MARKET STUDY ON THE MEXICAN MARKET AND DISTRIBUTION SYSTEM FOR FISH AND FISH PRODUCTS

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1. BACKGROUND

Mexico has 11,593 kms. of coastlines, a continental shelf of 357,000 square kms. and 2.5 million hectares of continental waters, 13,500 square kms. of coastal lagoons and 2.5 million hectares of inland waters. Within the almost three million square kilometers within the 200 mile Exclusive Economic Zone, Mexico has a potential of over six million tons of various species, of which it has been determined that 3.67 million can be exploited without affecting their evolution. The exploitation of these resources, however, had been small, spontaneous, limited and erratic until recently. It isn't until some 25 years ago, that fishing has become an important economic activity in Mexico. Before that, a relative lack of resources, as well as an insufficient "fishing awareness" had limited the development of this activity. The development of agriculture and industry had been viewed as pillars of Mexico's economic development, while fishing had been considered neither a significant source of food or inputs, nor the motor to an industrialization process in the long run, nor a source of employment and foreign currency. It wasn't until the 1970's, that fishing was viewed differently and began to grow dynamically, generating an increasing primary production, both to cover a growing domestic demand and exports; employment; and an articulation of related activities.

The legal framework for fishing is based on the Mexican Constitution of 1917, which states that the national territory and its waters are the property of the Nation, which has the right to further transfer their dominion to individuals to constitute a private property, although under the modes imposed by the Nation. The Nation also has sovereign rights over the Exclusive Economic Zone which comprises 200 nautical miles from the coast. The first Fishing Law was passed by President Cárdenas in 1925 and it particularly favored cooperatives, for which were reserved the exploitation of certain species. This Law has constantly been revised since and led to the creation of the Secretariat of Fishing (SEPESCA) in 1982. The present fishing production regime was formed between 1925 and 1950, allowing the participation of cooperatives, private firms and independent fishermen, although the capture of abalone, sea lobster, oyster, shrimp, turtle and certain other species are still reserved for cooperatives. Between 1950 and 1970, with the growth in the volume fished, the fishing industry was organized and brought about the diversification of fishing. During the next two decades, increasing financial resources were channeled towards this sector and the number of boats grew substantially.

The volume fished has grown very rapidly in response to the legal changes. Total capture was 3,800 tons in 1922. Eight years later it amounted to 11 thousand tons and in 1940 to 71 thousand tons, of which only 20 tons were for internal consumption. During this year, a significant number of foreign boats operated in Mexico, which, although they represented only 16% of the number of operating boats, accounted for 66% of total fishing volume, which

was disembarked on the Californian coast. The species more commonly captured were tuna (67%), shrimp (7%) and sardine (7%).

By 1965, fishing had changed dramatically: the number of national boats had increased fivefold, to 11,521, as well as their tonnage, and they now accounted for 94% of the 200,000 tons of fish captured. The species fished were shrimp (18%), sardine and mackerel (15%), oysters (12%), algae and sargasso (8%), anchovies (5%) and tuna (3%). The industry had also begun to consolidate, with 67 freezing plants, 32 canners and 31 reducing plants. Per capita consumption of fish had increased to 3 kg. from 0.7 kg. in 1940. By 1980, the number of national boats was 36,041, total capture 1.25 million and 309 plants were operating to transform fish products and per capita consumption was 13kg.

2. ECONOMIC ENVIRONMENT

With the objective of reducing the inflation rate, the Mexican authorities implemented a stabilization program, called the Economic Solidarity Pact in 1988, which features traditional austerity measures, entailing tight fiscal and monetary policies and unorthodox measures, such as price, wage and exchange rate controls. This program has been the cornerstone of Mexico's economic policy over the past four years and has resulted in a drastic reduction of the inflation rate, from an annual rate of 159% in 1987 to 52% in 1988 and 19.7% in 1989. Inflation rebounded to 29.9% in 1990 but the Mexican government aims to achieve a 14% inflation rate in 1991. Along with the objective of consolidating the progress made in price stabilization, Mexico's macroeconomic policy in 1991 aims to reaffirm gradual and sustained economic recuperation, basically by establishing the necessary conditions to encourage national and foreign investment and by stimulating local demand.

After the 1986 recession, Mexico's gross domestic product (GDP) increased a moderate 1.5% in 1987 and an additional 1.4% in 1988. Domestic economic activity recovered for the third consecutive year in 1989 with a growth rate of 3.1% and further 3.9% in 1990 to reach $234 billion (1). With an 81.1 million population, per capita GDP was estimated at $2,874 in 1990. Additionally, manufacturing output grew by 5.2% in 1990 in real terms, private investment and consumption expanded 13.6% and 5.2% respectively and public investment was up 12.8%. During the 1991-1994 period GDP is expected to maintain an average annual growth rate of 2.5%-3%.

In an effort to revitalize and open the Mexican economy, the Mexican Government undertook a series of structural changes, including the accession to the General Agreement on Tariffs and

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1. Note: All values in this report, unless otherwise stated (Mexican pesos, Mex$, Canadian dollars, Cdn$, etc) are quoted in United States dollar equivalents.

Trade (GATT) on August 24, 1986 leading to an extensive trade liberalization process: import permits were eliminated on all but 325 of the total 11,950 tariff items based on the Harmonized System adopted in 1989. Official import prices are no longer applicable, nor the 5% export development tax, and import duties were lowered from a maximum of 100% in 1982 to 20% in January 1988. The weighted average tariff rate in now 10.4%. The automotive and computer industries have also been liberalized, through the elimination of prior import permits, to allow free entry of products in these industries. The approval of the North American free trade agreement will further strengthen trade between Canada, the United States and Mexico.

According to official data from the Mexican Secretariat of Commerce and Industrial Development (SECOFI), Mexico's trade balance in 1990 dropped once again to a $3 billion deficit from -$645 million in 1989. Exports increased by 17.6% in 1990, from $22.8 billion to $26.8 billion, while imports grew 27.2%, from $23.4 billion to $29.8 billion, having already increased 48% from $12.2 billion in 1988 and 23.8% in 1989.

Total Mexican imports from Canada increased 24% in 1989 and decreased 1.5% in 1990. Total Canadian exports to Mexico amounted to Cdn$594 million, while total Canadian imports from Mexico were valued at Cdn$1,730 million in 1990. According to Mexican figures, in 1989, 1.9% of Mexico's imports came from Canada, while 1.2% of its exports were to Canada. This makes Canada Mexico's fifth largest exporter and sixth largest importer.

