

## The Market for Eels in the Federal Republic of Germany

### INTRODUCTION

The Federal Republic of Germany (FRG) has traditionally been the largest European market for the European eel, *Anguilla anguilla*, and has depended heavily on imports from northern European suppliers, chiefly Denmark. In recent years, though, static eel production in the Baltic Sea has permitted Canada, the United States, and New Zealand to increase their exports of other eel varieties to the FRG to meet rising demand.

The U.S. share of eel exports to the FRG increased to 8.5 percent of the total in 1976, and although the volume was still under 400 metric tons, the value was over \$1 million. Despite the intricacies and strict quality requirements of the international eel trade, current projections point to rising U.S. sales of the American eel, *Anguilla rostrata*, to the FRG and other European countries in the years ahead.

### DOMESTIC PRODUCTION

Figures on eel production are imprecise in most countries, and the FRG is no exception. The FRG eel catch from inland rivers, lakes, and ponds has been estimated at about 1,000 t annually for some years. The number of sport fishermen has increased, though, in recent years, and since their catches are not registered, the above figure is at best only a rough estimate. On the other hand, the FRG's catch of marine eels has declined. The marine eels are caught by fishermen operating trawlers in the estuaries of rivers flowing into the North and Baltic Seas. Although there was some increase in the North Sea eel catch after the middle 1960's when trawlers began to be used, this fishery has probably stabilized recently. The

eel fishery in the Baltic has been declining since the late 1960's. The Food and Agriculture Organization (FAO) of the United Nations gives the following figures for the FRG's eel catch (in metric tons) in the North Sea and the Baltic from 1970:

Year	Catch	Year	Catch
1970	500t	1973	400
1971	500	1974	351
1972	400	1975	382

### CONSUMPTION AND PRICES

West Germany is the largest market in Europe for eels and domestic consumption is estimated at about 6,000 t annually. Moderate increases in future eel consumption are probable. Most of the eels consumed in the FRG, estimated at from 80 to over 90 percent, are smoked, with the large part of the rest processed into jellied eels.

Eel prices in the FRG vary widely according to the type of eel, quality, and weight. Generally, they tend to be highest in November and December, resulting from high Christmas season demand, and lowest in the summer and fall months. Prices at the retail level for smoked eels are about \$8.00 per pound, but these are normally the highest quality eels, fairly large in size and with above-average fat content.

At the ex-vessel level, prices are much more difficult to determine, mainly because they differ so much according to the various types of eels imported into the FRG. The average ex-vessel price for eels imported from the United States in 1976 was \$1.55 per pound for fresh or refrigerated eels, and \$1.10 per pound for frozen eels. According to German sources, current

prices for U.S. eels have not changed much from 1976. This price range, however, is for the American eel and the Australian eel, *Anguilla australis*. Recent ex-vessel prices in Denmark and Italy for the preferred European eel suggest an average range of from \$2.00 to \$2.75 per pound. In addition, among the 20 countries which exported fresh or refrigerated eels to the FRG in 1976, the average ex-vessel price for U.S. eels ranked 16th, with only New Zealand, Turkish, Canadian, and Australian eels selling for lower average prices.

### IMPORTS

FRG eel imports have recently increased somewhat, and in the last 4 years they have slightly exceeded 5,000 t annually. Since most of the eels are smoked, and the German processors prefer live eels for that purpose, approximately 85 percent of the imported eels are live or refrigerated rather than frozen. It is interesting to point out, however, that over half of the U.S. eel exports to the FRG consist of frozen eels.

Figures for 1976 show that imports accounted for nearly 75 percent of the FRG's total eel supply. More than half of these imports originated from countries which supply Baltic eels, for which there is a pronounced preference in the FRG. Denmark, which provided about 40 percent of the FRG's eel imports, has been the traditional leader, followed by the Netherlands, New Zealand, Canada, the United States, Poland, and Sweden.

The difference in average prices paid to eel suppliers in 1976 was considerable (Table 1). The favorite Baltic eels were delivered at ex-vessel prices which were up to three times greater than the less-favored Australian eels from New Zealand.

### QUALITY RESTRICTIONS

Sources in the industry emphasize the complicated nature of the international eel trade, especially as regards the stringent requirements for certain quality characteristics. In the FRG, where most of the eels are smoked, the

Table 1.—West German eel imports, 1976.

