United States Department of the Interior, J. A. Krug, Secretary
Fish and Wildlife Service, Albert M. Day, Director

---

Fishery Leaflet 266

Washington 25, D. C. September 1947

# FISHERIES OF URUGUAY

By Alfredo Comelli and DeWitt L. Stora*



---

Contents

---



## Background.

### a. Economic importance of the fishing industry in the economy of the country or region: social and political aspects.

Uruguay has always based its national economy on livestock and agricultural produce, activities which constitute 95 per cent of all Uruguayan exports and which utilize 83 per cent of the country's arable or pasture lands. This does not imply that Uruguay is totally lacking in other sources of natural wealth. Several other resources, not the least of which is fishing, are open to possible exploitation.

The fishing industry in Uruguay, however, is not yet an important factor in the country's economy. In technological development, the industry is still in the elementary stages, although recent renewed activity on the part of SOYP (Servicio Oceanografico y de Pesca) may lead to modernization and subsequent improvement.

The potential importance of the fishing industry does not depend upon a reorientation of the eating habits of the populace, which at present greatly prefers meat to fish, but upon the export possibilities. The exportation of shark livers and other products necessary to the pharmaceutical industry, especially in the preparation of vitamin extracts, is believed to offer the most attractive commercial incentives. Of secondary importance is the more remote possibility of an industry which would process fish for export purposes. Trade

---

*Clerk and Third Secretary, respectively, at American Embassy, Montevideo, Uruguay. Report No. 92, April 30, 1947.

United States Department of the Interior, J. A. Krug, Secretary
Fish and Wildlife Service, Albert M. Day, Director

---

Fishery Leaflet 266

Washington 25, D. C. September 1947

# FISHERIES OF URUGUAY

By Alfredo Comelli and DeWitt L. Stora*



---

Contents

---



## Background.

### a. Economic importance of the fishing industry in the economy of the country or region: social and political aspects.

Uruguay has always based its national economy on livestock and agricultural produce, activities which constitute 95 per cent of all Uruguayan exports and which utilize 83 per cent of the country's arable or pasture lands. This does not imply that Uruguay is totally lacking in other sources of natural wealth. Several other resources, not the least of which is fishing, are open to possible exploitation.

The fishing industry in Uruguay, however, is not yet an important factor in the country's economy. In technological development, the industry is still in the elementary stages, although recent renewed activity on the part of SOYP (Servicio Oceanografico y de Pesca) may lead to modernization and subsequent improvement.

The potential importance of the fishing industry does not depend upon a reorientation of the eating habits of the populace, which at present greatly prefers meat to fish, but upon the export possibilities. The exportation of shark livers and other products necessary to the pharmaceutical industry, especially in the preparation of vitamin extracts, is believed to offer the most attractive commercial incentives. Of secondary importance is the more remote possibility of an industry which would process fish for export purposes. Trade

*Clerk and Third Secretary, respectively, at American Embassy, Montevideo, Uruguay. Report No. 92, April 30, 1947.

sources are of the opinion that the scarcity of tin plate in Uruguay would prevent the successful establishment of fish-canning plants.

While the present per capita consumption of fish in Uruguay is low, some authorities believe that a systematic campaign aimed at altering the people's taste could increase consumption to roughly 20,000 metric tons annually. The benefits, in the form of increased meat exports, would be considerable. It is estimated that exports of meat would be increased by 5,000,000 pesos annually and that the Bank of the Republic would profit to the extent of 1,000,000 pesos per year through exchange transactions. Advocates of this plan also point out that freeing more meat for the foreign market would aid both the Frigorifico Nacional and the Bnak of the Republic, which now jointly meet the deficit incurred by supplying meat to the city of Montevideo.

Proper exploitation of the Uruguayan fishing waters, therefore, offers the country and its industrialists many rewards.

b. History of the development of the fishing industry with special notes on wartime developments, if pertinent.

