THE TUNA INDUSTRY IN THE PACIFIC ISLANDS REGION: OPPORTUNITIES FOR FOREIGN INVESTMENT

David J. Doulman, Ph.D.
THE TUNA INDUSTRY IN THE
PACIFIC ISLANDS REGION:
OPPORTUNITIES FOR FOREIGN INVESTMENT

David J. Doulman, Ph.D.

April 1985

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
David J. Doulman is a fellow with the Pacific Islands Development Program and Project Director of the Multinational Corporations in the Pacific Tuna Industry project. This paper was prepared at the request of the organizers of the Pacific Islands Association for presentation at the April 1985 Conference on "Investment Opportunities in the Pacific Islands."

The Pacific Islands Development Program is publishing this report for use by Pacific island governments. To ensure maximum dissemination of the material contained in the report, it is not copyrighted and island governments are encouraged to copy the report or portions of it at will. The Pacific Islands Development Program requests, however, that organizations, institutions, and individuals acknowledge the source of any material used from the report.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>The Fishery</td>
<td>2</td>
</tr>
<tr>
<td>Distant-Water Fishing Operations</td>
<td>3</td>
</tr>
<tr>
<td>National Industries Within the Pacific Islands Region</td>
<td>7</td>
</tr>
<tr>
<td>Development Prospects</td>
<td>13</td>
</tr>
<tr>
<td>Government Objectives</td>
<td>14</td>
</tr>
<tr>
<td>Considerations for Foreign Investment.</td>
<td>16</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>18</td>
</tr>
<tr>
<td>Fishing</td>
<td>18</td>
</tr>
<tr>
<td>Transshipment Facilities</td>
<td>20</td>
</tr>
<tr>
<td>Processing Facilities and Marketing.</td>
<td>23</td>
</tr>
<tr>
<td>Conclusion</td>
<td>26</td>
</tr>
<tr>
<td>Notes</td>
<td>30</td>
</tr>
<tr>
<td>References</td>
<td>31</td>
</tr>
</tbody>
</table>
INTRODUCTION

The international tuna industry is in a state of flux. Since the early 1980s, and particularly since 1983, a large number of planned and forced adjustments have taken place in the industry throughout the world. These adjustments have resulted from a variety of factors, including: (1) industry rationalization programs in Japan, (2) the declaration and subsequent formalization by international convention of 200-mile Exclusive Economic Zones (EEZs), (3) significant advances in regional fisheries cooperation in the Pacific islands region under the auspices of the Forum Fisheries Agency (FFA), (4) increases in fuel prices, (5) depressed tuna prices, and (6) high rates of interest and expanded canning capacities in Asia where per unit production costs (in both monetary and real terms) are markedly lower than in the traditional processing areas of the United States and Europe.\(^1\) While these adjustments have been taking place, activity and interest in the tuna fishery in the Pacific islands region has heightened. Increasing numbers of Asian (Korean, Taiwanese, and Filipino) and American vessels, particularly purse seiners, have been deployed in the region while Japanese tuna fleets have continued to operate. Whereas pole-and-line and long-line fishing activity in the region has stagnated and declined in some instances, purse-seine fishing activity in terms of total number of vessels reached an all-time high in 1984.

Against this background, Pacific islands nations have continued to express a desire and willingness to become more fully involved in the region's tuna fishery and have consistently demanded fairer financial returns for the fish harvested by distant-water fishing fleets in their EEZs. Governments in some island states have also actively promoted
foreign investment in the tuna industry in their respective countries as a means of bolstering and expanding existing or establishing new industries.

The adjustments being made in the tuna industry worldwide and the desire of Pacific island governments to obtain greater benefits from the industry have prompted some commentators in Europe and the United States to voice the opinion that the time is right for these governments to make concerted efforts to attract and facilitate investment in the industry. This opinion is based primarily on financial considerations related to past modes of operation (both in terms of fishing and the location of processing facilities throughout the world), resource availability, and the fact that the world tuna industry appears to be at a crossroads.

This paper provides a survey of aspects of the tuna industry in the Pacific islands region. It begins with a broad review of the region's fishery in terms of the operations of distant-water fishing fleets and national industries within the region. While the former involve only fishing, the latter concerns both fishing operations and tuna processing. The objectives of governments in fostering the establishment of tuna projects and the development of the industry in particular Pacific island countries are analyzed together with conditions that must be met to attract foreign investment. The paper concludes by describing current opportunities for investment in the tuna industry in the Pacific islands region.

THE FISHERY

The tuna fishery in the Pacific islands region is an integral and important component of the world tuna fishery. Based on catch data
compiled by the Food and Agriculture Organization in recent years, it is estimated that in 1984 some 630,000 tonnes of tuna of all species were harvested in the region by distant-water fishing fleets operating from ports in Asia and the United States and by vessels registered and based at ports within the region. These 1984 landings accounted for approximately 35 percent of the total world tuna catch.