Country of origin	Imports (t)	Value (1,000 DM <sup>1</sup> )	Avg. Price (DM/kg <sup>2</sup> )
Fresh or refrigerated			
France	108.3	1,336	12.34
Belgium/Luxembourg	94.4	1,154	12.22
Netherlands	409.4	5,055	12.35
Italy	121.1	1,480	12.22
Great Britain	29.9	334	11.17
Ireland	37.0	369	9.97
Denmark	2,170.4	27,720	12.77
Sweden	218.9	2,809	12.83
Austria	26.3	246	9.35
Spain	15.7	230	14.65
Greece	36.1	482	13.35
Turkey	18.5	141	7.62
Poland	399.4	4,961	12.42
Hungary	26.7	288	10.41
Tunisia	11.2	162	14.46
United States	179.9	1,551	8.62
Canada	169.5	1,153	6.80
Australia	94.4	675	7.15
New Zealand	232.1	908	3.91
Total	14,419.9	51,193	
Frozen			
Netherlands	62.3	334	5.36
Denmark	19.5	218	11.18
Greece	48.9	606	12.39
Turkey	22.6	166	7.35
United States	197.1	1,208	6.13
Canada	258.7	1,559	6.03
P.R. China	22.5	121	5.38
Australia	59.7	437	7.32
New Zealand	75.7	303	4.00
Total	771.1	4,999	

<sup>1</sup>CIF German seaport or border (excluding import duty).

<sup>2</sup>The average conversion rate in 1976 was US\$1.00 = DM2.53. The late-1977 rate was approximately US\$1.00 = DM2.35.

most important quality characteristic is the fat content. The minimum fat content for smoking is apparently 12 percent, although there are reports of eels being marketed with some success with as little as 8 percent fat content. In this connection, it should be noted that the mature eels, called silver eels, which are the most highly prized for smoking, have an average fat content of 27 percent. The average estimated fat content of yellow eels, those which have not yet attained sexual maturity, is the minimum 12 percent.

In both the silver and yellow categories, there is a further breakdown between broad-headed and narrow-headed eels. This feature is determined by the eating habits of the eels. The broad-headed eel (an eel turned predator) is lower in fat content than the narrow-headed eel (an eel feeding mainly on vegetable matter and plankton).

An additional complicating factor is the classification of eels by weight.

Those eels which are used for cooking or frying rather than smoking are referred to as "green" eels and they should be large, usually no less than 1 pound, while those over 2 pounds are preferred. For smoking purposes the very large eels are not in great demand because the retail price would be prohibitive. Therefore, the weight classes of 0.5-1 pound and 1-2 pounds are preferred.

The bulk of eels are marketed live in the FRG. Dealers and processors are somewhat reluctant to accept frozen eels. Occasionally eels which were not promptly sold were frozen after they had begun to deteriorate and small-scale smokers were unable to handle them properly. Live eels have been flown from the United States to West Germany in flat waxed cartons, lined with plastic foil and covered with a small amount of crushed ice, which, through slow thaw, keep the eels wet.

Frozen eels are usually shipped by ocean freighters in waxed cardboard boxes usually containing about 50 pounds of eels. Within each box, smaller blocks of frozen eels are usually wrapped in plastic foil bags.

In general, industry sources tended to place American eels in the category of second grade quality for which the market in the FRG is necessarily limited. Several also pointed out that it would be a good idea for American eel exporters to provide samples in order to promote their product more successfully. They did mention, though, that if U.S. eel exporters could improve the quality of the product by offering for sale narrow-headed, silver eels, with a high fat content and fine-textured flesh, preferably in the 0.5- to 1.5-pound weight class, the market for U.S. eels in the FRG could be expanded significantly.

According to the NMFS Office of International Fisheries, West Germany is the leading consuming nation in a traditional and fairly steady European market for smoked, jellied, and fresh eels. European consumption of eels has probably been about 20,000 t per year for some time, although one observer has predicted a European market of 30,000 t annually by 1985. The major

producing countries are Denmark and France, followed by the Netherlands, West Germany, and Italy. European supplies have been supplemented increasingly in recent years by imports from the United States, New Zealand, and Japan. The major marketing centers for the European eel trade are Hamburg, Copenhagen, the IJsselmeer region in the Netherlands, and Milan.

European supplies appear to have stabilized and, therefore, the market should require increasing imports in future years. In the Baltic Sea there is little doubt that the eel stock has been declining since the early 1960's; similarly, there is evidence that French, Italian, and Spanish eel catches in the Mediterranean Sea are also decreasing. On the other hand, there is reason to believe that French and Spanish catches in the Atlantic Ocean may be increasing somewhat. Figures collected by the FAO put Europe's annual eel production between 1970 and 1975 in a narrow range of 19,000-20,000 t, except for 1972 when it dropped to only 17,300 t. It should be kept in mind, however, that all of these statistics are somewhat unreliable.

At a 1976 international conference in Helsinki on eel aquaculture and exploitation, it was suggested that practically all of the wild eels in European waters have been exploited as much as possible and that, until eel farming is further developed, supply will be insufficient to meet demand. Some evidence indicates that the local increases in eel catches come primarily from lakes and inland waters rather than from traditional maritime sources. The most thorough work on inland eel farming has to date been done by Polish marine biologists.