The history of the development of the fishing industry in Uruguay is very brief, for it was not until very recently that it held a place of any importance in the commercial and industrial life of the country. For many years the industry was left to individuals who, using the most primitive methods, caught, sold and distributed fresh fish to the public. Their activities could hardly be termed well-organized or highly-developed commercially. In the last four years the industry has gained in importance with the establishment in Montevideo of certain private concerns which operate a more modern system of fishing and distribution and whose success is a proof of the great latent possibilities of the industry. Another very important factor in the growth of this industry is the attitude of the Uruguayan government, which, through the SOYP, is doing all it can to encourage the consumption of fish and which, when the SOYP is reorganized, will not only conduct a campaign to persuade the Uruguayan people to eat more fish, but will endeavour to utilize the by-products. Fishing as a sport has become increasingly popular during the last few years, there being many clubs which organize competitions and excursions for their members.

The fishing industry, because of the unimportant position it occupied in the Uruguayan economy, suffered little during the war and was able to maintain its normal limited supply and manufacture.

Location.

a. Principal ports or districts.

The following are the principal ports and districts of the fishing industry in Uruguay:

| | |
|---|---|
| Montevideo | Salto |
| Punta del Este | Paysandú |
| La Paloma | Santiago Vázquez |
| Cabo Polonio | Nueva Palmira |
| Piriápolis | Colonia |
| Carnelo | |

b. Fishing grounds. The most prolific areas are relatively close to shore in waters less than 200 fathoms.

c. Fresh water fisheries in rivers and lakes.

Apart from the important fishing regions of the River Plate and the Atlantic, i.e. the ports of Montevideo, Piriápolis, Punta del Este, La Paloma, Cabo Polonio and Colonia, there are less important fresh-water fishing areas such as Salto, Paysandú, Santiago Vázquez, Nueva Palmira and Carmelo. In the south-east region there are seven lakes covering a total surface of from 45 to 55 thousand hectares, to which may ultimately be added the lake formed by the Río Negro dam at Rincón del Bonete, of which it is estimated that approximately 100,000 hectares are suitable for fishing. The latter is not exploited at present, however,

Employment.

a. Number of workers.

It is believed that some 600 men are engaged in the fishing trade, as fishermen, processors and distributors.

b. Wages received.

The average salary received by workers employed by organized firms in the fishing trade is estimated at 120 pesos (1) per month. Those who work independently may earn somewhat more.

c. Hours of labor and working conditions.

Workers have an eight-hour day, with overtime. Working conditions for the men employed in the fishing trade are precarious, owing to the lack of modern installations. All present equipment, including that used by the SOYP, is badly in need of repair.

d. Subsistence fishing and angling for sport.

Chapter 1, sections a and b, of this report deal with the above.

Fishing Vessels.

a. Number of vessels.

b. Type and size.

c. Power employed.

d. Adequacy of existing vessels and gear to meet demands of industry.

The number of vessels at present engaged in fishing is estimated at 29, the only ones worthy of mention being those belonging to the SOYP, as follows: One steel trawler, the "Antares", of 267 metric tons' displacement, 38 meters in length, coal burning, carrying a crew of 18 men, with refrigerated storage space, purchased in 1938 in England for 100,000 pesos;

(1) Current rate of exchange: U$S 100 equal 178.50 pesos

A second trawler, the "Aldebaran", of 339 metric tons' displacement, 43 meters in length and at present without refrigeration facilities, in bad repair and not in active use, purchased in 1914 for 40,000 pesos from Argentina, built in Great Britain;

One tugboat, the "Altair", of 33 metric tons' displacement 18.8 meters in length, coal burning, with a crew of 16 men. Purchased second-hand in 1937. Most of the crew are employed in operating nets and multiple fish lines from small boats;

One launch, "La Marina", of 7 tons' displacement, 9.7 meters in length, with a crew of 5 men for operation of multiple fish lines, bought in 1937, in need of thorough overhauling.

In addition, other vessels of lesser tonnage, steam or motor, usually in a poor state of repair and the property of private firms. Their value is negligible.

The actual value of the installation and equipment of the fishing industry may be estimated as follows:

| | | |
|---|---|---|
| **Private Firms** | | |
| Vessels | 164,800 pesos | |
| Other fishing equipment | 19,500 " | |
| Shore equipment & installations | 32,700 | 217,000 pesos |
| **SOYP** | | |
| Vessels | 107,000 | |
| Other equipment | 5,170 | |
| Manufacturing equipment & installations | 151,772 | 263,942 pesos |
| **Port Authorities** | | |
| Dockside installations for the use of amateur fishermen | 24,042 | 24,042 |
| Total | | 504,984 pesos |

Fishing Methods Employed.

a. Inshore and offshore.