Distant-Water Fishing Operations

Distant-water fishing vessels operating in the Pacific islands region use three fishing techniques: long lining, pole and lining, and purse seining. The latter two methods target on surface stocks of tuna, particularly skipjack (Katsuwonus pelamis) and juvenile yellowfin (Thunnus albacares), while the former method exploits deep sea tunas, the most common of which in the Pacific islands are adult yellowfin, albacore (Thunnus alalunga), and big-eye (Thunnus obesus). Billfish are also susceptible to capture by long-line vessels as are other large species such as shark.

In 1984 about 115 purse seiners of all nationalities operated in the Pacific islands' tuna fishery. Approximately 90 percent of these were either American Tunaboat Association (ATA) or Japanese vessels. The remaining vessels were Honduran, Filipino, Korean, Mexican, and Taiwanese. In addition, some 700 long-line vessels operated in the region. These vessels were for the most part Japanese and Korean, although some Taiwanese long-line vessels also fished.
Distant-water pole-and-line fishing activity has declined in importance in recent years in the Pacific islands region, largely because of the rationalization plans of the Japanese government for this component of the industry (Doulman and Wright 1983:55-56). In 1984, an estimated 100 pole-and-line vessels were licensed to operate in the Pacific islands region. The operations of these vessels were mainly confined to Micronesian waters, including the extensive EEZ of Kiribati.

Of the 630,000 tonnes of tuna landed in the Pacific region in 1984, an estimated 530,000 tonnes were landed by distant-water fishing fleets. At 1984 prices, which were depressed and below long-term average trend prices, the market value of the distant-water catch in the region was estimated to be approximately US$450 million.

Most distant-water fishing vessels operating in the Pacific islands region do so under access agreements of various types. These agreements acknowledge the jurisdiction of island governments in the region over tuna stocks within their EEZs and the right of these governments to regulate and control access to the tuna resources within their respective 200-mile zones. In turn, the agreements permit foreign-licensed vessels to operate for a negotiated fee on specified terms and conditions. These terms and conditions of access govern such matters as crew and vessel obligations within the EEZs of licensing states and the furnishing of catch statistics for each fishing trip. Pacific island countries must impose these terms and conditions to ensure the orderly exploitation of their tuna resources. Provision of catch data in particular is a basic requirement for sound biological management of the fishery and, in turn, for conservation of tuna resources.

Pacific Islands Development Program - 4
Access agreements negotiated between Pacific island countries and distant-water fishing nations are either bilateral or multilateral. Agreements in some form (including those in the process of renegotiation) are currently in force between Pacific island nations and Japan, Korea, Mexico, Taiwan, the United States, and the Soviet Union. All agreements are negotiated with Pacific island governments (or their statutory agencies such as the Micronesian Maritime Authority in the case of the Federated States of Micronesia), although signatories to agreements for distant-water fishing nations represent both government and industry.

Access arrangements in all cases yield a financial return for Pacific island governments combined in some instances with an aid component. The financial yield can be determined in a variety of ways although there is a movement by governments in the region to relate returns to the quantity and market value of tuna harvested. Most Pacific island governments attempt to secure a financial return equal to at least five percent of the market value of the fish harvested. In some agreements this objective is explicitly acknowledged, in others its recognition is implicit.

Aid provided by distant-water fishing nations as part of access agreements frequently consists of the provision of capital equipment (vessels, fishing gear, industrial freezers, etc.), access to training programs, and, in some cases, grants or concessional finance for fisheries projects usually of a developmental rather than a commercial nature. However, it is policy for some Pacific island governments to reject aid as part of access agreements on the grounds that these agreements should be negotiated strictly on commercial terms. These countries maintain that if a distant-water fishing nation wants to grant aid to fisheries, it should
not be linked to any consideration of access for the donor's fishing fleet.

Under present conditions Pacific island countries that enter into access agreements with distant-water fishing nations generate few, if any, indirect benefits. This is because distant-water vessels operate from and return to their home ports where they purchase all provisions before the start of each fishing trip and usually off-load their catch upon their return. Consequently, there is little interaction between the distant-water fishing fleets and the domestic economies of the island countries. Few nationals from the region are employed (except for a few Micronesian fish handlers and laborers in Guam and Tinian [Commonwealth of the Northern Marianas Islands] and some American Samoans) in the fishing operations. As a general rule, distant-water fishing vessels utilize ports within the Pacific islands region only in cases of emergency— for example, if a medical need arises or if a vessel encounters mechanical problems. Some purse seiners do transship their catch at the ports of Guam and Tinian while others unload directly at the canneries in American Samoa. It is only at these locations that the activities of distant-water fishing fleets generate indirect benefits within the region.

Indirect benefits generated by fishing fleets can be substantial. For example, in 1981 in Papua New Guinea the domestic operators of small (50 Gross Registered Tonnes [GRT]) pole-and-line vessels in the domestic fleet spent approximately US$240,000 per vessel on goods and services supplied by local merchants and workers. Similarly, expenditures by the operators of a medium-sized (350 GRT) purse seiner based at Rabaul in Papua New Guinea totaled US$400,000 in 1981 (Doulman 1984:126-48). Twelve visits by American purse seiners to Honolulu in 1983 generated more than US$2 million
in income for Hawaiian businesses (State of Hawaii 1984:10). These expenditures represent significant payments to local businesses, and although there is a high import component in many of the goods and services provided (for example, fuel purchases), their supply boosts the level of economic activity in the locations where the fleets are based and serviced. Therefore, governments in the region that have the capacity to service distant-water fleets—such as Hawaii, the Federated States of Micronesia, the Philippines), and the United States (American Samoa and Puerto Rico).  

