoretically possible only three or four medium sized seiners might be required.

This type of scheme requires a high level of vessel technology, including refrigeration equipment to maintain the catch in excellent condition. There are smaller seiners with what has been described as medium technology refrigeration systems that use refrigerated sea water. One such seiner, a 33 meter vessel with a carrying capacity of 200 tonnes of tuna was recently sold by Marco Seattle to the New Zealand fishing company Sanford, Ltd. for tuna seining. If the trips to the fishing grounds are short, and if this type vessel is satisfactory in tuna fishing around New Zealand, it might be worth considering for a small cannery in the islands region. The key here is whether the fish quality would be satisfactory.

Medium or small size seiners might work in areas that are close to the fishing grounds, such as Papua New Guinea or the Solomons. They probably would not be suitable for operations in Kiribati, where fishing is spread over much larger distances. A key factor is that of travel time relative to fishing time.

If some of the U.S. purse seiners based in the western Pacific are operating at a profit, it might be possible to contract with them to supply the fish needed to maintain a processing operation.

While the above examples might sound good theoretically, it would take a detailed economic and financial analysis to determine if they have even a moderate chance of being successful. The truth may be that the chances for developing island nations to base their future tuna processing development plans on recent experiences of U.S. tuna processors may be a dead end, especially in the light of their recent profit and loss performance, which were caused by international events. It might be more productive to try and get U.S. processors to strike out on new paths which they have said they will consider.

Instead of a processing operation, Pacific island nations could consider developing transshipment facilities in locations closer to the center of fishing operations, with the view that if they proved successful, they could lead to the further development of a processing plant. However, establishing large transshipment facilities from scratch may be financially prohibitive unless funded by organizations such as the Asian Development Bank or World Bank, and for the transshipment facility to later evolve into a processing plant, a nearby urban center would be required to provide a labor force.

One other possibility developing island nations might consider is obtaining their own reefer vessels to transship tuna. If world tuna production continues to increase, there should be a need for additional reefer vessels, and if Pacific island countries can figure out a way to run reefer vessels more cheaply than the foreign reefer vessels now used, there could be a market for their services.

CONCLUSION

During the past ten years, the U.S. tuna processing industry has demonstrated its flexibility and mobility in successfully overcoming a series of extremely vexing and often unexpected events in a business which by its nature has to contend with resource availability, environmental and political factors on a global scale, as well as competition from foreign sources and in the domestic market place. In doing so, it has positioned itself to react favorably to what appear to be fundamental changes in relations with the U.S. government, the U.S. purse seine fleet, the location and economics of tuna processing facilities, and the international political forces that control access to the resources upon which the processors depend.

The international tuna industry, including processors, fishing fleets, and related support activities is still evolving in its production and consumption segments, but the U.S. tuna processors in the past three years have apparently met this challenge by changing from being vertically integrated to a more horizontal approach to conducting business, and have taken drastic actions to cut production costs in order to meet foreign competition and to return to profitability.

The processors realized that in order to be profitable, they would have to operate in areas where labor costs were lower than in California and where they could compete with the increasing amounts of imported canned tuna, particularly from Thailand. They therefore consolidated their U.S. processing operations offshore in Puerto Rico and American Samoa, except for one medium sized cannery still processing on the U.S. mainland.

Faced with further losses due to ownership or equity in purse seiners, they did not hesitate to divest their interests in the unprofitable seiners. This has led to a fundamental change in their relations with vessel owners and has contributed to the present legal action by a large number of seiners against the processors.

U.S. processors may have concluded that even though their processing operations in Puerto Rico and American Samoa are sufficient for them to meet the demands of the U.S. market, future increases in U.S. consumption of canned tuna, or a decrease in foreign imports if the tariff on tuna packed in water is raised, may require expanding their processing capacities. As a result they will continue to investigate the possibilities of processing in the island regions close to the fishing grounds.

As a result of an increasingly difficult adversarial relationship with the Pacific island nations, the processors supported U.S. government negotiations that led to the conclusion of a new tuna access treaty with the 16 SPF members that will allow U.S. purse seiners legal access to the EEZs of these nations. The treaty is expected to remove the serious adversarial relationship that has existed between the U.S. and the SPF nations and hopefully will lead to a new era of cooperation between U.S. processors, the U.S. fishing fleet and the island countries.