Practically all Uruguayan fishing is coastal, that which takes place in the middle of the River Plate being slight as compared with the total.

b. Trawling, line, net trap, etc. (indicate relative importance of each gear, and principal species taken by each).

With the exception of the trawler and of two vessels employing nets all others use hooks and lines. Nets, however, give superior results.

Species. List common or local name, and Latin or scientific names.

Names of fish commonly caught in Uruguayan waters.

(The common name in Spanish is followed by one or more common names in English, as far as they are current in the River Plate region, in brackets).

| Common names | Scientific names |
|---|---|
| Corvina (croaker) (white sea bass) | Micropon undulatus, L.<br>Micropon opercubris, Q.G.<br>Sciaena lepisma. Cynoscic nobile |
| Pescadilla (sea trout or weak fish) | Cynoscion striatus, Cuv.<br>Urophycis chuss. |
| Merluza (whiting, hake or false cod) | Merluccius (gayi, Guich.<br>hubbsi, Mar.) |
| Bagre or mochuelo<br>(cat fish) | Trachysurus barbus, Lacep.<br>Pimelodus clarias, L.<br>Rhamdia sapo, C.V. |
| Corvina negra<br>(sea drum) | Pogonias chromis, L. |
| Palometa | Parona signata, Jen. |
| Cazón (shark or dogfish) | Mustelus canis, Mitch. |
| Congrio (Conger) | Leptocephalus orbignyanus, Val.<br>Percophis brazilianus,Q.C. |
| Pescadilla de red | Sagenichthys ancylodon, Bloch,<br>Berg. |
| Gallo | Zenpsis conchifer, Low.<br>Callorhynchus, callorhynchus, L. |
| Lacha (menhaden) | Brevoortia tyrannus, Latrobe. |
| Pejerrey (a pseudo mackerel) | Basilichthys bonariensis, C.V.<br>Menidia uruguayensis, Devicenzi<br>Odenthestes perugiai, Everm and<br>Kend. |
| Pati | Luciopimelodus pati, C.V. |
| Raya (skate) | Psammobatis microps, Gthr. |
| Dorado (gilt head) | Salminus maxillosus, Val.<br>Coryphaena. Chrysophrys. |
| Liśa (mullet) | Mugil braziliensis, Ag. |
| Armado | Oxydorus kneri,Bloch.<br>Doras granulosus, Val. |

| Common names | Scientific Names |
|---|---|
| Lenguado (pseudo halibut or flounder) | Paralichthys (braziliensis, Ranz patagonicus, Jord. and Hoss. |
| Sargo | Diplodus argenteus, C. V. |
| Salmón | Brycon orbygnianus, C. V. |
| Anchoa (bluefish) | Cheilodipterus saltator, L.<br>Engraulis encrasicholus<br>Pomatomus saltatrix |
| Anguila | Symbranchus marmoratus, Bloch. |
| Surubí | Pseudoplatystoma coruscans, Ag. |
| Mangurubú | Pseudopimelodus zungaro, Humb. |
| Sábalo (shad) | Prochilodus lineatus, Val.<br>Clupea alosa. |
| Mandubí (manduvi) | Agenciosus uruguayensis, Devicenzi<br>Pseudo agenciosus brevifilis, C. V. |
| Pacú | Colosoma mitrei, Berg.<br>Colosoma canterai, Devicenzi. |
| Tararira | Hoplias malabaricus, Bloch. |
| Boga | Leporinus obtusidenus, Val. |
| Burriqueta | Ophioscion adustus, Ag. |
| Pargo Rosado (red porgy or baize) | Pagrus pagrus, L. |
| Mero | Acanthistius brasilianus, C.V.<br>Epinephelus gigas, Brunn. |
| Rouget | Helicolenus (dactylopterus lahillei, Norman) |
| Nata (harvest fish) | Rhombus paru, L. |
| Burel (young anchovy) | Cheilodipterus saltator, L. |
| Sardina (sardine) | Clupea encrasicolus<br>Lyncengraulis grossidens, Ag. |
| Calamares (calomares Squid) | - - - - - - - - - - |
| Salmerón | Beridia grossidens, C.V. |
| Centolla | Lithodes antarctica, Homb and Jacq. |

| Common Names | Scientific Names |
|---|---|
| Pargo blanco | Umbrina canossi Berg. |
| Criolla | Pogonias chromis, L. |
| Congrio real | Percophis brasiliensis, Q.C. |
| Bacalao del Sur (Abadejo) (like codfish) | Genypterus blacodes, Bloch. |
| Anchoita (anchovy) | Stolephorus olidus, Gthr. |
| Anguila | Symbranchus parmoratus, Bloch. |
| Mojarra | Carax gibbosus, L. |

Fish Taken, 1937 to date.

a. Fish landed. Indicate catch by principal species.