National Industries Within the Pacific Islands Region

Of the 630,000 tonnes of tuna taken in the Pacific islands region in 1984, less than 100,000 tonnes (or approximately 36 percent) were harvested by vessels permanently based at ports within the region. About 60 percent of this latter amount was processed in the region. The unprocessed market value of the catch taken by the region's vessels was estimated to be US$60 million.

Pole-and-line and long-line fleets (or individual vessels) are currently based in American Samoa, Fiji, Hawaii, Kiribati, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, and Vanuatu. Nauru has two purse-seine vessels, and since 1980 one seiner of Honduran registration has been based in Papua New Guinea. Tuna landed by the fleets based in Kiribati, Papua New Guinea, and Vanuatu is exported. Pole-and-line caught tuna from Kiribati and Papua New Guinea is being processed in Fiji and elsewhere (for example, Thailand) while some long-line product goes to
Japan. Tuna landed by vessels in American Samoa, Fiji (including the vessels from Tonga and Tuvalu), Hawaii, and the Solomon Islands are processed at facilities in each of the countries, although a large proportion of the tuna landed in the Solomon Islands is exported in frozen round form to canneries in the United States and Asia. With the closure of the only tuna cannery in Hawaii (Hawaii Tuna Packers) in late 1984, the future prospects for the Hawaiian fleet that relied on sales of fish to the cannery are unclear.

The ownership of tuna fleets based in the Pacific island region varies. Some fleets are owned by governments or statutory bodies, joint-venture companies, private corporations, or individual fishermen who have charter agreements with processors. It is quite common for ownership patterns to change over time or for more than one type of ownership regime to exist in a single country. For example, the tuna fleet in the Solomon Islands is owned by both a joint-venture company and a statutory corporation. To ensure supplies of tuna for processing in Pacific island countries that have such facilities, contractual arrangements between processors and vessel owners are usually entered into if the vessels are not owned by the processing company.

Shore-based facilities for handling tuna in the Pacific islands region are currently of two types: transshipment facilities and processing facilities (for canning and production of katsuobushi or arabushi [smoked tuna]). The transshipment facility in Vanuatu was established in 1957 and is owned and operated by the Japanese multinational giant Mitsui Bussan. The purpose of the facility is to consolidate catches of individual vessels and hold them until a sufficient quantity has accumulated for export.
overseas on an economical basis. The facility can handle up to 10,000 tonnes of long-line caught tuna per year, although in recent years smaller quantities of tuna have been handled. For example, in 1984 less than 4,000 tonnes of tuna was handled for transshipment. Vanuatu's tuna exports in 1984 were valued at US$7 million and accounted for about 12 percent of the country's total exports (Government of Vanuatu 1985:11-12).

A tuna transshipment facility was established in Palau in the early 1960s to receive and hold tuna landed in the area. The facility was formerly operated by the American multinational tuna company Van Camp (Ralston Purina). Tuna landed at the facility was shipped to the Van Camp cannery in American Samoa for processing. In recent years the facility has been underutilized and only irregularly maintained.

Transshipment operations in Guam, which started modestly in the early 1970s, involve purse-seine vessels. These operations do not utilize design-specific shore-based facilities and as such are inherently temporary in nature. In Tinian, transshipment operations consist simply of transferring tuna from one vessel to another in a sheltered harbor. No shore-based infrastructure exists to support these operations. For this reason the ports of Guam and Tinian are not currently considered to be transshipment ports in the strict sense of the term.

Tuna processing facilities are located in three countries and one territory in the region. The largest facilities are located in American Samoa where two canneries with a combined annual processing capacity in excess of 140,000 tonnes are currently in their final stages of upgrading and expansion. These canneries are owned by the American multinational tuna companies, Star-Kist (H.J. Heinz) and Van Camp (Ralston Purina). The
former began operations in American Samoa in 1963 and the latter in 1954. The economy of American Samoa is overwhelmingly dependent on these two canneries. More than 90 percent of American Samoa's total value of exports is derived from these tuna processing facilities; together they account for about 30 percent of total wage employment in the territory. The output of the American Samoan canneries is marketed principally in the United States.

Smaller tuna canneries in the region are located in Hawaii, Fiji, and the Solomon Islands. The cannery in Hawaii is owned by the American corporation Castle and Cook. The future of this cannery is uncertain but it is unlikely that it will be reopened by Castle and Cook. The company also terminated its San Diego tuna canning operations in 1982. In recent years the Hawaii cannery processed about 16,000 tonnes of tuna yearly. Canned production was valued at US$40 million and was marketed locally in Hawaii and on the U.S. mainland. The cannery was also important for employment as it provided approximately 400 jobs for residents of Hawaii (Personal communication with officers of Hawaii's Department of Planning and Economic Development).