3. MARKET ASSESSMENT

3.1 APPARENT CONSUMPTION

The following table shows Mexico's total apparent consumption of fish and fish products, including fresh and frozen, prepared or preserved fish, crustaceans and molluscs; fish oils and fats; and fish flours, meals and pellets.

TABLE 1
TOTAL APPARENT CONSUMPTION OF FISH AND FISH PRODUCTS
(000 metric tons)

	1988	1989	1990	1994p
Production	934.6	1,018.6	1,088.1	1,272.9
+ Imports	32.0	50.5	76.7	104.3
- Exports	129.3	121.7	85.8	132.6
TOTAL	**837.3**	**947.4**	**1,079.0**	**1,244.6**

p = projected
Source: Production: Secretaría de Pesca
Imports and exports: Secretaría de Comercio y Fomento Industrial.

Mexico's total apparent consumption of fish, crustaceans, molluscs and their products increased 13% in 1989 and another 14% in 1990, reaching over one million tons. Domestic production by far dominates the Mexican market and exports have until now surpassed imports. Production has increased 8% annually between 1988 and 1990, while the growth in imports was 55% during that same period, prompted mostly by major increases in imports of fish meal. Imports presently represent 7.1% of total apparent consumption, up from 3.8% in 1988. The Mexican market for these products is expected to continue increasing at an average annual rate of 3.5% to reach $1.2 billion by 1994. Local production is projected to grow 4% annually, while imports will grow at a slightly faster pace of 8%, as the purchasing power continues to increase. This will translate into an increased participation of imports in total apparent consumption, from the present 7% to 8% by 1994.

The total Mexican market can further be divided into three sections: fresh products; frozen, canned and otherwise transformed products for human consumption; and fish meals and oils. The following table shows apparent consumption in each of these sectors for 1989 and 1990.

TABLE 2
APPARENT CONSUMPTION BY SECTOR
(000 tons)

	FRESH PRODUCTS		PROCESSED PROD.		OIL & MEALS	
	1989	1990	1989	1990	1989	1990
Production	733.6	779.2	178.1	213.1	106.9	95.8
+ Imports	1.7	1.4	4.7	6.1	44.1	69.2
- Exports	50.5	26.3	70.3	58.3	0.9	1.2
TOTAL	**684.8**	**754.3**	**112.5**	**160.9**	**150.1**	**163.8**

Source: Production: Secretaría de Pesca
Imports and exports: Secretaría de Comercio y Fomento Industrial.

As can be seen in this table, in all three sectors, local production covers the majority of apparent consumption. However, imports play the most significant role in the market segment for fish oil and meals, where they represent 42% of total apparent consumption. In the case of processed products, imports cover 3.8% of the market, while they only represent 0.2% of the market for fresh products.

3.2 IMPORTS

The following two tables list imports by category for the 1988-1990 period in terms of volume and value:

TABLE 3
IMPORTS OF FISH - VOLUME
(000 tons)

	1988	1989	1990
Fresh fish	218.5	1,143.9	682.7
Frozen fish	690.2	457.7	372.4
Fish fillets	305.5	1,509.2	1,921.9
Dried/salted/ smoked/in brine	547.2	908.2	861.1
Crustaceans	111.2	49.7	348.3
Molluscs	991.6	1,250.4	1,271.1
Canned prods.	446.7	1,122.8	2,003.6
Fish oil	1,142.3	3,692.8	39,571.6
Fish meal	27,379.4	40,382.1	29,647.1
TOTAL	**31,832.6**	**50,516.8**	**76,679.8**

Source: Data by SECOFI

TABLE 3
IMPORTS OF FISH - VALUE
($000 dollars)

	1988	1989	1990
Fresh fish	831.0	2,384.5	2,090.1
Frozen fish	1,079.8	1,023.8	1,295.3
Fish fillets	684.7	2,786.0	3,461.3
Dried/salted/ smoked/in brine	2,747.6	3,243.3	4,014.0
Crustaceans	488.6	550.1	716.3
Molluscs	724.1	1,147.8	893.5
Canned prods.	2,006.8	5,764.0	7,316.3
Fish oil	640.8	3,206.2	8,959.7
Fish meal	16,019.9	18,281.5	11,892.1
TOTAL	**25,223.3**	**38,387.2**	**40,638.6**

Source: Data by SECOFI

As noted in the previous section, by far the largest import category is that of fish meal, the market of which has traditionally been complemented by imports, since local

production has been insufficient to cover the growing demand for balanced foods for animals. Fish oil represents the second largest category, followed by canned products. The local canning industry is still concentrated in the processing of tuna and sardine for popular consumption. Other species and luxury products are mostly imported, such as caviar, anchovy, salmon, herring, crab, shrimp and lobster, as well as tuna and sardine. The following table lists the largest import categories in terms of volume and value for 1989.

TABLE 4
SELECTED IMPORT CATEGORIES
(000 tons/$000 dollars)

	VOLUME	VALUE
FRESH FISH		
Hake	657.9	1,756.8
SalmoN	281.4	84.2
Cod	75.1	290.3
Dogfish	46.2	21.9
Flat fish	8.8	50.5
Tuna	18.5	31.7
FROZEN FISH		
Salmon	54.4	269.5
Flat fish	30.1	193.4
Tuna	204.3	265.9
FISH FILLETS		
Fresh	483.8	809.0
Frozen	909.7	1,624.6
FISH DRIED/SALTED/SMOKED/IN BRINE		
Smoked salmon	117.5	433.4
Dried cod	634.8	2,648.6
CRUSTACEANS		
Lobster	8.5	234.8
Shrimp	10.6	140.4
MOLLUSCS		
Squid	1,025.5	557.8
Octopus	159.5	442.3
CANNED PRODUCTS		
Tuna	909.8	2,601.8
Sardines	652.2	1,670.9
Anchovies	89.8	599.3
Caviar & subs.	316.1	291.2
FISH OIL		
Cod liver oil	469.1	254.2
Fish oil	3,085.9	2,880.9

Source: Data by SECOFI

The above list includes those items presently with the largest import volume and value and reflects the best opportunities for foreign suppliers to Mexico, although many products not included

in this list also have a good market potential in Mexico, such as herring, eels, fish liver, trout, mackrel, crab, scallops, mussels and snails.

The principal supplier of fish, crustaceans, molluscs and their products to Mexico is the United States, with an import market share of 52% on fresh and frozen products, and 31% on processed products. According to Mexican statistics, Canada has a 4.2% share of the import market, concentrated in fresh and frozen fish, in particular salmon, cod and hake, smoked salmon, lobster and crab. Other important suppliers to Mexico are Japan (tuna), Portugal (sardine), Norway (dried cod), Spain (canned products), West Germany (oil), Peru (oil) and Chile (flour).