According to statistics furnished by SOYP, the total catch for the past nine years, in metric tons, was as follows:

| Year | S.O.Y.P. | Private firms | Total |
|---|---|---|---|
| 1938 | 1,347 | 2,295 | 3,642 |
| 1939 | 1,372 | 2,043 | 3,415 |
| 1940 | 1,187 | 1,919 | 3,106 |
| 1941 | 1,286 | 1,892 | 3,178 |
| 1942 | 1,222 | 1,962 | 3,184 |
| 1943 | 1,343 | 1,979 | 3,322 |
| 1944 | 1,252 | 2,071 | 3,323 |
| 1945 | 1,301 | 2,104 | 3,405 |
| 1946 | 1,269 | 2,334 | 3,603 |

The average annual catch in Uruguay, therefore, was 3,353 metric tons. The percentage thereof, by species, follow:

| | |
|---|---|
| Corvina | 78% |
| Pescadilla | 16 |
| Bagre | 1 |
| Brotula | 1 |
| Merluza | 1 |
| Various | 3 |

b. Fish wasted.

It is estimated that 15% of the total catch is wasted. Part of this is due to the lack of consumer demand for the species in question, part to the lack of adequate refrigeration facilities.

Production and methods of processing, 1937 to date.

Annual production, in its several forms, is given below in terms of metric tons.

| Year | Fresh or frozen fillets | Canned | Pickled | Dry salted and smoked |
|---|---|---|---|---|
| 1938 | 1,858 | 161 | 149 | 928 |
| 1939 | 1,742 | 150 | 140 | 871 |
| 1940 | 1,584 | 142 | 122 | 792 |
| 1941 | 1,621 | 139 | 131 | 810 |
| 1942 | 1,633 | 141 | 130 | 800 |
| 1943 | 1,695 | 151 | 131 | 849 |
| 1944 | 1,735 | 147 | 136 | 807 |
| 1945 | 1,836 | 108 | 152 | 798 |
| 1946 | 2,038 | 163 | 143 | 919 |

The different species are processed in amounts corresponding roughly to the percentage given in paragraph 7 (a). Tin containers with a net capacity of 280 grams are used. These are delivered in cases of 48 cans each.

Production of By-products.

a. Fish oil.

(1) Total Production - by kind

The production of fish oil is of negligible commercial importance, since the entire annual output, roughly 200 metric tons, is used in the feeding of animals.

(2) Number of mills and type of equipment for primary processing and further refining.

Fish oil production is limited to two small firms. No information with regard to installations is available.

(3) Grades produced.

The oil produced is either Unrefined or Inedible.

(4) Consumption in country - amount by industry, giving edible and inedible separately.

As noted above, only inedible oil, which is entirely consumed in the country, is produced.

b. Fish meal for animal and poultry feed, and for fertilizer.

The production of fish meal in the period 1937-45 is given below.

| Year | Kilograms |
|---|---|
| 1937 | 168,240 |
| 1938 | 215,402 |
| 1939 | 190,072 |

| Year | Kilograms |
|---|---|
| 1940 | 175,122 |
| 1941 | 167,486 |
| 1942 | 137,126 |
| 1943 | 195,162 |
| 1944 | 277,082 |
| 1945 | 198,917 |
| 1946 | Not available |

c. Other by-products.

The preparation of vitamin extracts has been underway in the local industry for only little more than a year.