Almost all of the tuna landed in Fiji's EEZ is processed prior to export. The small proportion of the high value long-line caught product that is not processed is exported to Japan for the sashimi market. The remaining tuna is canned and marketed mainly in Europe and more recently in the United States. In 1983, 8,500 tonnes of tuna was processed in Fiji with export receipts totaling approximately US$11.8 million. These exports accounted for slightly less than 3 percent of Fiji's total exports in 1983 (Government of Fiji 1984:59-61).

Pacific Islands Development Program - 10
The tuna cannery in Fiji is a joint venture between the Fijian government and C. Itoh, a Japanese multinational and trading company. Itoh holds 71 percent of the equity in the joint venture. The venture has been operating since 1964 with marketing and management provided by Itoh. However, Itoh has recently informed the Fiji government of its decision to opt out of the joint venture upon expiration of the current project agreement in 1987. The reason cited for Itoh's withdrawal is reportedly lack of profit generated by the Fiji operation. (Islands Business 1985:4). However, Itoh was also a minority partner in Papua New Guinea's largest and most successful prawn company, New Guinea Marine Products Pty Ltd, based in Port Moresby. In 1983 Itoh sold its equity in the company on the grounds that it wanted to disinvest in fishing as a matter of company policy and to concentrate solely on trading, which had been the company's principal business activity. It is a matter of conjecture, therefore, that Itoh's desire to withdraw from its Fiji operations might not be related to the Fiji operations **per se** but rather to its stated policy of wanting to return to its primary corporate objective of trading. With the likely withdrawal of Itoh from the joint venture, the government of Fiji is actively seeking a foreign partner as replacement (Islands Business 1985:4).

Tuna processing in the Solomon Islands involves the production of both canned tuna and **arabushi**. The processing operations, which began in 1972, are a joint venture between the government of the Solomon Islands and the Japanese multinational company Taiyo. Taiyo provides the fishing, management, and marketing expertise for the joint venture. Apart from American Samoa, where the tuna industry dominates the territory's economy,
no other tuna operation in the Pacific islands region is as economically important as the tuna industry in the Solomon Islands. In 1983, vessels based in the country landed some 39,000 tonnes of tuna of all species. Of this amount 4,900 tonnes were processed as canned (3,100 tonnes) or smoked (1,800 tonnes) product; the remainder (34,100 tonnes) was exported in frozen round form. The value of tuna exports from the Solomon Islands in 1983 was US$24 million; this accounted for 41 percent of the country's total exports for the year. As in other countries in the Pacific islands region, the tuna fishing and processing facilities in the Solomon Islands provide important opportunities for employment.

The arabushi produced in the Solomon Islands is marketed in Japan by Taiyo while the canned tuna tends to be sold in Europe. Like the canned tuna produced in Fiji, the product canned in the Solomon Islands enjoys a high international reputation and is often sold under up-market labels such as "John West."

A katsuobushi plant in the Marshall Islands is a privately funded venture between Japanese and Marshallese interests. The plant processes tuna for the Japanese market. It is located at Majuro and employs about 50 persons. Tuna for processing at the plant is supplied by vessels based in Majuro (U.S. Department of Defense 1984:71).

Countries in the Pacific islands region with tuna canning facilities have been able to import substitute to some extent. Most countries in the region rely heavily on imports of tinned mackerel, and sardines to a lesser extent, to feed their populations. These imports aggravate a balance of payments situation that is already under pressure. In Papua New Guinea,
for example, imports of tinned mackerel are valued at about US$30 million per year. The establishment of tuna processing facilities by countries in the region has meant that these countries are able to conserve foreign exchange through import replacement of canned fish.

Ridings' (1983) paper discusses some further aspects of the tuna industry in the Pacific islands region and provides reasonably current information and detailed analysis.

DEVELOPMENT PROSPECTS

At one time or another all governments in the Pacific islands region have explicitly enunciated their desire and intention to increase their involvement in the tuna industry. Some governments such as Papua new Guinea have recently taken an aggressive approach to attracting potential foreign investors and have identified tuna as development a priority area for investment (Government of Papua New Guinea undated:8-13). Taking a similar stance, Fiji has sought closer cooperation with the United States on fisheries matters, particularly with respect to the establishment of transshipment facilities for American purse seiners operating in the region and the possible replacement of C. Itoh with an American partner in the joint venture (Islands Business 1985:4).

All governments in the region have a generally healthy and realistic attitude about the need for foreign capital and expertise in the tuna fishery. Furthermore, governments themselves are prepared to invest in the industry if this is necessary to attract foreign participation.
**Government Objectives**

In seeking foreign partners to participate in the development of the tuna fishery in the Pacific islands region, governments have specific goals to satisfy. Without exception, governments will attempt to achieve some, if not all, of the following objectives in undertaking a new or expanding an existing tuna project.

1. **Creating employment opportunities for Pacific islanders.** Most island countries have limited employment opportunities for their citizens, and, with annual rates of population growth equal to or in excess of 2 percent, priority is being given to economic activities that create jobs (South Pacific Commission 1984:4-5). High rates of population growth are exacerbated by high rates of urban growth in many island countries. Urban migrants cannot live off subsistence activities as they would in rural areas; they also cannot rely on traditional kinship ties for financial and other support. These circumstances promote antisocial behavior as a means of survival. The creation of employment opportunities helps cushion the adverse impact of sustained population increase and rapid urbanization. For this reason the increase in job opportunities is an area of critical concern to governments and policy advisers in the Pacific islands.