The following table shows Canadian exports of fish, crustaceans, molluscs and their products to Mexico between 1988 and 1990.

TABLE 5
CANADIAN EXPORTS TO MEXICO
(000 tons/ Cdn$000 dollars)

	1988 VALUE	1988 VOLUME	1989 VALUE	1989 VOLUME	1990 VALUE	1990 VOLUME
Fresh fish	689	187	858	245	1	1
Frozen fish	558	152	746	208	13	3
Fish fillets	278	78	326	75	4	1
Salted/smoked	123	19	538	164	111	24
Crustaceans	4	1	11	8	4	1
Molluscs	0	0	0	0	2	0
Canned prods.	1,028	271	86	13	11	2
TOTAL	**2,680**	**708**	**2,565**	**713**	**146**	**32**

Source: Statistics Canada - International Trade Division

Canadian exports to Mexico have decreased from Cdn$2.68 million in 1988 to Cdn$2.56 million in 1989 and further to Cdn$146,000 in 1990. Mexican exports to Canada, on the other hand, have been increasing from Cdn$618,000 in 1988 to Cdn$2.5 million in 1989 and Cdn$3.2 million in 1990. As can be seen in the above table, Canadian exports to Mexico have not been steady during this period, but have fluctuated significantly. This is because Canadian exports have until now been more of a sporadic nature rather than the result of an effort by Canadian exporters to establish a longlasting presence in Mexico by finding a local agent or distributor or by opening offices in Mexico. The upcoming free trade agreement will open new opportunities of trade between both countries, but will also require an increased marketing effort.

3.3 DOMESTIC PRODUCTION

Fishing has been among the country's most dynamic economic sectors since 1977. While total GDP increased at an average annual rate of 4.3% between 1977 and 1990, fishing grew by 13.4% during the same period. The participation of the fishing sector in total GDP has increased from 0.24% in 1977 to the present 0.31%.

The country has officially been segmented into five distinct fishing areas based on their physical and geographical characteristics (see map):
The North-Pacific region (Baja California, Baja California Sur, Sonora, Sinaloa) comprises 53% of Mexico's coasts and is the country's most productive region with 43% of the national fishing potential, and it is the only region fit for the development of sardines, anchovy and tuna, considered high value catches, due to cold water currents. This region generates approximately 67% of the country's total production.
The Center-South-Pacific region (Nayarit, Jalisco, Colima, Michoacán, Guerrero, Oaxaca, Chiapas) has 20% of Mexico's coasts and 10% of the continental platform and represents 37% of the national fishing potential. This region has been orientd mostly to local and national consumption and generates 9% of total production.
The North-Gulf zone (Tamaulipas, Veracruz) has 11% of the fishing potential, mostly of crustaceans and molluscs, and comprises many important lagoon systems. This region is the most important supplier for the national market of popular consumer products and supplies 11% of total production.
The Gulf-Caribbean region (Tabasco, Campeche, Yucatán, Quintana Roo) has 9% of the national potential, although it has over a third of all shrimp species and 40% of molluscs. This region concentrates in the freezing process of shrimp and lobster for export.
The fifth region includes all 14 states without coasts and has a relatively small potential.

The National Fishing Institute determined that, out of the total resources available in Mexico of 6.4 million tons of different species, 3.67 million tons can be ecologically exploited, of which 43% are presently exploited. The following table describes available resources by region.


REPUBLICA MEXICANA
No. 4
PTO PEÑASCO
GUAYMAS
ALVARO OBREGON
TOPOLO BAMPO
MAZATLAN
TAMPICO
ALVARADO
CD DEL CARMEN
SALINA CRUZ
YUCALPETEN
I
II
III
IV
V
REGIONS
I. NORTH PACIFIC
II. CENTER-SOUTH PACIFIC
III. NORTH. GULF
IV. GULF-CARIBBEAN
V. NON COASTAL STATES
SUN RISE