Consumption of principal species and total.

a. Fresh or frozen (in metric tons)

| Year | Corvina | Pescadilla | Pagre | Brótula | Merluza | Especies Varias | Total |
|---|---|---|---|---|---|---|---|
| 1938 | 1,449 | 297 | 17 | 21 | 19 | 56 | 1,858 |
| 1939 | 1,359 | 279 | 18 | 19 | 17 | 50 | 1,742 |
| 1940 | 1,235 | 253 | 15 | 18 | 16 | 47 | 1,584 |
| 1941 | 1,264 | 259 | 11 | 23 | 16 | 48 | 1,621 |
| 1942 | 1,273 | 262 | 12 | 19 | 17 | 50 | 1,633 |
| 1943 | 1,322 | 271 | 16 | 21 | 19 | 46 | 1,695 |
| 1944 | 1,353 | 278 | 11 | 25 | 17 | 51 | 1,735 |
| 1945 | 1,432 | 294 | 12 | 26 | 18 | 54 | 1,836 |
| 1946 | 1,589 | 326 | 14 | 28 | 15 | 66 | 2,038 |

b. Canned.

| Year | Corvina | Pescadilla | Merluza | Total |
|---|---|---|---|---|
| 1938 | 129 | 17 | 15 | 161 |
| 1939 | 120 | 16 | 14 | 150 |
| 1940 | 114 | 15 | 13 | 142 |
| 1941 | 121 | 11 | 7 | 139 |
| 1942 | 130 | 7 | 4 | 141 |
| 1943 | 127 | 13 | 11 | 151 |
| 1944 | 118 | 20 | 9 | 147 |
| 1945 | 89 | 11 | 8 | 108 |
| 1946 | 137 | 21 | 5 | 163 |

c. Cured. (Pickled, salted, smoked)

| Year | Corvina | Pescadilla | Merluza | Total |
|---|---|---|---|---|
| 1938 | 915 | 107 | 55 | 1,077 |
| 1939 | 885 | 95 | 61 | 1,041 |
| 1940 | 780 | 120 | 14 | 914 |
| 1941 | 846 | 64 | 31 | 941 |
| 1942 | 818 | 92 | 20 | 930 |

c. Cured. (Cont'd)

| Year | Corvina | Pescadilla | Merluza | Total |
|---|---|---|---|---|
| 1943 | 882 | 68 | 30 | 980 |
| 1944 | 849 | 81 | 13 | 943 |
| 1945 | 855 | 74 | 21 | 950 |
| 1946 | 924 | 85 | 53 | 1,062 |

d. Indicate pattern of consumption, including customs and prejudices.

The local tastes and habits have developed a consumption pattern which may be expressed by the following percentage table:

| | |
|---|---|
| Fresh fish, especially fillets | 60% |
| Canned fish | 30 |
| Salted fish | 10 |

International trade control and pattern, 1937 to date.

a. Indicate by all breakdowns available for all fishery products and by-products, including country distribution.

(1) Imports.

Total imports of salted fish
(Gross weight, in metric tons)

| TYPE | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|---|---|---|
| Codfish(1) | 163 | 179 | 143 | 235 | 126 | 59 | 22 | 32 | 71 | 98 |
| Anchovies(2) | 76 | 82 | 61 | 92 | 60 | 85 | 132 | 77 | 78 | 67 |
| Herring (3) | 24 | 27 | 20 | 32 | 16 | 4 | 1 | -- | 4 | 2 |

Note 1. Codfish are normally received in tin-lined cans which are estimated to constitute 10 per cent of the gross weight. It is understood that dry and salted codfish are imported only from North America or from Europe.

Note 2. Anchovies are shipped in two types of containers, i.e. in heavy barrels which represent an estimated 40 per cent of gross weight and in tins which represent an estimated 20 per cent of gross weight. Normally 55 per cent of the anchovies imported are in barrels and 45 per cent in tins, and are shipped in a salt solution. All imports of anchovies during 1942, 1943 and 1944 were received from Argentina, and were of a local species differing from the Mediterranean variety.

Note 3. Herring is customarily received in tins which are estimated to constitute 10 per cent of the gross weight.

Total imports of canned fish
(Gross weight, in metric tons)

| TYPE | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|---|---|---|
| Anchovies | 12 | 53 | 46 | 20 | 40 | 2 | 5 | 2 | 1 | 2 |
| Tunny fish | 21 | 19 | 18 | 19 | 15 | -- | 8 | 43 | 39 | 53 |
| Salmon | 8 | 10 | 7 | 7 | 12 | 5 | 2 | 4 | 5 | 7 |
| Sardines | 230 | 229 | 205 | 139 | 174 | 112 | 10 | 47 | 141 | 137 |
| Others | 7 | 5 | 6 | 4 | 2 | 1 | 1 | 3 | 2 | 6 |

Note. Because of the various forms in which these fish are prepared, it is impossible to estimate the actual net weight of the fish alone.

