INTERNATIONAL

Government Experts Report on Expanded Nordic Economic Cooperation

Fisheries will play an important role in any expanded Nordic economic cooperation in the future. Long-term discussions underway revolve around the question whether expanded Nordic cooperation is preferable to the possibility of joining the European Common Market. A summary of the proposal for increased cooperation made by Nordic government representatives follows.

The cornerstone in the plan is establishment of a Nordic customs union over a 5-year period. Then, the 4 countries would have a common external tariff system and free trade within the Nordic area. A preliminary review indicates that, in general, the proposed Common Nordic duties for fish products would represent increases over existing Danish duties.

Price Stabilization

The main fisheries proposal, introduced by Norway, calls for a system to stabilize first-hand prices for fish at Nordic landing ports. The 4 countries either would establish a market-regulating agency, or expand the existing marketing apparatus to make the market-regulating system work.

Each national regulating agency would have these objectives: (1) to set minimum prices on fish landed, (2) limit supplies of fish to the market for human consumption when necessary to maintain established minimum prices, (3) to regulate supplies with regard to each port's capacity to secure best possible utilization of landings, and (4) to regulate, and perhaps stop fishery when necessary to prevent market collapse. Operations of the national market-regulating agencies would be financed by a landing fee, collected by each agency, not over 3% of value.

Crisis Funds

If market conditions deteriorate and the national agencies prove inadequate, 2 common Nordic crisis funds might be used: One would be established for herring and mackerel market, the other for cod, haddock, coalfish, pollock, and plaice. Each fund would be administered by a special inter-Nordic coordinating agency; the latter would also consult with the national agencies to set minimum prices. Separate funds and coordinating agencies are required for these 2 catgeories of fish. This is because herring and mackerel are, to some extent, sold as food for humans--but mostly go into meal and oil production. The price system must accommodate these 2 uses.

The crisis funds would be established by annual appropriations from Nordic countries of about US$4.3 million, until the two-fund total was about US$21.4 million. If the marketing situation deteriorated beyond the control of the national agencies, money could be allocated from the crisis funds for price-support payments--or to buy and store surplus fish to regulate market. Provision would be made to replenish crisis funds.

The Norwegian proposal does not cover fully the method of setting minimum prices. It proposes merely that prices for fish in landing ports be set in relation to one another, according to differences in freight rates to the major markets for Nordic fish.

Herring & Mackerel

For herring and mackerel, coordinated minimum prices would be set to enable full exploitation of the human food market. Fish that could not be sold at or above minimum price would be withdrawn from market. These would be sold for animal feeding, or to produce meal and oil. Most of surplus would go for meal and oil; a Nordic-wide guaranteed price would be set.

The guaranteed price would be maintained by the national agencies through regulation or stoppage of the fishery. If these were inadequate, support payments could be made from crisis fund for these species.

5 Food Fish Involved

For the 5 food fish involved, coordinated minimum prices would also be set (as outlined above) when these 5 are sold fresh for

human consumption--or for freezing, canning, or salting. A minimum price for dried fish might be set in North Norway, the only Nordic area where it is produced in significant quantities. Whenever necessary to maintain minimum prices, food fish that could not be sold to people would be withdrawn from the market and sold for animal feeding or industrial use. The national agencies would regulate the fisheries.

When marketing difficulties were severe the food-fish crisis fund could be used to guarantee prices of fish purchased for storage to regulate market. It could also extend guarantees for production of certain quantities of processed fish, and possibly undertake to buy up stocks to assure continued production. If continuation of these measures were no longer justified, the national agencies would further curtail the fisheries.

Difficulties Expected

Implementation of price stabilization would make possible direct landings of fish in the 4 countries without discrimination. It is proposed further that funds would be made available for structural improvements. The plan assumes various restrictions on fishery trade would be removed when the customs union begins, although considerable difficulties are anticipated in the liberalization process.

The report also urges further cooperation in: (1) exports to third countries, including desirability of Nordic-wide minimum export prices for certain fish products, (2) commercial policy, especially with regard to a common Nordic stand on European Communities actions, (3) aid to developing countries, and (4) marine research, product development, and marketing. (U.S. Embassy, Copenhagen, Jan. 31, 1969.)