In response to the tightening eel supply, the European Economic Community (EEC) has taken steps recently to facilitate the importation of eels to the member-states. In 1976, the EEC twice increased the quantities of eels which could be imported to the Community without having to pay the Common Customs Tariff duty of 5 percent. The quota of imported eels which is currently exempted from the duty is 7,200 t. (Source: IFR-77/181.)

## **Fishery Data Printed for Chile, Barbados and Costa Rica**

Reports for Barbados, Chile, and Costa Rica, listing government agencies and officials responsible for fisheries, fishing companies and commercial representatives, fishery trade journals, and information on seafood detentions, if any, have been compiled by the Office of International Fisheries, National Marine Fisheries Service, NOAA. The reports may be requested, by number, from NMFS Statistics and Market News Offices.

Barbados' fishery administration is responsible to the Ministry of Agriculture, Food, and Consumer Affairs. That address is: Permanent Secretary, Ministry of Agriculture, Food, and Consumer Affairs, Codrington, St. Michael. For the full report, request "IFR-77/182."

Responsibility for fisheries in Chile is divided between the Ministry of Agriculture and the Ministry of Economy. The government is now reportedly considering the establishment of a Ministry of Fisheries to unite all agencies responsible for fisheries into one agency.

Chile's Fisheries Protection Division is in charge of imposing fishing restrictions on species to prevent overfishing. It's address is: Division de Proteccion Pesquera, Servicio Agricola y Ganadero, Ministerio de Agricultura, Casilla 4088, Santiago.

The Fisheries Division provides technical and economic assistance to fishing cooperatives. It's address is: Division de Pesca, Instituto de Desarrollo Agropecuario, Ministerio de Agricultura, Teatinos 40, Santiago. In the Ministry of Economy the Fisheries Development Institute evaluates and implements policies concerning the utilization of Chile's fishery resources. That address is: Instituto de Fomento Pesquero, Ministerio de Economia, Pedro de Valdivia 2633, Santiago. For the full report on Chilean government and industry fishery organizations, request "IFR-77/191."

In Costa Rica, the Ministry of Agriculture's responsibility for fisheries is divided between two agencies. Dealing with marine fisheries is: Ing. Eduardo

Bravo, Director, Departamento de Flora y Fauna, Ministerio de Agricultura y Ganaderia, Apartado 10094, San Jose. Responsible for aquaculture and freshwater fisheries is: Ing. Herbert Nanne, Jefe, Departamento de Acuicultura, Pesca Continental y Vida Silvestre, Ministerio de Agricultura y Ganaderia, Apartado 10094, San Jose. For the full Costa Rican report, request "IFR-77/195."

## **CANADA AMENDS FISHERIES ACT**

Canada has amended its Fisheries Act, providing greater protection to the aquatic environment and more severe penalties. The Amendments went into effect on 1 September 1977. Federal and provincial authorities will seek industry and public support because these changes cover a broad range of activities not limited to fishing operations.

Lobster and salmon poachers take about \$6.5 million annually from Canadian fishermen. With industry and public support, new provisions of the revised Fisheries Act will place the federal and provincial authorities in a much better position to deal with the poaching problem. These new provisions include:

- 1) Forfeiture of illegal catch and of vessels engaged in illegal fishing.
- 2) Restrictions on activities such as landfill or construction in coastal areas likely to harm marine habitats.
- 3) Broader and more flexible authority to regulate against industrial pollution of waterways; more effective regulations for the emergency pollution problem.
- 4) Mandatory spill reporting and clean-up.
- 5) Increased penalties for all pollution offenses.
- 6) Regulations prohibiting interference with the east coast seal hunt; access to the sealing grounds is restricted to those involved in authorized sealing activities. This measure will not bar the media, but will keep away persons intent on interfering with sealing operations.
- 7) An innovative amendment,

termed "ticketing," obviating court appearances for minor offenses, with fines of \$100 or less.

8) Granting commercial fishermen the right to initiate civil actions for loss of income caused by pollution sources other than ships.

9) Designation of fishery officers as peace officers with powers to serve summonses and warrants.

10) A new definition of "fishing" to include an attempt to catch fish as well as the actual capture.

11) Authority to extend, if necessary, the restricted area for trawlers beyond the present limit of 12 miles from shore. (Source: IFR-77/194.)