There are no imports of fresh or frozen fish.

(2) Exports.

There are no exports of fish from Uruguay

b. Foreign competition, including analysis and trends of imports, import tariffs and other regulations.

Foreign competition with the local industry exists only in the cases of canned products in general and dry or brine salt fish, especially those types which are not found in Uruguayan coastal waters, e.g., codfish, sardines, salmon, tuna, and herring. Since the local canning industry is still in an elementary stage of development, it is unable to offer effective quality competition to the imported products. Proponents of the national industry hope that the adoption of modern methods and the accumulation of manufacturing experience will eventually enable the Uruguayan factories to produce canned fish on a par with the at present superior foreign product.

All imports are subject to exchange control. The import tariffs for fish are as follows:

Fresh fish: 79 per cent ad-valorem.
Frozen fish: 12 per cent ad-valorem
Dry salted, smoked and kippered fish
Herring: $0.26 (Uruguayan pesos) per 100 kilograms, including container.

Codfish:
a) Bone-in: $0.11 (Uruguayan pesos) per kilogram gross weight
b) Boneless: $0.21 (Uruguayan pesos) perkilogram gross weight
Anchovies: $0.16 (Uruguayan pesos) per kilogram gross weight
Sardines:
a) Prensadas: $0.11 (Uruguayan pesos) per kilogram gross weight
b) In other conditions: $0.16 (Uruguayan pesos) per kilogram gross weight.
Other species: $0.16 (Uruguayan pesos) per kilogram gross weight.

Canned fish prepared in different forms or styles, not specified above.

In brine: $0.42 (Uruguayan pesos) per kilogram including container.
Dry: $0.14 (Uruguayan pesos) per kilogram including container.
Anchovies in oil: $0.70 (Uruguayan pesos) per kilogram including container.
Sardines in oil: $0.44 (Uruguayan pesos) per kilogram including container.
Others: $0.70 (Uruguayan pesos) per kilogram including container.

All imported foodstuffs are subject to chemical analysis. This safeguard is designed to protect the consumer from impure or tainted food.

c. Other principal factors limiting imports or exports.

There is no law which specifically limits exports or imports of fish as such. However, all international trade is controlled by the Office of Export and Import Control and the Bank of the Republic, which respectively authorize and sell the required foreign exchange.

Prices.

a. Fresh.

Reliable price data are obtainable only from SOYP, the official institute, for the retail trade. Wholesale transactions are completely private, and the prices fluctuate considerably. Large scale provisioning of the various government dependencies such as hospitals, asylums, garrisons, prisons, etc., is effected under official contracts with SOYP, the details of which are not made public.

Retail prices, in Uruguayan pesos per net kilo, are as follows:

| | |
|---|---|
| Corvina | $0.17 |
| Pescadilla | 0.17 |
| Merluza | 0.20 |
| Sargo | 0.36 |
| Lenguado | 0.36 |
| Pejerrey | 0.40 |
| Besugo | 0.45 |
| Brótula | 0.45 |
| Anchoa | 0.45 |

Fillets of fish with or without bones, from 0.34 to 0.42 centésimos.

b. Canned.
c. Pickled and salted.
d. Smoked and kippered.
e. Other products

As previously noted, all prepared fish, with the exception of a minute quantity produced locally is imported. Both the wholesale and retail prices of the latter vary enormously because of factors such as size, quality, style of preparation, country of origin, location of the store, etc. As a result, it is not unusual to find the same product being offered at radically different prices at the same time.

Internal Trade Pattern.

a. Methods of marketing and channels of trade in internal market, including factors affecting marketing such as taxes, price and marketing agreements, etc.

The retail fish trade is largely carried on at the stands located in the public markets. SOYP maintains seven branches in various zones of Montevideo, and privately-owned enterprises are also found in the markets. In addition, a large number of peddlers hawk their wares in thestreets of the residential districts.

With regard to taxes, the peddlers are required to pay for the appropriate permit and the stands are subject to the usual commercial taxes and patents. There are no known price or marketing agreements, although prices in general reflect those of SOYP, which were given in paragraph 12 (b) of this report.

b. Measures in effect or under consideration for relieving disturbed market conditions, including domestic subsidies, production control, etc.