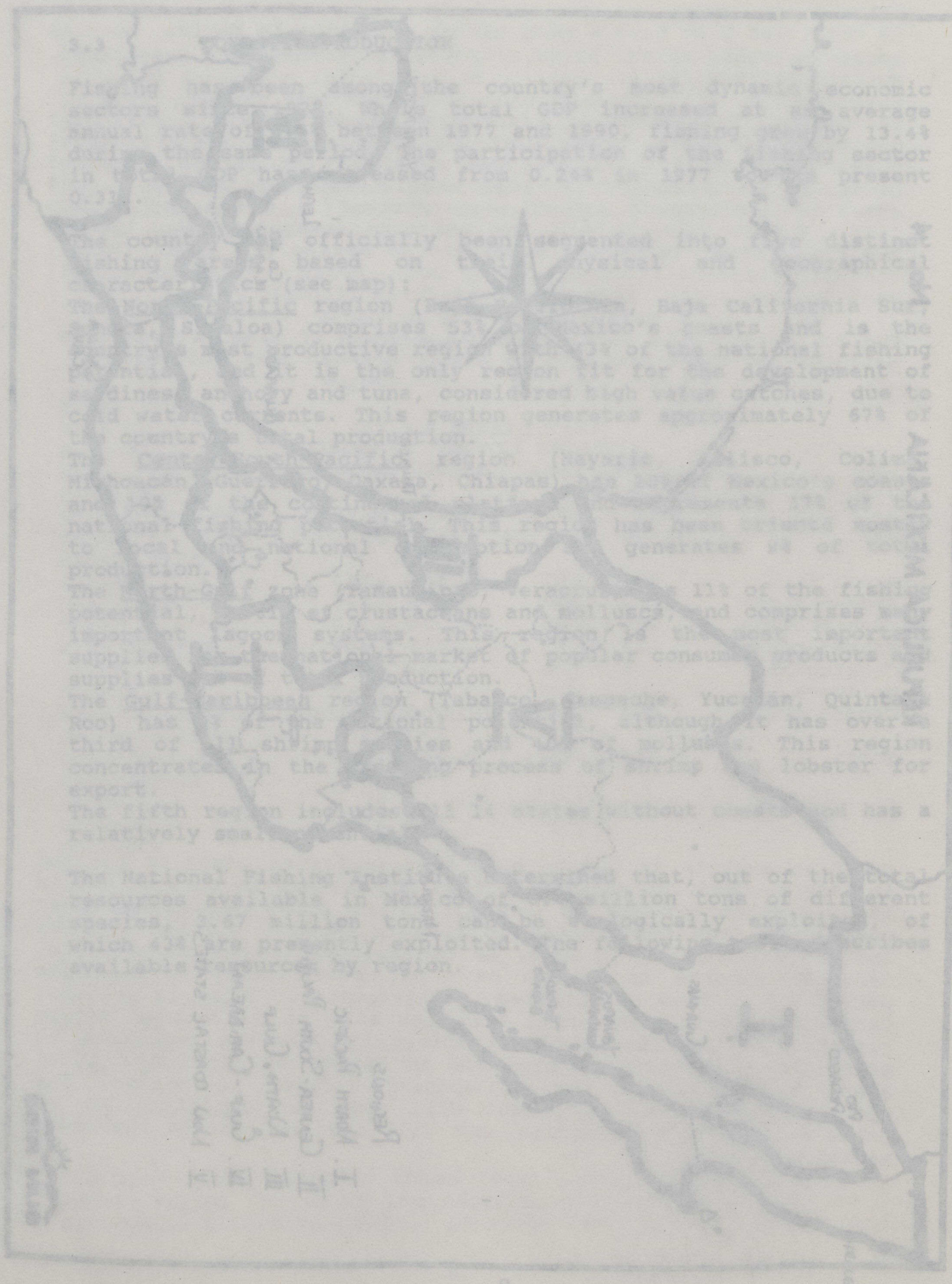

TABLE 6
POTENTIAL FISHING RESOURCES
(000 tons)

RESOURCE	PACIFIC	GULF & CARIBBEAN	TOTAL
Sardine/anchovy	1,010	201	1,211
Tuna	170	63	233
Shrimp	45	43	88
Shark	40	12	52
Accompanying fauna	320	145	465
Algae & sargasso	147	3	150
Crustaceans & molluscs	282	141	423
Scale fish	632	418	1,050
TOTAL	**2,646**	**1,026**	**3,672**

Source: SEPESCA: Programa de Desarrollo México-BID 1987-1989

Three distinct economic sectors are involved in fishing: the private, the social and the public sectors. The private sector accounts for over 50% of total production. The social sector is composed of 1,500 cooperatives as well as associations of fishermen with a total of 100,000 members. The public sector basically includes the Fishing Secretariat (Secretaría de Pesca) and its related agencies, such as regional centers and the Fishing Bank (Banpesca).

A total of 299,300 people are employed in fishing: 164,600 in capture, 77,700 in aquaculture, 24,600 in industrialization, 25,800 in trade and the remaining 6,600 in infrastructure and administration.

The Mexican fleet has been increasing steadily, to reach the present 74,693 vessels, of which 51% are owned by the private sector. The following table shows the number of boats and the fishing sector they operate in.

TABLE 7
FISHING BOATS
(number)

YEAR	TOTAL	SMALL	LARGE			
			Total	Shrimp	Tuna	Sardine
1985	51,903	48,431	3,472	2,554	79	129
1986	58,292	54,956	3,336	2,417	98	125
1987	66,044	62,773	3,271	2,387	85	117
1988	69,631	66,408	3,223	2,337	84	115
1989	73,647	70,398	3,249	2,339	86	115
1990p	74,693	71,406	3,287	2,339	86	115

Source: Secretaría de Pesca p= preliminary

Of the total 74,693 boats presently operating, 96% are small boats, while the large fleet is composed of 2,339 shrimp boats, of which 63% operate in the Pacific and 37% in the Gulf; 86 tuna boats concentrated along the North-Pacific coasts; 115 sardine and anchovy boats; and 696 scale fish units. Of the total 71,406 small vessels, 51% operate in the Pacific region, 45% in the Gulf and 4% in the states with no coasts. The total freight capacity of these vessels is estimated at 306,500 tons: 94,900 tons in small vessels, 116,900 tons in shrimp vessels, 59,600 tons in tuna vessels, 15,500 tons in sardine/anchovy vessels and 19,500 tons in scale fish vessels.

The present fishing port infrastructure consists of 54 fishing ports and 5 port zones, 31 along the Pacific coast and 28 in the Mexican Gulf, with a total dock length of 25,717 meters, of which 12,414 meters are for shrimp, 2,200 meters for tuna, 3,303 meters for sardine, 3,067 meters for other deep sea fishing and 3,236 for coastal fishing. Mexico's largest ports are Ciudad del Carmen, Mazatlán, Guaymas, Lerma, Yucalpetén, Ensenada, Alvarado, Puerto Peñasco, Topolobampo, Paraje Nuevo, Salina Cruz and Yavaros (see map).

Fishing in Mexico is basically done in three distinct modes: coastal fishing, deep sea fishing and aquaculture. Coastal fishing has been the most important source of food and employment for rural communities with a fishing potential. Coastal fishing accounts for some 40% of total production, in particular of a great variety of scale fish, estimated at 270 species, as well as shrimp, lobster, oyster, abalone, clams, crabs and snails. Additionally, sweet water species are estimated at 58, of which mojarras, carps, charales and catfish are the most common. The vessels used in this sector are mostly small, from 3 to 20 meters in length, and powered by oars or motor. This sector has shown a very slow development for different reasons: geographic dispersion of these communities; an insufficient supply of inputs; a lack of productive infrastructure and support; the inexistence of roads to transport production to major consuming centers; excessive intermediaries; insufficient organization and training; lack of technology and of financial resources.

Deep sea fishing includes mostly the capture of shrimp, tuna, sardine, anchovy and scale fish. Shrimp capture has reached a peak along the Pacific coast, but the Gulf and Caribbean regions still have a growth potential, depending mostly on the availability of resources to repair, modernize and increase the existing fleet in these areas. Shrimp production represents 5% of domestic production in terms of volume, but is a major generator of exports. The capture of sardine and anchovy is concentrated in the Northeast area and represents 35% of total national production. Tuna production of 150,000 tons in 1990 represents 9% of total local capture and places Mexico among the eight largest tuna producers in the world. Other species of scale fish have not

yet been exploited in their potential, mostly due to the lack or defficiency of vessels for their capture and to insufficient trade channels. At the same time, their production is not considered as profitable as that of other species.

As was described in the background section, Mexico's production of fish, crustaceans and molluscs and their products has increased dramatically in only two decades, from a total of 273,500 tons in 1970 to the present 1.5 million tons, making Mexico the world's 17th largest producer of fish and crustaceans. Per capita consumption has also increased significantly, to the present 15kg; 8.8kg., or 59%, through direct consumption and 41% through indirect consumption, that is mostly through chicken and pork meat which was fattened with balanced feeds containing fish oils or meals.