## **Canada Eyes Power Plant Coolant for Aquaculture**

The Government of the Province of Ontario, Canada, has begun to examine the economic viability of using heat produced by the electric power generating stations of the provincially-owned utility, Ontario Hydro, as an alternative energy source for greenhouse heating and the farming of fish. The project, announced by the Provincial Energy Ministry and Agriculture and Food, and Natural Resources Ministries, involves spent coolant water from the nuclear generating station of Ontario Hydro on the Bruce Peninsula which is now fully returned to Lake Huron.

According to Ontario Minister of Energy James Taylor, it was hoped that construction of necessary facilities could begin in the spring of 1978 after the detailed economic and engineering studies are completed.

This application of spent coolant from industrial plants is apparently novel in Ontario, at least in utilization of the heat currently lost from Ontario Hydro generating facilities. However, it must be remembered that the announcement by several Ministers of the Crown was made in the middle of an election campaign and may have been given undue emphasis as a result of this fact.

Those interested in additional information on the above project may write to: Marcia Dorfman, Ministry of Energy, Ontario, Canada; Telephone (416) 965-3246. (Source: IFR-77/187.)

# AFRICAN FISHERY OFFICIALS LISTED

The Branch of International Fisheries Analysis has prepared the following list of African fishery officials.

The list is accurate as of 1 July 1977. Sources include U.S. Embassies in the respective countries, files in the NMFS

Branch of International Fisheries Analysis, and the Office of the Regional Fisheries Attache for Africa. (From: IFR-77/183.)