2. **Generating foreign exchange.** All Pacific island countries wanting to expand existing tuna operations or to initiate new projects do so with a view to improving their balance of trade. This can be done to some extent through import replacement
policies (and possibly by saving foreign exchange on tinned and frozen fish imports) and through the generation of foreign receipts from sales of processed and frozen round tuna.

3. Broadening and strengthening the country's economic base. As a general rule, Pacific island countries have narrow economic bases and are dependent on a small range of export commodities that characteristically face unstable world markets. While tuna exhibits this characteristic of instability, as an additional export commodity it nevertheless permits diversification, strengthens the economic position of the country, and can be expected to have a stabilizing influence on a country's exports earnings and government income.

4. Gaining greater national control over the exploitation and utilization of the country's tuna resources.

5. Generating additional government revenue to support socioeconomic development programs initiated by the government and associated agencies.

6. Training of Pacific islanders in an effort to reduce, over time, dependence on foreign skills in the tuna and related industries.

7. Facilitating technological transfer to Pacific island countries.

These considerations apply to most industrial projects being established in Pacific island countries. However, the ranking given to the various development goals, dependent as they are on socioeconomic priorities in each country, varies from government to government.
Considerations for Foreign Investment

While governments wanting to promote the tuna industry have specific benefits that they seek to achieve, foreign investors are essentially concerned with the risk involved in the venture and the financial security of their investment. Any investor contemplating participation in the tuna industry in the Pacific islands region will obviously scrutinize the proposed project and location prior to committing funds. In so doing foreign investors will assess the following aspects of proposed investment.

1. Resource availability. It must first be ascertained that a tuna resource of proven commercial potential exists in the proposed location. This might also include examination of baitfish stocks if pole-and-line fishing methods are to be utilized. Seasonality of tuna and baitfish resources should be established together with some notion of tuna migration patterns if possible. Theoretically, a knowledge of these patterns should help in basing fleets and locating shore-based facilities.

2. Investment climate. Several factors affect a country's investment climate. These include: political stability, management of the economy (including monetary and fiscal policy), the type and extent of controls placed on foreign investors and the consistency with which these controls are applied, the clarity of investment guidelines, and the responsiveness of government agencies and departments in dealing with foreign investment queries and proposals.
3. Availability of necessary natural facilities (water, harbors, etc.). A lack of natural endowments, such as supplies of fresh water, in some countries in the Pacific islands region constrain shore-based tuna development.

4. Existence of infrastructure available to the project, and a positive government position on the use of existing (in terms of rent, sharing, etc.) infrastructure and the provision of new infrastructure. The latter consideration might actually determine the fate of a proposed project. If infrastructure is to be included in a project's cost, the project might not proceed because this cost could render it financially unviable. However, if infrastructure is initially financed by the government and a user-charge levied on the investor for its use, the financial impact of this cost on the project in its early years is greatly reduced.

5. Availability of essential goods and services within the country to support the project. These goods and services range from fuel supplies and related storage facilities to telecommunications and basic engineering services. Also included in this category are entertainment facilities that are important for the rest and recreation of fishing crews and shore-based workers.

6. Availability of labor and the general level of skills of the workforce. Prevailing wage rates, productivity, and industrial relations will also be examined by prospective investors when contemplating the establishment of shore-based facilities.
7. Fiscal and other incentives and concessions offered by the host government.

The relative importance of each of these considerations will vary among investors and will be influenced to some extent by the type of organization the investor represents—that is, whether the investor is representing an organization with multinational interests in the tuna industry or is acting as an individual. Direct participation by the government in a project also affects the foreign investor's perception of the project because of reduced exposure to risk. For these and other reasons government participation in a project is usually considered desirable.

INVESTMENT OPPORTUNITIES

A range of investment opportunities in the tuna industry in the Pacific islands region currently exists. The most appropriate way to review these opportunities is in terms of the three major industry activities: fishing, transshipment facilities, and processing facilities and marketing.

Fishing

Most, if not all, governments in the Pacific islands region would welcome proposals from foreign investors to expand their domestic tuna fishing capacities. Proposals of this nature should provide for stable
commitments on the part of the investor and have well-defined benefits for the Pacific island country where the investment is to be located. Inclusion of benefits is necessary to dispel the justifiable suspicions of some governments in the region about the real motives of the foreign investor, (e.g., development of a national industry versus obtaining supplies of fish for processing elsewhere).

Interest in the expansion of tuna fishing in the Pacific islands region centers principally around investment in purse seiners although opportunities also exist in the long-line fishery and to a lesser extent in pole-and-line fishing. According to press and industry reports, governments and foreign investors in at least four countries in the region—Fiji, Kiribati, Papua New Guinea, and the Solomon Islands—are actively considering the introduction of purse-seine vessels into their national fleets. It is also rumored in industry circles that Western Samoa might be considering investment in a purse-seine fishing fleet. In Micronesia, there is interest in expanding domestic pole-and-line and long-line activities.