The following table shows domestic production in selected years, including aquaculture.

TABLE 8
LOCAL PRODUCTION OF FISH
(000 metric tons)

YEAR	TOTAL	DIRECT HUMAN CONSUMPTION	INDIRECT HUMAN CONSUMPTION	INDUSTRIAL USE
1940	71.5			
1950	188.6			
1960	206.4			
1970	273.5			
1975	535.8	339.1	150.6	46.1
1980	1,257.1	634.5	586.1	36.5
1981	1,565.5	913.3	621.0	31.2
1983	1,075.5	662.8	400.3	12.4
1985	1,255.9	836.7	378.9	40.3
1986	1,357.0	816.8	489.9	50.3
1987	1,464.8	897.4	519.6	47.8
1988	1,394.2	906.8	456.6	30.8
1989	1,517.3	932.9	526.4	58.0
1990e	1,580.9	1,072.8	443.8	64.3

Source: Secretaría de Pesca
p = preliminary

Mexico's production for direct human consumption by species has been as follows:

TABLE 9
PRODUCTION FOR DIRECT HUMAN CONSUMPTION OF PRINCIPAL SPECIES
(000 tons)

YEAR	TUNA	SARDINE	MOJARRA	SHRIMP	OYSTER	CARP
1985	98.1	157.8	67.0	74.6	42.7	16.5
1986	107.4	110.5	75.0	73.2	42.4	20.9
1987	116.4	123.8	86.7	83.9	50.7	26.2
1988	133.8	107.5	87.0	73.2	56.1	27.1
1989	148.0	111.4	85.2	74.8	56.3	22.6
1990p	138.3	127.5	95.7	62.3	51.3	27.7

Source: Secretaría de Pesca
p= preliminary

During the next four years, the production of tuna, shark, scale fish, crustaceans, molluscs and calamare, as well as algae and sargasso is expected to continue increasing. On the other hand, the production of sardine, anchovy and shrimp is expected to maintain present levels, since it has basically reached its potential. Per capita consumption is projected to reach 20kg. by 1994.

Aquaculture has experienced major increases in the past 25 years, but has grown particularly since the 1970's. The infrastructure for aquaculture has been increasing gradually. At present, aquaculture is developed in over 1,000 major dams, in 2,311 farms and a series of dykes throughout the country. Aquaculture farms represent over 9,000 hectares of ponds and use 35,000 cubic meters of fast current channels and cages. Sinaloa concentrates 62% of ponds and the state of Mexico has 41% of all channels and cages. The largest aquaculture production comes from the Gulf-Caribbean region, which accounts for 50% of the total aquaculture production. There are 39 aquaculture centers for breeding and the production of seed and postlarvae. The present production in these centers is of 8,000 seed of molluscs, 176,400 offspring and 165 million offspring sown. Some 470,000 hectares have been identified as fit for aquaculture development, in particular for shrimp, mussels, oysters and abalone. For shrimp production, there are at present 75 farms with close to 8,000 hectares. Aquaculture presently represents 12% of total production, or 187,000 tons, generates 5% of total foreign income and 24% of employment in this area. Total aquaculture production is shown in the folowing table.

TABLE 10
AQUACULTURE PRODUCTION
(000 metric tons)

YEAR	TOTAL	SWEET WATER SPECIES	CRUSTA-CEANS	MOLLUSCS	AQUATIC ANIMALS
1985	133.3	84.3	3.4	43.5	2.1
1986	151.1	102.3	3.1	43.6	2.1
1987	174.4	117.5	3.5	51.1	2.3
1988	184.3	121.3	4.2	56.6	2.2
1989	174.3	112.9	2.4	56.8	2.2
1990p	190.1	129.8	6.3	51.8	2.2

Source: Secretaría de Pesca
p= preliminary

Among sweet water fish, the most important species is mojarra, with a total production of 86,520 tons in 1990, followed by 23,510 tons of carp and 8,067 tons of charales (small fish). The remaining 6% corresponds mainly to catfish, trout and sea bass. Some 80% of crustacean production corresponds to shrimp, while the remainder is of scampi. Of total mollusc production, 52,528 tons corresponds to oysters with minimal production of clams and callo de hacha. Aquatic animal production includes frogs, turtles, fleas and worms.

Aquaculture is expected to increase significantly in the next four years, since it has been given top priority by the present administration as both a source of food and employment. The species most developped will be shrimp, oyster, abalone and clams for export and catfish, trout and mojarra for internal consumption.

There are at present 411 industrial plants for the transformation of fish, crustaceans and related products, 76% of which are privately owned, 15% is owned by cooperatives and 9% by the public sector. Of the total number of existing plants, only 331 are presently operating, with a total capacity of 988 tons per hour. Of these plants, 237 are for freezing (132 tons/hr.), 40 for canning (330 tons/hr.) and 41 for reducing, or producing fish meal and oils (526 tons/hr). The freezing industry is located basically along the Pacific and Gulf coasts, close to the producing centers. The meal and oil producing industry is based mostly on the processing of sardine and anchovy and therefore located in the Gulf of California and the North Pacific respectively. The sardine canning firms are located along the Pacific coast, the Baja California peninsula and the states of Sonora and Sinaloa. The tuna processing plants are on the coasts of the Baja California peninsula, in the states of Sinaloa and Baja California Sur.

The following table shows industrial production of fish products by process.

TABLE 11
INDUSTRIAL PRODUCTION
(000 tons)

YEAR	TOTAL RAW MAT. PROCESSED	TOTAL PRODUC-TION	FREEZING	CANNING	REDUCING	OTHER
1985	703.2	253.4	102.7	60.8	88.2	1.7
1986	717.5	257.9	99.1	59.7	97.7	1.4
1987	754.8	265.0	103.6	55.8	104.3	1.3
1988	703.9	257.1	101.3	59.4	94.7	1.7
1989	783.7	285.0	106.2	70.4	106.9	1.5
1990p	801.6	308.8	128.8	82.3	95.8	1.9

Source: Secretaría de Pesca
p= preliminary

The Mexican industrial plant is presently subject to a series of problems and defficiencies: The installed firms are located mostly along the North-Pacific region, although there is the potential for its development in other areas; there has been a longlasting lack of financial resources to install, operate, repair and modernize the plants; the existing plants have not been utilized in their capacity due to obsolete infrastructure and machinery; raw material supply has not been constant and/or sufficient, either because it is exported directly due to the structure in relative prices, which favors exports rather than local transformation, or because it is used in the preparation of fish meal; services and utilities have been insufficient, in particular water, electricity, unloading systems, transportation and communications.