<i>Afars and Issacs</i> Unknown	Nature et des Chasses Direction des Eaux et Forêts Ministère de l'Agriculture, de l'Elevage, du Genie Rural, et des Eaux et Forêts Brazzaville	Fisheries Department Ministry of Tourism and Wildlife P.O. Box 40241 Nairobi	Caixa Postal 1723 Maputo	and Natural Resources P.O. Box 336 Khartoum
<i>Algeria</i> Zouaoui Reggam Director General Office Algérien des Pêches Ministère des Transports 1, Place de la Pêcherie Algiers	<i>Egypt</i> Abdel Aziz Hussein Minister of State for Agriculture and Cooperative Cos., Aquatic Wealth and Sudan Affairs, Ministry of Agriculture Land Reform and Reclamation Bldg. Sharis Wazaret El Zeraa', Dokki Cairo	<i>Lesotho</i> Alistair Pedder Livestock Division Ministry of Agriculture P.O. Box MS 24 Maseru	<i>Niger</i> Ibrahim Najada Directeur Direction des Eaux et Forets Ministere du Developpement Rural, Niamey	<i>Swaziland</i> L. Joeris Fisheries Officer Ministry of Agriculture P.O. Box 162 Mbabane
<i>Angola</i> José Carlos Victor de Carvalho Secretary of State for Fishing Ministry of Fisheries Luanda	<i>Ethiopia</i> Woldemichael Getaneh General Manager Fishery Corporation Ministry of Agriculture and Settlement P.O. Box 1232 Addis Ababa	<i>Liberia</i> A. Kini-Freeman Director Bureau of Fisheries Ministry of Agriculture P.O.Box 9010 Monrovia	<i>Nigeria</i> B. F. Dada Director Federal Department of Fisheries Ministry of Agriculture and Natural Resources Victoria Island P.M.B. 12529 Lagos	<i>Tanzania</i> G. K. Libaba Director Fisheries Division Ministry of Natural Resources and Tourism P.O. Box 2462 Dar-es-Salaam
<i>Benin</i> Augustin Honvou Director des Pêches Direction des Pêches Ministry of Rural Development and Cooperative Action B.P. 383 Cotonou	<i>Equatorial Guinea</i> Unknown	<i>Libya</i> Omar Ahmed Al Mogsi Secretary Secretariat of Nutrition and Sea Wealth Shara al-Jumhuriyya, P.O. Box 315 Tripoli	<i>Reunion</i> Unknown	<i>Togo</i> Akwetey V. Kowadah Directeur General Office National des Pêches Ministère du Développement Rural B.P. 1095 Lome
<i>Botswana</i> Kirby Gilmore Fisheries Officer Division of Animal Production Ministry of Agriculture Private Bag 33 Gaborone	<i>Gabon</i> Jean Julien Bignumba Directeur des Pêches Direction des Pêches et Chasses Ministère des Eaux et Forêts B.P. 32 Libreville	<i>Madagascar</i> Andrianirina Ralison Chef Service de la Pêche Maritime Direction de l'Elevage et de la Pêche Maritime Ministère du Développement Rural et de la Reforme Agraire B.P. 291 Antananarivo	<i>Rwanda</i> Joseph Ruremesha Chef de Division Ministere de l'Agriculture B.P. 621 Kigali	<i>Tunisia</i> Mohamed Ben Khedder Directeur de la Pêche Direction de la Pêche Ministère de l'Agriculture 32 Rue Thiers Khereddine
<i>Burundi</i> Audace Cayabanda Directeur Department des Eaux et Forêts Ministère de l'Agriculture et de l'Elevage B.P. 1850 Bujumbura	<i>Gambia</i> A. Olu Taylor-Thomas Director Fisheries Division Ministry of Agriculture and Natural Resources 6 Marina Foreshore Banjul	<i>Malawi</i> A. J. Mathotho Chief Fisheries Officer Department of Fisheries Ministry of Agriculture and Natural Resources P.O. Box 593 Lilongwe	<i>St. Helena</i> Unknown	<i>Upper Volta</i> Julien Tiombiano Directeur de la Pêche et de la Pisciculture Ministère du Tourisme et de l'Environnement B.P. 7044 Ouagadougou
<i>Cape Verde</i> Joao Pereira Silva Ministro de Desenvolvimento Rural Praia	<i>Ghana</i> J. N. N. Adjetey Director Fisheries Department P.O. Box 630 Accra	<i>Maldives</i> Ahmad Hilmay Didi Vice President for Fisheries Male	<i>Sao Tome and Principe</i> Unknown	<i>Zaire</i> Lessenjina Kiaba Lema Commissaire d'Etat for Environment, Conservation of Nature and Tourism B.P. 73 Kinshasa 14
<i>Cameroons</i> Theophile Epee-N'Goube Directeur Général Direction des Pêches Maritimes Ministère de l'Elevage et des Industries Animales B.P. 121 Douala	<i>Guinea</i> Louis Holie Ministre Ministère des Grands Aménagements, de la Pêche, et de l'Elevage Conakry	<i>Mali</i> Alassane Konare Director Operation Pêche Mopti	<i>Senegal</i> M'Baye Ba Directeur General Pêches Maritimes Direction de l'Océanographie et des Pêches Maritimes Ministère du Développement Rural et de l'Hydraulique B.P. 289 1, Rue Joris Dakar	<i>Zambia</i> E. D. Muyanga Acting Director Department of Fisheries Ministry of Water and Natural Resources P.O. Box 100 Chilanga
<i>Central African Empire</i> Alphonse Catchy-N'Gakoudou Directeur Général Direction des Eaux, Pêches et Pisciculture Ministère de l'Agriculture des Eaux, Forêts, Chasses, Pêches, et Tourisme B.P. 786 Bangui	<i>Guinea-Bissau</i> Joseph Turpin Secretariado de Estado das Pescas Bissau	<i>Mauritania</i> Abdullahi Ould Ismail Minister Ministry of Fisheries and Merchant Marine Nouakchott	<i>Sierra Leone</i> T. J. Shorunkeh-Sawyer Chief Fisheries Officer Fisheries Division Ministry of Agriculture and Natural Resources Tower Hill Freetown	
<i>Chad</i> Lassou Kourdina Director of Water and Fishing Ministry of Tourism, Handicrafts, and Natural Resources N'Djamena	<i>Ivory Coast</i> Luc Koffi Directeur General Pêches Maritimes et Lagunaires Ministère de la Production Animale B.P.V. 19 Abidjan	<i>Mauritius</i> Iswardeo Seetaram Minister of Fisheries Ministry of Fisheries Port Louis	<i>Somalia</i> Osman Jama Ali Minister Ministry of Fisheries and Sea Transport Mogadiscio	
<i>Comoro Islands</i> Unknown	<i>Kenya</i> Norbert Odera Director of Fisheries	<i>Morocco</i> Director General Office National des Peches 13015 Rue Chevalier Bayard Casablanca	<i>South Africa</i> B. V. de Jager Director of Sea Fisheries Department of Industries Private Bag Sea Point 8060	
<i>Congo</i> Directeur Général Service de la Conservation de la		<i>Mozambique</i> Sérgio Basulto Director Nacional de Pescas	<i>Sudan</i> Yousif Ishag Medani Director Fisheries Administration Ministry of Agriculture, Food,	



## Soviet and U.S., English Joint Ventures Reported

The Soviet Union, Poland, and East Germany have received permission from the European Economic Community (EEC) and the British Ministry of Agriculture, Fisheries, and Food to operate a fleet of factory vessels on the Cornish mackerel grounds in cooperation with Joint Trawlers International, a British fishing company. Four factory vessels from the three East European countries were expected to participate initially in the cooperative arrangement during the winter mackerel season. The factory vessels purchase mackerel caught by British fishermen, process the fish at sea, and either ship the processed fish to eastern European markets or sell it internationally. Some of the fish could ultimately be bought back by Joint Trawlers and re-exported to non-EEC countries.