Foreign entrepreneurs who want to base their purse-seine vessels permanently at a port in the Pacific islands region would, in most instances, receive favorable consideration from island governments. Each country where a vessel is based would derive financial and other more indirect benefits while the vessel owner would likely receive preferential access to the country's tuna resources.
Transshipment Facilities

The only shore-based transshipment facilities in the Pacific islands region that have the capacity to service the industrial tuna fishery are in Palau and Vanuatu. Establishing additional transshipment facilities close to the fishing grounds of the purse-seine fleets would enhance the operational efficiency of the fleets and boost their financial returns by minimizing unproductive port time and travel time from the fishing grounds to the port of discharge. The principal problem in establishing shore-based facilities in the region concerns the capability of many locations in the Pacific to provide prompt and efficient service at ports of discharge. In particular, a suitable port of discharge must be able to provide short turnaround times for fishing vessels (e.g., the period of time vessels spend in port discharging their catch and taking on provisions).

Congestion and other restrictions in ports such as Pago Pago (American Samoa), for example, often mean that seiners are idle for as many as 10 to 60 days when discharging their catch. Travel time from Pago Pago to the purse-seine fishing grounds in the Federated States of Micronesia and Papua New Guinea and back can take an additional 15 to 20 days per trip. Similar travel times are also common for vessels operating out of Japanese ports.

Considerable interest in investment in transshipment facilities has been expressed by countries in the Pacific islands region. The most promising locations for a transshipment facility are the Federated States of Micronesia, Papua New Guinea, and Guam, provided that the U.S. government can extend certain exemptions with respect to the use of foreign
flag carrier vessels in Guam's ports. The governments of the Federated States of Micronesia and Papua New Guinea and Guam's administration would actively support the establishment of such a shore-based facility by a foreign investor.

The policy of the Japanese government with respect to transshipment of tuna has traditionally been to require all Japanese flag vessels to return to Japan to discharge their catches at the end of each fishing trip. This requirement enables the government to regulate the supply of tuna to the Japanese market and thereby to support prices. The policy is particularly important for the long-line fishery and represents a textbook example of a government utilizing institutional arrangements to alleviate the inefficiencies of an over-capitalized industry. It is, however, a common approach pursued in mature fisheries by most governments around the world because attempts to rationalize fisheries in the short to medium terms are politically sensitive and often difficult to accomplish. Nonetheless, in 1983 the Japanese government relaxed its policy with respect to the transshipment of tuna caught by Japanese purse-seine vessels. Japanese seiners have been permitted to transship fish at Guam, Tinian, and other Asian ports. This relaxation in policy seems to be related in part to the end use of tuna landed by purse seiners vis-à-vis that of long-line vessels. Whereas a significant share of purse-seine product is exported from Japan to canneries in the United States, and more recently Asia (Thailand and the Philippines), long-line caught fish is primarily destined for consumption in Japan. This means that the Japanese government probably has a stronger propriety interest in maintaining prices for long-line fish
products by regulating supply than it does for purse-seine products. The significantly different operational characteristics and cost structures of the two fisheries might also have a bearing on changes in Japanese policy.

Shore-based transshipment facilities to service the tuna fishing industry in the Pacific islands are under consideration, or are actually being constructed, in several countries in the region. In Majuro (Marshall Islands) a wharf and cold storage facility to receive and hold tuna is being constructed at a cost of US$2 million. The facility is being financed by the Japanese government under its fisheries aid program to the country. It will service some 400 tuna vessels mainly of Japanese flag operating in Marshall Islands' waters. The facility will be expanded at a later stage with a view to making Majuro a prominent tuna transshipment base in the region (South Pacific Commission 1985:10).

For several years the government of the Federated States of Micronesia has been considering the establishment of a cold storage and transshipment facility at Dublon Island in Pohnpei. Dublon Island has an excellent wharf capable of handling large ocean-going vessels, which is a prerequisite for the establishment of a transshipment facility. In addition, Dublon Island is optimally situated to service the purse-seine tuna fleets operating in the region. A sum of US$250,000 has been tentatively earmarked for 1986 to fund engineering plans and specifications for the construction of the facility. A proposed US$200,000 will also be invested in 1986 for architectural and engineering plans to upgrade Pohnpei's harbor facilities to service medium to large tuna fishing vessels. US$250,000 will be spent in fiscal year 1987 to refurbish the
former Van Camp transshipment and freezer facility in Palau (Pacific Fisheries Development Foundation 1985:13-18)

In Papua New Guinea a moderately sized transshipment facility of about 3,000 tonnes holding capacity is under consideration for either Manus or Rabaul. This facility will service the purse-seine fleets operating in the country's EEZ. The Fiji government and the country's Chamber of Commerce have also expressed interest in attracting American purse seiners to bases in a Fijian port (South Pacific Commission 1985:9). If such an arrangement materializes, transshipment facilities will probably have to be constructed at the port where the vessels are based.