Industrial processing of fish and crustaceans is expected to increase significantly in the next four years, in particular freezing and canning of sardine, tuna, scale fish and aquaculture species. The production of fish meal and oil is not expected to grow significantly.

Mexico's exports have traditionally been concentrated in a small number of species, in particular shrimp, which represented 94% of the total volume of crustaceans exported in 1989, or 25.8 million tons, and 70% of the total export value of $481 million. Tuna is the second most important species exported, representing 57% of total volume and 12% of value. Algae and sargasso account for 22% of volume and 4% of value. Lobster and abalone have also been important income generators, representing each 3% of total export value.

TABLE 12
MEXICAN EXPORTS
(000 tons)

	1988	1989	1990
Fresh fish	11,842	15,288	9,909
Frozen fish	72,322	62,530	51,031
Fillets	1,178	916	1,022
Prepared fish	278	749	233
Crustaceans	29,337	27,446	13,910
Molluscs	9,750	10,982	6,717
Canned products	3,399	2,923	1,772
Fish oil	463	519	540
Fish meal	698	363	672
TOTAL	**129,267**	**121,716**	**85,806**

Source: Based on data published by Secretaría de Comercio y Crédito Público

4. DISTRIBUTION

Mexico's infrastructure for the commercialization of fish, crustaceans and molluscs is highly concentrated along the coasts and in Mexico's large cities. The coastal states, which have 44% of the country's population, consume 60% of Mexico's total production, while the remaining 56% of the country's population only consumes 40% of production.

The national supply of fresh fish has increased from 475,000 tons in 1979 to 747,000 tons in 1989. The largest volume of fish consumed is fresh, representing 62% of total commercialization, that is, fish is either consumed directly by the producer or goes directly from the producing agent through a series of intermediaries to the consumer. This has limited the possibility of supplying markets located within distance of the largest population centers, since refrigerated trucks and facilities are scarce. Domestic supply is therefore concentrated in the country's four largest cities: Mexico, which consumes 30% of total fresh fish, Guadalajara, Monterrey and Puebla. The commercial infrastructure, comprising refrigeration chambers, cold nets and the gathering and distribution centers is also concentrated in these cities.

The distribution system for fish, crustaceans and molluscs is described in the following chart:

Fish Crustaceans & Molluscs

Small producer

COOPERATIVES OR PRIVATE COMPANIES (producers)

Introductor

WHOLESALE (major consumer centers)

RETAIL

Fish shops	Public markets	Ambulant markets	Supermarkets	Hotels & restaurants

CONSUMER

The producer is usually either a cooperative, in particular in the case of species reserved to cooperatives, or a private or semi-private company. The small producers sells their product to either of these larges producers. An introductor commonly brings the product into the large markets, in particular Mexico City, Monterrey, Guadalajara, Tijuana, Acapulco and León. There are closed monopolies of introductors by market and either fish or crustaceans and molluscs (referred to as "mariscos" in Mexico). The wholesalers at the large distribution markets control the sale of fish, basically to retail outlets, but also to hotels and restaurants.

The largest market for fish is the "Centro Distribuidor de Pescados y Mariscos la Viga", located in Mexico City, where introductors and wholesalers control the price, volume and quality of products. The total volume of fish, crustaceans and molluscs entering the la Viga market is estimated at some 100,000 tons per year, divided into the following categories: fresh and frozen fish 48%, crustaceans 5%, molluscs 25%, canned products 20%, other 2%. The la Viga market suppliers are expected to be moved completely to Mexico City's "Central de Abastos" or supply center within one year approximately. The area reserved to sales of fish is presently under construction. The commercialization of fresh products in other urban markets has similar characteristics to those found in Mexico City. There usually is one large distribution center in each large city, which controls most of the volume sold. As a matter of fact, many of the la Viga wholesalers have branches in other cities.

There is at present an oligopolic concentration of the wholesale market. There are many barriers to its access, making products unnecessarily expensive and uncompetitive. At the same time, wholesalers have a very strong control over the producers themselves, since they set the terms of commercialization. Most of the retail is also controlled by the wholesalers. Following is a list of prices as of August 16,1991, from a major wholesaler (Alimentos Sanimex), who sells both local and imported products basically to hotel and restaurants.

M A R I S C O S

Clave	Producto		Precio	Unidad
[illegible]	Abulon	$	129,[illegible].00	kilo
[illegible]	Acamaya	$	14,[illegible].00	"
[illegible]	Almeja Blanca Chirla	$	3,500.00	"
[illegible]	Almeja Blanca Veracruz	$	50,000.00	"
[illegible]	Almeja Rey o Mandinga	$	8,400.00	"
[illegible]	Almeja Viva	$	[illegible],750.00	"
[illegible]	Ancas de Rana	$	26,250.00	"
[illegible]	Angula de Aguinaga IVA 20%	$	600,000.00	"
[illegible]	Calamar Gigante	$	2,500.00	"
[illegible]	Calamar Chipiron	$	3,500.00	"
[illegible]	Calamar Americano	$	5,000.00	"
[illegible]	Calamar en Filete	$	6,000.00	"
[illegible]	Camaron Jumbo U-10	$	112,500.00	"
[illegible]	Camaron Jumbo U-12	$	102,000.00	"
[illegible]	Camaron Gigante U-15	$	97,500.00	"
[illegible]	Camaron Grande 16-20	$	62,500.00	"
[illegible]	Camaron Grande 21-25	$	58,500.00	"
[illegible]	Camaron Mediano 26-30	$	55,500.00	"
[illegible]	Camaron Mediano 31-40	$	44,000.00	"
[illegible]	Camaron Chico 41-50	$	35,000.00	"
[illegible]	Camaron Chico 51-60	$	32,000.00	"
[illegible]	Camaron Broken Grande	$	30,000.00	"
[illegible]	Camaron Broken Chico	$	27,000.00	"
[illegible]	Camaron Pelado y Cocido	$	36,000.00	"
[illegible]	Camaron Pelado y Cocido Pacotilla	$	36,000.00	"
026	Camaron con Cabeza Cocido (Natural)	$	41,000.00	"
027	Camaron con Cabeza Crudo	$	35,000.00	"
[illegible]	Camaron con Cabeza Seco	$	27,500.00	"
[illegible]	Cangrejo Moro (Manos)	$	31,250.00	"
[illegible]	Cangrejo Moro (Manos Jumbo)	$	36,000.00	"
[illegible]	Callo de almeja de California	$	36,250.00	"
[illegible]	Callo de Hacha	$	60,000.00	"
[illegible]	Cola de Langosta (Cruda)	$	99,000.00	"
[illegible]	Concha de Jaiba	$	250.00	Pza.
035	Caracol	$	20,000.00	kilo
036	Caracol en Filete	$	34,000.00	"
[illegible]	Jaiba	$	7,500.00	"
[illegible]	Langosta Roja	$	65,000.00	"
[illegible]	Langosta California	$	0.00	"
[illegible]	Langosta Cruda	$	45,000.00	"
[illegible]	Langostino Macho	$	37,000.00	"
[illegible]	Langostino Hembra	$	37,000.00	"
[illegible]	Mejillon	$	17,000.00	"
[illegible]	Ostion Suelto en Tubo Inviolable	$	2,500.00	Pza.
[illegible]	Ostion Suelto en Frasco	$	6,750.00	"
[illegible]	Ostion en Concha	$	500.00	"
A47	Ostion en Concha Grande	$	875.00	"
A48	Ostion en Bolsa Chica	$	43,800.00	"
A49	Ostion en Bolsa Grande	$	56,300.00	"
A50	Pulpo	$	18,200.00	kilo
[illegible]	Pulpa de Jaiba Fresca	$	27,500.00	"
052	Tintas de Pulpo	$	9,500.00	"