In late July and early August 1977, a trial run was conducted with the Soviet factory vessel *Rybak Latvii* (13,500 GRT, B-69 class) off Ayr on the west coast of Scotland. The *Rybak Latvii*, which was anchored several miles off shore, was buying up mackerel as quickly as it could be caught, according to British press reports. In the course of a few weeks, the Soviets purchased about 400 t of mackerel from Scottish fishermen and paid them considerably more than the prevailing United Kingdom ex-vessel price. The joint operation gave a welcome boost to Scottish

fishermen whose activities have been restricted by a ban on herring fishing in the North Sea and lowered herring quotas off western Scotland and in the Irish Sea. The *Rybak Latvii* was expected to move on to the Minches, the waters between the Scottish mainland and the Outer Hebrides.

The Managing Director of Joint Trawlers, Jon Carrol, has indicated that his firm will be following a policy of buying from local Cornish fishermen first when the mackerel fishery began. However, because each eastern European factory vessel is capable of freezing 120 t/day, he said he also expected to make arrangements with Scottish and Humber-side fishing companies and/or fishermen to supply mackerel to the other factory vessels that were to arrive. If this joint mackerel operation proves successful, Joint Trawlers may try a similar one for the sprat fishery off the northeast coast of Scotland.

According to the NMFS Office of International Fisheries, the Soviet Union has also formed a joint venture with a U.S. company, the Bellingham Cold Storage Company in Washington State, to participate in fisheries for Pacific hake and Alaska pollock in the northeast Pacific. In July 1976, the joint venture, called the Marine Resources Co., was incorporated in Washington State following 3 years of planning and discussions between the partners. The capital stock in the company is held equally by Bellingham Cold Storage and SOVRYBFLOT, an organization

under the Soviet Ministry of Fisheries responsible for arranging international joint ventures. The Marine Resources Co. currently has offices in Seattle and Bellingham, Wash. Another office was to be opened soon in Nakhodka, one of the main Soviet fishing ports on the Siberian Pacific coast.

The joint venture corporation will purchase hake and pollock from U.S. fishermen for delivery to a Soviet vessel and processing at sea. Ownership of the factory vessel will remain with the Soviet Ministry of Fisheries which will be responsible for its operation. The finished product, which will be owned by the corporation, will be sold on the international market. Besides joint fishing activities, the Marine Resources Co. also plans to become involved in arranging the repairs of Soviet vessels, marketing Soviet fishery products, and providing the Soviet fishing fleet with perishable foodstuffs, water, and fishing gear.

The Soviet Union has already outfitted a factory vessel, the *Sulak* (19,000 GRT, SPASSK class), with West German (Baader<sup>1</sup>) processing equipment for the production of frozen hake and pollock blocks from the U.S.-caught fish. The joint corporation had planned to process hake aboard the *Sulak* on an experimental basis in the summer of 1977. However, the *Sulak* was not issued a permit to operate in the U.S. 200-mile fisheries zone in conjunction with the joint venture. The permit was denied pending the development of a national joint venture policy. It was considered preferable to wait for the outcome of National Marine Fisheries Service and Congressional hearings on joint ventures rather than to set a precedent before the full range of consequences of decisions on joint fishing arrangements between U.S. and foreign interests had been examined. The Marine Resources Co. planned to submit a permit application for the *Sulak* for the 1978 hake and pollock seasons. (Source: IFR-77/193.)

<sup>1</sup>Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

### An FRG Oyster Market Report

The U.S. Consulate General in Bremen has prepared a 4-page report on the market for oysters in the Federal Republic of Germany (FRG). The report is based on FRG Government statistical records and consultations with several leading firms in the FRG oyster trade. It discusses in detail FRG oyster production, imports, customs duties; it also includes a translation of the FRG law governing quality control standards for imported seafood products and two tables on FRG oyster imports. In

addition there is a list of eight FRG firms with addresses and telephone numbers interested in importing oysters.

U.S. companies wishing to receive a copy of the report should send a preaddressed mailing label with their request to: Matteo J. Milazzo, Foreign Affairs Specialist (F411), Office of International Fisheries, NMFS, NOAA, U.S. Department of Commerce, Washington, DC 20235. (Source: IFR-77/185.)

## Gambia Nabs Poachers; Seychelles, Mauritius Approve New EEZ Laws

The Gambian government took action last year to gain further control of the fishing industry and foreign fishing off its coast. The most significant action was an effort to control poaching by fishing vessels of other countries. The procurement of the *SeaDog*, a British-made patrol boat, and its maiden voyage apprehension of a Polish trawler fishing illegally in Gambian waters made great publicity and paid, in one fell swoop, the cost of purchasing the patrol boat. In September 1977 the *SeaDog* again made an impressive haul by nabbing two South Korean fishing vessels and bringing them into harbor, where they lay at anchor for all to see. The crews were arrested, tried, and fined. The crew and the boats were held until the fine was paid.