The only official steps taken toward guaranteeing an ample supply of fish at moderate prices were those embodied in the reorganization of SOYP, the official government entity. SOYP has authorized a comprehensive study of supply controls, possible extension of sales, new installations and other factors pertinent to the aims noted above.

c. Improvements in technology, organization, financing, etc.

Aside from the study mentioned in the preceding paragraph, no such improvements have been noted.

d. Markets and effective demand.

Exports of canned fish and by-products have been so small as to be negligible. The present market and effective demand is almost completely domestic, although future export possibilities are limited only by the energy and the imagination with which the industry is developed.

Fishery Research

a. Fishing statistics.

No other statistics are available.

b. Biological.
c. Technological.
d. Sociological and economic
e. Nutritional.
f. Pond culture and fertilization.
g. Stocking and rehabilitation of fisheries in lakes and streams
h. Fishery education
i. Intensification of existing areas.
j. Greater utilization of present catch.

Outlook Summary.

a. Production.

The annual catch in Uruguay averages 3,000 metric tons, 60% of which is attributable to SOYP and 40% to private enterprises. Production varies seasonally with the emigration of fish; the peak months are April and July. As indicated above, the present production is closely correlated to local demand, which is not great.

Anticipating an increase in demand in the future, SOYP has developed a plan which is composed of the following elements:

Establishment of new and more efficient stands for public sale;
Experimental fishing on the Bank of Rouen, 168 miles south of Montevideo, an area which has not yet been tested;
Exploratory fresh water fishing in the Uruguay river;
Studies designed to determine the possibilities of extracting

lobsters, clams and other shell-fish on the East Coast;
A proposed State fishing base in the port of La Paloma, with plants for the production of flour, canned fish, etc.

If the above enterprises fulfill expectations, it is estimated by SOYP that the annual production will increase to 10,000 metric tons within two years.

The phase of the fisheries industry with the greatest commercial possibilities is the extraction of vitamin oils from shark and other fish livers. Research in this respect was begun in 1939 by SOYP and the Institute of Industrial Chemistry. As a result of the subsequent report, SOYP began laboratory extraction on a small scale in 1941. The small output was used, with satisfactory results, by the Ministry of Public Health. Now SOYP has some modern machinery, including two centrifuges and a mill. Delivery of a spectrofotometer is expected shortly. However, present production is extremely limited. The new plant of SOYP is not expected to operate at capacity for at least six months.

The chief vitamin oil-bearing fish is the "tiburón chico" (mustelus cannis-Mitch) but other less profitable species are also being exploited. The former is found on the continental shelf between Punta del Este and the Chuy.

Principal drawback to proper exploitation of this industry has been the lack of suitable vessels. SOYP acquired five new vessels in the past year. Furthermore, SOYP has announced that its new plant will be available to all fishermen in order that the yield of oils be as large as possible. For this service SOYP will receive a royalty on each liter of oil obtained or each kilo of liver processed.

Upon recommendation of Dr. Fernando DE BUEN, a Spanish fish industry specialist, a total of 49,000 pesos were allocated for the reconstruction of buildings and installations on the Isla de Lobos, headquarters of the sea wolf skin industry. The value of this commodity to Uruguay has declined steadily since 1910, when several private concerns took over the then thriving trade. SOYP hopes that by improvement in quality approximately 7,000 skins can be sold annually.

b. Effective local demand.

The effective local demand is somewhat less than might be expected of a country with abundant fish resources, because the population traditionally prefers meat to fish. A recent increase in consumption was due to a shortage of the former and, to a lesser degree, to the efforts of interested parties in educating the public as to the dietary benefits of fish.

c. Import Requirements.

Imports are confined to canned products, since the country is self-sufficient with respect to fresh fish. As noted above in the description of the local industry, some progress in the establishment of fish-processing and fish-canning factories is being made. However, it is anticipated that for several years to come canned products will continue to be imported, although in gradually decreasing quantities.

d. Exportable Surpluses.

At the present time Uruguay has no exportable surplus because local production is completely absorbed by the internal market. But in the future, it is hoped that an expanded industry will be able to export Uruguay's fish and fish products.