Island countries have indicated an interest in developing their own tuna fisheries, so the time appears right for the U.S. processors, as well as other segments of the U.S. tuna industry, to seek new business arrangements with the Pacific islanders.

Doulman (1985:16) has identified the considerations needed for foreign participation in tuna processing and related activities in the Pacific islands region as 1) resource availability, 2) a positive investment climate, 3) availability of natural and infrastructure facilities, 4) essential guides and services, 5) labor availability and skills, and 6) fiscal and other concessions. This indeed is a formidable series of criteria that must be met if the tuna fisheries of the Pacific are to be developed in a well planned manner. Now that the tuna treaty has been negotiated, perhaps one step towards making these things reality would be for the SPF nations to invite representatives of the U.S. tuna industry, processors, harvesters, and their financial advisors to a wide ranging meeting to investigate the possibilities of how both groups can work together for their mutual advantage.

APPENDIX 1: EMPLOYMENT IN TUNA CANNERIES IN PUERTO RICO, AMERICAN SAMOA AND CALIFORNIA 1986.

Puerto Rico	Employment[a]	
Total employees 5 canneries	8,144	(June 1986)[b]
Less Caribe Tuna..... Ca. 700		
Less Neptune Packing.. Ca. 500		
1,200	1,200	
Approximate number employees of Star-Kist, Van Camp and Bumble Bee	6,944	
American Samoa		
Star-Kist	2,585	
Van Camp	1,226	
	3,811	(November 1986)[c]
Sub-total Puerto Rico/American Samoa.... Ca.	10,755	
California		
Pan Pacific Fisheries ..... Ca.	500	
Grand total ..... Ca.	11,255	

a. According to industry sources, Star-Kist employs about 4,000 and Bumble Bee about 1,300 individuals in Puerto Rico. Since there are approximately 6,900 total employees by the three major U.S. Puerto Rico tuna processors, Van Camp's share would thus be about 1,600. However, this figure, when compared to the workforce of Van Camp in Samoa (1,226) may be overestimated.
b. Puerto Rico Economic Development Adminstration.
c. Personal communication with U.S. Department of Labor Staff.

NOTES

1. H. J. Heinz Co. 1986b:2; First Boston Corp. 1986:7.

2. H. J. Heinz Co. 1986:21; interviews with Mr. Ed Ryan, Star-Kist Foods, Inc., December 19, 1986 and January 27, 1987.

3. Interview with staff of USDOL, Washington, D.C., January 15, 1987.

4. SAMI Report 1986.

5. Interview with staff of USDOL, Washington, D.C., January 15, 1987.

6. Interview with Mr. Mike McGowan, Bumble Bee Seafoods, Inc., January 26, 1987.

7. Interview with Mr. Robert Pasarow, California Home Brands, Inc., December 16, 1986.

8. Docket, Civil Case 85-0553(K), U.S. District Court, Southern District of California, San Diego, California, December 11, 1986.

9. Interview with Mr. V. E. Mattson, November 18, 1986.

10. U.S. Agency for International Development, Regional Office, Suva, Fiji. (personal communication).

11. Press Release, The White House, Washington, D.C., October 23, 1986.

12. Booklet titled "American Samoa", published by the Office of the Governor, American Samoa. Undated.

13. Office of the Governor, American Samoa.

14. Interview with Mr. August Felando, American Tunaboat Association, January 22, 1987.

15. USDOL Regional Office, Honolulu, Hawaii, January 5, 1987.

16. Personal communication, Dr. David J. Doulman, January 26, 1987.

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PIDP's research, education, and training activities are developed as a direct response to requests from the Standing Committee. PIDP's projects are planned in close cooperation with the Committee to ensure that the focus and the organization of each project address the needs identified by the heads of government on the Committee, a process which is unique within the East-West Center and in other research and educational organizations serving the Pacific.

A major objective of the program has been to provide quality in-depth analytical studies on specific priority issues as identified by the Pacific Island leaders and people. The aim is to provide leaders with detailed information and alternative strategies on policy issues. Each Island country will make its own decision based on national goals and objectives. Since 1980, PIDP has been given the task of research in six project areas: energy, disaster preparedness, aquaculture, government and administrative systems, roles of multinational corporations, and business ventures development and management.