Supplementing the vigorous efforts of the Gambian Navy was the passage of a law in Parliament establishing a Fish Marketing Corporation. The corporation has sole authority to license commercial fishing and permit the export of fish or fishery products. The Government's participation in Gambia Fisheries, Ltd., previously owned 80 percent by the Japanese and 20 percent by the Gambian Government, has been increased to 51 percent. This company, which does not have a fishing fleet, but purchases from local fishermen for processing and resale, becomes the operating base for the newly created corporation.

The Gambians, according to a recent statement by President Jawara, took this step to increase foreign exchange earnings and gain greater control of resources. Given the number of fishing boats from other countries in this part of the world and the extent of illegal fishing in Gambian waters, as evidenced by continued detention of foreign vessels, the sensitivities of the Gambians on this subject appear justifiable. (Source: U.S. Embassy, Banjul.)

The Government of Seychelles

promulgated a new law redefining the nation's territorial sea and exclusive economic zone last summer. Entitled the Maritime Zones Act, the law was approved by the National Assembly under the previous Government. It entered into force by Presidential decree 1 August 1977.

Under the terms of the Act, the limit of the territorial waters is fixed as the line every point of which is at a distance of 12 nautical miles from the nearest point of the baseline (determined in accordance with the straight baseline system). In addition, the exclusive economic zone is defined as the area beyond and adjacent to the territorial waters extending to a distance of 200 nautical miles from the baseline. The Act also defines the continental shelf and enumerates Seychelles' rights with respect to the exclusive economic zone and the continental shelf.

With respect to foreign ships, the Act stipulates that all foreign ships (other than warships, including submarines) shall enjoy the right of innocent passage through the territorial waters. Foreign

warships, including submarines, may enter or passthrough territorial waters after giving notice to the President's office. Submarines, however, must navigate on the surface and show their flag while passing through the territorial waters.

At the present time there is little or no economic activity within the claimed exclusive economic zone. However, the government does plan to make a major effort, with French, British, and perhaps Soviet assistance to develop a fishing industry both to feed the local population and for export. Furthermore, the government recently signed an offshore oil exploration agreement with an international consortium.

The government news agency has reported that Mauritius simultaneously promulgated a similar Maritime Zones Act. It indicated that both laws had been the subject of negotiation and collaboration between the two governments intended to avert any problems arising from overlapping jurisdictions. (Source: U.S. Embassy, Victoria; IFR-77/184.)

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## Canada's Atlantic Coast Fish Landings Drop Off

Landings in Newfoundland, New Brunswick, Nova Scotia, and Prince Edward Island have declined from 328,823 metric tons (t), in the first half of 1976 to 232,438 t during the same period in 1977 or by 29 percent, according to a report from the U.S. Consulate in Halifax, Nova Scotia.

Newfoundland's landings through June 1977 totaled 116,713 t, a decline of 25 percent from the 155,488 t caught during the same period in 1976; they were worth approximately US\$24 million, compared with US\$28 million for the first half of 1976.

Landings in the Maritime Provinces (New Brunswick, Nova Scotia, and Prince Edward Island) totaled 115,725 t through June 1977, a decline of 33 percent from the 173,335 t caught during the same period in 1976. There were marked decreases in landings of both redfish and herring, which declined by 86 and 65 percent respectively. Landings in the Maritimes were worth about US\$42 million, while landings during

the first half of 1976 were valued at US\$54 million.

Decreased landings on Canada's Atlantic coast were due to a variety of factors. In Newfoundland, a strike immobilized the trawler fleet from 20 December 1976, until the end of January 1977. Redfish stocks were over-exploited during 1976 leading to the imposition of severe quota restrictions on that species for 1977. In the Maritimes, a harsh winter adversely affected fishing conditions with resulting lower catches, particularly of herring and mackerel.

According to the NMFS Office of International Fisheries, representatives of Environment Canada's Fisheries and Marine Service (FMS) were apparently unconcerned over the decline in landings during the first half of 1977. Noting that transitory factors such as weather could affect short-term fishery landings, FMS representatives emphasized that Canada's 200-mile fisheries zone had only recently been

established and that rebuilding Canada's Atlantic fisheries would necessarily take many years.

## New Fishery License System Studied for British Columbia

An intensive study of the licensing system for the British Columbia fisheries is being made, according to Canadian Fisheries Minister Romeo LeBlanc. The study will provide recommendations for future licensing and fee structures and is expected to be completed early this year. Sol Sinclair will direct the study. The object of the study is to ensure the optimum resource utilization of both commercial and sport fisheries for Canadian fishermen.