P E S C A D O

Clave	Producto		Precio
B01	Atun	$	[illegible],500.0
B02	Bacalao Noruego	$	25,[illegible]
B03	Bacalao del Pais	$	45,000.0
B04	[illegible]	$	75,[illegible]
B05	Cabeza [illegible] y Retazo	$	[illegible],500.0
B06	Charal Fresco	$	15,000.0
B07	Charal Frito	$	11,000.0
B08	Charal Seco	$	4,[illegible]
B09	Filete de Cazon Fresco	$	14,500.0
B10	Filete de Cazon Congelado	$	12,500.0
B11	Filete de Huachinango	$	40,000.0
B12	Filete de Lenguado	$	15,000.0
B13	Filete de Mero Congelado Chico	$	14,000.0
B14	Filete de Mero Congelado Grande	$	15,000.0
B15	Filete de Mero Fresco	$	42,000.0
B16	Filete Fresco [illegible]	$	42,[illegible]
B17	Filete Fresco Kosher	$	25,100.0
B18	Filete de Mojarra	$	14,000.0
B19	Filete de Pampano	$	25,000.0
B20	Filete de Robalo	$	42,000.0
B21	Filete de Sierra Fresco	$	17,650.0
B22	Filete de Sierra Congelado	$	14,000.0
B23	Huachinango Natural Grande	$	16,200.0
B24	Huachinango Limpio Grande	$	20,000.0
B25	Huachinango Racion Natural	$	16,600.0
B26	Huachinango Racion Limpio	$	23,250.0
B27	Hueva de Lisa Fresca	$	52,500.0
B28	Lenguado del Pais	$	0.0
B29	Merluza	$	10,400.0
B30	Mojarra Natural	$	8,[illegible]
B31	Mojarra Limpia	$	9,200.0
B32	Pampano	$	20,000.0
B33	Rebanada Atun	$	11,750.0
B34	Rebanada Huachinango	$	29,[illegible]
B35	Rebanada Mero	$	19,650.0
B36	Rebanada Mojarra	$	[illegible]
B37	Rebanada Robalo	$	35,500.0
B38	Rebanada Sierra	$	15,500.0
B39	Robalo Natural	$	41,000.0
B40	Robalo Limpio	$	42,500.0
B41	Robalito Racion	$	15,000.0
B42	Sardinas del Pais	$	0.0
B43	Sierra	$	7,500.0
B44	Trucha de Mar Natural	$	5,000.0
B45	Trucha de Mar Limpia	$	5,550.0
B46	Trucha Arco Iris	$	10,750.0
B47	FILETE DE WHITING (MERLUZA)	$	0.0
B48	Trucha Asalmonada	$	18,750.0

E S P E C I A L I D A D E S

Clave	Producto		Precio	Unidad
C01	Hueva de Lisa Ahumada	$	68,000.00	kilo
C02	Sierra Ahumada	$	16,000.00	"
C03	Trucha Ahumada Arco Iris	$	29,750.00	"
C04	Calamar Portugues	$	8,000.00	"
C05	Calamar Portugues en Filete	$	11,000.00	"
C06	Lenguado de Dinamarca	$	75,000.00	"
C07	Sardina Portuguesa	$	7,500.00	"
C08	Pata Cangrejo de Alaska KING CRAB	$	130,000.00	
D01	Pizza Queso-Pepperoni Caja 12/.751 gs.	$	192,000.00	Pza.
D02	Arenque Entero x Kilo	$	20,000.00	kilo
D03	Arenque Entero x Barril	$	1,700,000.00	Pza.
D04	Arenque Marinado Lata Filete 10 lbs	$	120,000.00	"
D05	Arenque Marinado Lata Filete 50 lbs	$	475,000.00	"
D06	Arenque Marinado Lata Filete 1 kg	$	26,000.00	kilo
D07	Arenque Marinado Frasco Filete 12/12oz.	$	150,000.00	Caja
D08	Arenque Marinado Frasco Rebanada 12/12oz	$	140,000.00	"
D09	Arenque Marinado Frasco Filete 6/2lbs	$	150,000.00	
D10	Arenque con Crema Frascos Filete 12/12oz	$	145,000	
D11	Camaron (Pulpa 1a)bolsa 2.5 lbs	$	55,000	
D12	Camaron (Pulpa 1a)caja 12/12oz	$	140,000	
D13	Cangrejo Alaska(Pulpa 1a)bolsa 2.5lbs	$	30,000	
D14	Cangrejo Alaska (Cocktail) 2.5 lbs	$	25,000	
D15	Cangrejo Alaska(Pulpa 1a)caja 12/12oz.	$	135,000	
D16	Caviar (Hueva de White F.)Frascos 12/2oz	$	165,000	
D17	Caviar de Salmon Frascos 12/2oz	$	310,000	
D18	Langosta (Pulpa 1a)caja 12/6oz.	$	115,000	
D19	Salmon Ahumado Lonja IVA 20%	$	115,000	
D20	Salmon Ahumado Fileteado IVA 20%	$	135,000	
D21	Salmon Ahumado Charola 2 lbs IVA 20%	$	200,000	
D22	Salmon Ahumado Charola 5 lbs IVA 20%	$	335,000	
D23	Salmon Ahumado en Lata 3 lbs IVA 20%	$	145,000	
D24	Salmon Ahumado Frascos 12/7oz IVA 20%	$	215,000	
D25	Salmon Ahumado en Caja 12/3oz IVA 20%	$	165,000	
D26	Salmon Fresco	$	35,000	
D27	Shad Ahumado Frascos 6/1 lb	$	95,000	