**Processing Facilities and Marketing**

Governments in the Pacific islands region contemplating the expansion of existing tuna industries or the establishment of new projects are aware of the benefits of vertically integrated industries and the need to achieve reasonable economies of scale to ensure financial viability. The overall effect of establishing vertically integrated industries is to protect financial returns to investors and governments by spreading the different levels of risk. The greatest benefits for Pacific island countries will be achieved when the company undertaking a project catches (utilizing its own vessels or those that it has contracted), processes, and markets its product in a vertically integrated manner. Loss of control over any of these activities, particularly processing and marketing, will render fewer benefits to the company, its stockholders, and, in turn, the government. In terms of risk, tuna fishing constitutes the high cost/risk end of the
industry where financial returns are inherently unstable and sometimes marginal depending on market conditions. Processing and marketing, on the other hand, is the low risk end of the industry with financial returns characteristically high and less volatile.

Governments in three Pacific island countries are currently considering the establishment or expansion of existing tuna processing facilities. These countries are Fiji, Papua New Guinea, and the Solomon Islands.

Fiji is seeking a partner to replace C. Itoh in its joint venture company after 1987. According to press and industry reports, proposals from foreign investors to participate in this project would be favorably entertained by the Fiji government.

Following extensive international advertising in early 1984, the government of Papua New Guinea selected five potential foreign investors to participate in the development of its domestic tuna industry. The investors selected—from the United Kingdom, Denmark, France, Thailand, and the Philippines—are undertaking technical and financial feasibility studies of their proposed projects (South Seas Digest 1985:2). Sites selected for the projects are Manus and Kavieng, both of which are in the New Guinea islands region and close to the country's main tuna fishing grounds.

Expansion of the joint-venture cannery in the Solomon Islands has been planned for some years. The expansion is expected to double the processing capacity of the existing cannery; the expanded facility will have a processing capacity of approximately 10,000 to 12,000 tonnes of tuna.
per year. As part of the expansion program, the cannery will be relocated from its present site at Tulagi (adjacent to Honiara, the nation's capital) to Noro in the Western Solomons. The Tulagi site will not be abandoned completely by the company but will continue to be used as a receiving and cold-storage support facility. The total investment in the cannery's expansion will be US$7.5 million (South Pacific Commission 1985:14). The Solomon Islands government will continue to be an equity partner in the expanded project along with its current Japanese partner, Taiyo.

In addition to the production of canned tuna, consideration might be given by prospective foreign investors to the establishment of processing facilities for the production of tuna loins. While this approach to processing is inconsistent with the concept of vertically integrated industries, it might be possible for loin processors to negotiate long-term sales contracts with end users that guarantee minimum (floor) prices for loins and the purchase of minimum quantities irrespective of market conditions. This approach would offer the producing company some degree of financial security. In the absence of well defined and "water-tight" sales contracts with end users of loins, however, it would be not advisable for governments in the Pacific islands region to promote the production of loins. Once the investment in the production facility had been made, in the case of a market downturn (which will occur periodically) loin producers could find themselves unable to market their product. Operations would then need to be scaled back, resulting in financial loss and income instability.
Production of loins is also currently fraught with technical difficulties. If these difficulties can be satisfactorily overcome, however, processors remaining in high wage countries could derive significant benefits. The principal advantage would be that processors could dispense with the labor intensive and costly activity of preparing fish to the loining stage. The processors could can the prepared loins and possibly be able to continue operating in an internationally competitive manner. Producers of loins in the Pacific islands region, on the other hand, would derive employment and other benefits from producing the loins and could process the tuna offcuts, most of which could be sold domestically.

Opportunities for the expansion of *katsuobushi* and *arabushi* production in the Pacific islands region are limited by the demand in Japan and a knowledge of how and where to market the product. Lack of suitable firewood in some countries for the smoking process also presents a real constraint to expansion. For these reasons opportunities for investment in this processing activity are not considered important. Nonetheless, the *katsuobushi* plant that was operated through the 1970s in the New Ireland Province (Nago Island) of Papua New Guinea is scheduled to be reactivated following the re-establishment of the pole-and-line tuna fishery in the province. This plant, which was mothballed in 1981, has a wet tuna processing capacity of 3,000 tonnes per year.

CONCLUSION

Governments in the Pacific islands region have indicated a strong
desire to encourage investment in the region's tuna industry. A large and commercially proven resource exists and conditions within individual countries are favorable and conducive to foreign investment. What then constrains the development and expansion of the industry in the region?

Several factors can be identified that constrain development, but the principal constraint is essentially the ability of foreign investors and governments, either individually or in combination, to put together bankable projects. Foreign investors clearly require that projects be financially and technically viable before they are prepared to commit funds. Governments also require that this condition be met, although the time requirements for governments in terms of return on investment are likely to differ from those of private investors. In addition to the overriding consideration of viability, tuna projects established in the Pacific islands region should:

1. Be internationally cost and price competitive
2. Produce output of a quality that is acceptable to an international market
3. Provide fair and reasonable financial returns to equity participants
4. Have committed, innovative, competent, and progressive management and marketing expertise capable of promoting efficient, stable, and enduring industries
5. Be consistent with and satisfy to some extent socioeconomic development goals of host governments.
For projects that can satisfy these conditions, securing financing from private and semi-official sources should not be difficult. A range of institutions are eager to finance projects of a developmental and commercial nature in the Pacific islands region if the bankability of these projects is demonstrated.