LeBlanc said that the study is particularly necessary in view of both Canada's extension of fisheries jurisdiction to 200 miles and the announcement of the Salmon Enhancement Program for the west coast. Also, radical advances in fishing techniques have led to larger and more efficient vessels, producing distortions and inadequacies in the present licensing system.

While the study is underway, there is a moratorium on all transfers of tonnage to salmon purse-seiners from vessels using other types of gear. This measure prevents Canadian fishermen from

catching larger amounts of salmon by using the more efficient purse-seiners and thereby protects the salmon stocks from overexploitation.

Sinclair will be consulting with representatives of fishermen's organizations and other sectors of the fishing industry through spring 1978 by discussing licensing in fishing centers of British Columbia to ensure the broadest possible communication with industry groups.

Sinclair has been a member of the Fisheries Research Board of Canada for

10 years and a member of the Canadian Fisheries Advisory Council under both Romeo LeBlanc and his predecessor, Jack Davis. Sinclair has conducted a thorough study on salmon and halibut licensing for the Pacific region in 1958 and he has also worked in an advisory capacity for the Manitoba government concerning the commercial fishing industry in Lake Winnipeg. For the past 8 years, he has been chairman of the Advisory Committee to the Freshwater Fish Marketing Corporation. (Source: IFR-77/169.)

## EC FISHERY AID TO LDC'S DROPS

The European Communities' (EC) aid to Less Developed Countries (LDC's) is granted through the European Development Fund (EDF). EC aid for fisheries development is also administered by the EDF though to date it represents only 0.75 percent of the total EDF aid to the LDC's (Table 1).

Total EDF aid for fisheries has been declining steadily since the Fund was organized in 1958. The main reason for this decline during the three EDF program periods has been the LDC's lack of interest in fisheries development.

Most fishery aid projects have concentrated on creating infrastructure in the recipient countries (Table 2). In keeping with this trend, a number of fishery development projects planned for the fourth EDF program period will be geared towards improving fish transportation and processing techniques, a major obstacle to fisheries development in the LDC's. Projects will be undertaken in Gambia, Guinea-Conakry, and Ethiopia. In Uganda and Guyana efforts will be made to begin fish meal production.

Additionally, aquaculture projects will be initiated in Benin, Kenya, Lesotho, Swaziland, and Zaire. Emphasis has been placed on developing a country's artisanal sector rather than its deep-sea fishery. For development of the latter, EDF planners prefer to rely on joint ventures between the LDC's and more developed countries. (Source: IFR-77/179.)

Table 1.—Percentage of fisheries aid to developing countries from EDF funds through 1976<sup>1</sup>.

Projects funded	EDF 1	EDF 11	EDF 111	Total
Total	522,589	727,939	870,387	2,120,915
Fisheries	8,623	4,325	2,926	15,874
% of total	1.65	0.59	0.34	0.75

<sup>1</sup>In European units of account (EUA). 1 EUA = US\$1.13. Source: *The Courier*, January-February 1977.

### Norwegians Study Salmon Cholesterol

A Norwegian research team has found that the salmon (*Salmo salar*) produces the same type of cholesterol as humans. In the spring, prior to spawning, the salmon is saturated with this fatty substance; however, when the salmon begins its spawning migration it produces an enzyme which breaks down the cholesterol and provides the burst of energy necessary for the salmon to reach its spawning grounds. It is this enzyme that the Norwegian team is trying to identify. If successful, it is expected that experiments with the enzyme will be conducted on humans. (Source: IFR-77/186.)

Table 2.—Funds allocated for fisheries projects by the European Development Fund since 1958.<sup>1</sup>

Country	Title of project	EDF	Amount in EUA
Benin	Cotton fishing port	EDF II	624,000
	Study of extensions to the Cotonou fish port	EDF III	110,000
	Superstructure for Cotonou fishing	EDF III	540,000
Ivory Coast	Abidjan fish port	EDF I	1,390,000
	New fish quay at Abidjan	EDF II	1,470,000
	Loan on special terms		1,045,000
	Fish preservation	EDF II	2,000
Congo	Study for a fish quay at Point Noire	EDF II	88,000
Mali	Development of fisheries in Mid-Niger (hydrology laboratory)	EDF I	151,000
Mauritania	Development of fisheries	EDF III	2,126,000
	Fish port at Port Etienne	EDF I	2,876,000
	Completion of Port Etienne fish port	EDF II	1,096,000
Senegal	Fish quay at Dakar	EDF I	661,000
Somalia	Study of the development of fisheries	EDF III	150,000
St. Pierre, Miquelon	Fish port on Saint Pierre	EDF I	3,545,000
Total			15,874,000

<sup>1</sup>1 EUA = US\$1.13.

Source: *The Courier*, January-February 1977