The most common presentation for direct human consumption species beside fresh, is canned for tuna and sardine, frozen for scale fish and shrimp, and only occasionally salted or smoked in other species. In the case of sardine and anchovy, 35% was used in reduction processes to produce fish meal for balanced foods. Canned products are mostly sold in non coastal states, in particular in Mexico City. Canned products are in their great majority sold through supermarket chains and smaller retail stores. Frozen products are mostly exported, since the local consumer favors fresh products, and also distributed through supermarkets. Imported products now entering the Mexican market offer a variety of new presentations: canned, vacuum packed, dried-salted and smoked.

Sales in Mexico of imported products are usually made through local agents and distributors, normally operating on a commission basis. The following diagram illustrates the distribution of imported products:

EXPORTER

LOCAL AGENT OR DISTRIBUTOR

WHOLESALERS SUPERMARKETS HOTELS & RESTAURANTS

CONSUMER

The local distributor basically markets the imported product through three channels: la Viga wholesalers, supermarket chains and hotels and restaurants. Most buyers favor dealing with an agent or distributor rather than directly with the foreign exporter, since this provides them with a responsible party in Mexico for any problems in delivery and quality. (See list of distributors at the end.) Some hotels and restaurants, as well as large specialized stores often import directly. An alternative would be for the foreign company to establish a direct presence in Mexico, through local offices. This, however, is a more risky undertaking and also a more expensive one, since it requires having a sales force in Mexico in addition to the office staff. In any case, a decision should be taken on whether to use an agent, joint venturing or licensing with a Mexican company. Mexico's market is highly competitive and companies which maintain an active presence in the market and establish a good track record by virtue of competitive price, trustworthy supply and service will do well.

5. MARKET ACCESS

As a result of Mexico's accession to GATT, the Mexican Government has gradually opened the economy to international suppliers. Import duties have been lowered from a maximum 100% in 1983, to 20% since December, 1988. The official import price system has

been totally eliminated and import permits are required on only 325 of the total 11,950 items in the Mexican Tariff Act, only one of which correspond to this industry (lobster). Mexico adopted the Harmonized System of Tariff Nomenclature on July 1, 1988.

Imports of fresh and frozen fish, crustaceans, molluscs and their products are subject to a 20% ad valorem duty assessed on the F.O.B. invoice value. Canned products pay a 20% duty, fish oils 10% and flours and meals 15%. In addition, a 0.8% customs processing fee is assessed on the invoice value. The 15% value added tax assessed on the cumulative value of invoice plus the above taxes is waived in the case of fresh and frozen products. All imported products within this study require a special permit from the Secretariat of Health (Secretaría de Salud) and fresh and frozen products additionally require a permit from the Fishing Secretariat (Secreatría de Pesca). The documents needed to obtain this import permit are a letter from the exporter naming a representative in Mexico for the product, the formula of the product on the exporter's letterhead, a physical, chemical and microbiological analysis of the product, a certificate of origin and a certificate of free sale (thet the product is sold in the country of origin), the packaging description, including the original label and the label for distribution in Mexico.

The Secretariat of Health is in the process of issuing new regulations superseding previous ones, which should basically simplify the importation of fish and fish products through the elimination of the SSA registration number. Additionally, it seems the prior import permit presently required on lobster will be eliminated in the near future.

There are no official metric requirements applicable to imports into Mexico, However, since the metric system of units is by law the official standard of weights and measures in Mexico, importers will usually require metric labeling for packaged goods, although the English system is also used. Dual labeling is acceptable. Imported products should be labeled in Spanish containing the following information: name of the product, trade name and address of the manufacturer, net contents, serial number of equipment, date of manufacture, electrical specifications, precautionary information on dangerous products, instructions for use, handling and/or product conservation and mandatory standards. Mexico adheres to the International System of Units (SI). Electrical standards are the same as in Canada. Electric power is 60 cycles with normal voltage being 110, 220 and 400. Three phase and single phase 230 volt current is also available.

Prepared by:
Caroline Verut
for the Canadian Embassy
Mexico City
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LABELING REQUIREMENTS FOR IMPORTED PROCESSED FOOD PRODUCTOS AND BEVERAGES

A company proposing to export processed food products and beverages to Mexico must first find and legally appoint and register with the Secretaria de Hacienda y Crédito Público (SHCP) a Mexican company as its representative for the import of such products into Mexico. In turn, the Mexican importer/agent must register the proposed product with the Secretariat de Salud (SSA). If SSA is satisfied, the product complies with Mexican food safety laws and SSA registration number is issued for which there is a registration fee of US$225. In addition to the fee, to obtain registration, the following information must be provided:

- A certificate, issued by the Canadian Federal (or a provincial) Department of Health stating that the product could or is being sold in Canada. The certificate must be written in Spanish, notarized and consularized by one of the Mexican consulates in Canada.

- A physio-chemical analysis of the product conducted by a federal or provincial Department of Health laboratory or authorized laboratory. Again analysis results must be in Spanish and consularized by a Mexican consulate.

- A step by step technical description of the production of the product, in Spanish, and consularized.

- A description, in Spanish of the primary (and any secondary) packaging or container specifying materials, form, sealing material and capacity.

- Copies of the product label and color photographs of the product.

SSA also requires that a small (approx 1 1/2 by 1 1/2 inch or larger) label be affixed to each product. This "back label" (which also must be submitted for approval to SSA to obtain a registration number) is required to provide at least the following information (in Spanish): brand name and generic name of product, SSA registration number, importers name and address and SHCP taxation number, name and address of exporter, net content in grams or liters and origin of product.

Although not apparently obligatory, some products such as Dare cookies of Kitchener, Ont. also indicate ingredients and point of customs entry on back label. Should note in this regard that the labeling requirements, chemical analysis, "food safety law", etc., all lack transparency and can be subject to arbitrary decisions and discretion at various levels of the registration process.

The Director of Quality Certification in SECOFI (Secretariat of Industry and Commerce) has advised us that there are no can size requirements with respect to imported processed food products or beverages.