If it is accepted that the role of government is not normally to be actively involved as an equity participant in commercial ventures, governments (at least as an opening negotiating position) should encourage foreign investors wanting to invest in the tuna industry to initiate and undertake projects without public involvement. However, the nature of the tuna industry, and indeed the fishing industry in general, will often prompt foreign investors to seek government participation in projects as an indication of the government's commitment to the development of the industry. On the other hand, governments will frequently opt for an active role in fishing projects because of the scope for foreign entrepreneurs operating in resource-based industries to engage in unfair trading and pricing practices. Governments sometimes view their direct participation in projects of this nature as a means of reducing the incidence of such practices. In reality, direct government participation probably does little to curb manipulative behavior. Alternative measures to equity participation, which are more efficient and generally less costly, can be exercised by government to monitor pricing and trading practices of foreign entrepreneurs involved in the exploitation of natural resources.

Given that there is common ground between foreign investors and governments (although for different reasons) to be actively involved in
tuna projects, joint-venture arrangements represent the most accommodating solution for all parties. Projects that involve consortia of foreign investors, as opposed to individual investors or companies, enjoy additional advantages. These advantages include a reduced level of risk for each party involved in the project, an increase in expertise available to the project, and a series of checks and balances on the activities of individual investors participating in the project.

Governments in the Pacific islands region are keenly aware that the existence of the region's tuna resource is a sufficient but not a necessary condition to guarantee the existence of an industry. In this respect governments are realistic in terms of what they want, what is achievable, and what is necessary in order to attract good quality foreign investment to the industry and region.

Finally, it is the contention of many industry observers that the Pacific islands region will continue to play an important and increasing role in the international tuna industry. Prudent processors of tuna concerned with long-term security of fish supplies and others who want a stake in the region's industry might be well advised to avail themselves of opportunities that currently exist in the Pacific islands region.
NOTES

1. Conventional tuna processing is a labor-intensive activity and for this reason wage costs are an important component of canned tuna production costs. In 1984 wage rates were US$7-8 per hour in California, US$3 per hour in American Samoa and Puerto Rico, and US$0.37 per hour in Thailand ("Tuna Update," in Pacific Fishing, March 1985:35).

2. At the beginning of 1985 the United States had only one relatively small tuna cannery (Pan Pacific) operating on the mainland. This cannery is located at Terminal Island.

3. According to industry reports tuna landed by Kiribati's fleet is now sold under contract to the Star-Kist cannery in American Samoa and not to the cannery in Fiji.

4. A recent (May 1985) development involves the possible purchase by a local company of the Hawaiian cannery. If this sale eventuates, indications are that its operations will be scaled down and that it will only process tuna landed by Hawaiian-based vessels.

5. A precedent of this type exists in Papua New Guinea with the sale of timber to overseas buyers.

6. The international trade in tuna loins is currently small. If difficulties with respect to preservation of loins can be overcome, the relocation of tuna processing facilities back to the U.S. mainland, for example, might be expected.
REFERENCES

Doulman, David J.

Doulman, David J. and A. Wright
1983 Recent Developments in Papua New Guinea's Tuna Fishery Marine 
Fisheries Review. 45(10,11,12):47-59.

Government of Fiji

Government of Papua New Guinea (National Investment and Development Authority)
No Date National Investment Priorities Schedule. Port Moresby.

Government of the Solomon Islands

Government of Vanuatu

Islands Business

Pacific Fisheries Development Foundation (PFDF)

Ridings, P. J.
Honolulu: Pacific Islands Development Program.

South Pacific Commission

South Pacific Commission

State of Hawaii Department of Planning and Economic Development
1984 Hawaii as a Base for Tuna Purse-Seining Operations, Honolulu 
(mimeo).

U.S. Department of Defense
1984 Economic Development in the Marshall Islands. USDOF, 
Washington, D.C.
THE EAST-WEST CENTER is a public, nonprofit educational institution with an international board of governors. Some 2,000 research fellows, graduate students, and professionals in business and government each year work with the Center's international staff in cooperative study, training, and research. They examine major issues related to population, resources and development, the environment, culture, and communication in Asia, the Pacific, and the United States. The Center was established in 1960 by the United States Congress, which provides principal funding. Support also comes from more than 20 Asian and Pacific governments, as well as private agencies and corporations.

Situated on 21 acres adjacent to the University of Hawaii's Manoa Campus, the Center's facilities include a 300-room office building housing research and administrative offices for an international staff of 250, three residence halls for participants, and a conference center with meeting rooms equipped to provide simultaneous translation and a complete range of audiovisual services.
PACIFIC ISLANDS DEVELOPMENT PROGRAM

The purpose of the Pacific Islands Development Program (PIDP) is to help meet the special development needs of the Pacific Islands region through cooperative research, education, and training. PIDP also serves as the Secretariat for the 1980 Pacific Islands Conference, a heads of government meeting involving leaders from throughout the Pacific region, and for the Pacific Islands Conference Standing Committee, which was established to ensure follow-up on development problems discussed at the Conference.

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.