Prospects for European Industrial Fisheries

The 1969 Norwegian winter herring catch was predicted to be about 370,000 metric tons, assuming normal weather conditions. Herring arrived off Norway in mid-Feb. Bad weather held last year's catch to only 26,000 tons; 370,000 to 560,000 tons had been predicted. Catches of this stock fluctuate greatly from year to year. Weak year-classes in 1965, 1966, and 1967 were expected to hold catches down in 1968-70.

Summer Herring

The Icelandic summer herring fishery takes place after winter herring finish spawning and leave the Norwegian coast. Although the 1968 summer season was not successful, a more normal catch is expected this year.

Capelin

The capelin fishery off North Norway is subject to wide fluctuations--the 1968 catch exceeded 450,000 tons--but scientists will say only that there is hope for a reasonably good fishery in 1969.

North Sea Herring

Earlier, it was predicted that total North Sea herring catches by all countries would stabilize at 650,000 to 700,000 tons annually. With careful management the catch could possibly increase somewhat. However, reduced abundance of the aging 1963 year-class and lesser strength year-classes since 1963 indicate this stock will decline. Norway's share in 1969 is expected to be about 300,000 tons.

Mackerel

A large quantity of young mackerel entered the North Sea mackerel fishery in 1967. At the same time, the harvest of older mackerel had begun to diminish. Because it is uncertain whether this stock is overfished, results of the 1969 season will be watched with interest. Biologists state for management purposes that the catch should not exceed 450,000 tons; it was 868,000 tons in 1967 and 770,000 tons in 1968. (U.S. Embassy, Copenhagen, Feb. 11, 1969.)

1968 World Fish Meal Production Was 6% Over 1967

Total fish meal production in International Association of Fish Meal Manufacturers (IAFMM) countries increased 6% in 1968 to 3.8 million metric tons. Substantial production increases were reported in Canada, Chile, Denmark, U.K., Peru, and S. & S.W. Africa. W. Germany, Norway, and Iceland

lowered output in 1968, especially Iceland, where production dropped 53% from 1967.

	1/1968	1/1967
	(Metric Tons)	
Belgium	4,560	3,780
Canada	122,498	89,434
Chile	187,243	130,866
Denmark	222,770	149,261
France	13,200	13,200
West Germany	69,697	77,065
Sweden	8,029	7,824
United Kingdom	88,717	80,487
United States	190,725	167,154
Angola	3/ 37,457	44,763
Iceland	53,242	112,849
Norway	401,932	491,562
Peru	1,922,020	1,815,983
So. Africa (including S.-W. Africa)	471,142	351,928
Spain	53,000	43,600
Morocco	2/	35,000
Total	3,846,232	3,614,756

1/Revised.
2/Data not available.
3/Jan.-Oct. only.
Note: Japan does not report fish meal production to IAFMM on a monthly basis at present. Estimate for 1968 of fish meal and other animal meal (mostly fish meal), is 440,000 metric tons; 387,000 metric tons in 1967. (Foreign Agricultural Service, Tokyo, Oct. 1968.)
Source: IAFMM.

FEO Fish Meal Exports Rose 20% in 1968

In 1968, over 3.1 million metric tons of fish meal were exported by members of the Fishmeal Exporters Organization (FEO), almost 20% more than in 1967. An increase of 500,000 tons from Peru and about 70,000 from S. and S.W. Africa more than made up for Iceland's tremendous decline. Entering 1969, stocks were lower for every FEO country except Chile. In 1968, FEO countries produced 82% of total world fish meal production (excluding Japan and USSR).

Country	1968	1967
	(Metric Tons)	
Angola	1/	37,810
Chile	167,191	111,199
Iceland	60,632	135,008
Norway	432,048	487,516
Peru	2,083,205	1,560,900
S. and S.W. Africa	353,407	285,951
Total	3,096,483	2,618,384

1/Data not available; 35,500 tons through Oct. 1968.
Source: Fishmeal Exporters Organization.

Marine Oil Production

World marine-oil production in 1969 is expected to increase slightly from 1968. This estimate reflects anticipation of further expansion in fish oil output and a possible increase in baleen whale oil. Sperm whale oil production probably will remain around 1968's volume.

It is difficult to predict world production of fish body and liver oils because of these developments: (1) recent reports of reduced oil yields in Peruvian anchovies, together with a 4-week "Veda," or stoppage, that began Feb. 1, and a reduced catch; (2) probable improvement from the poor 1968 herring-oil output in Norway and Iceland; (3) sharp increases in 1968 output in Chile, Denmark, and S. & S.W. Africa, possibly continuing at a lesser rate; and (4) large stocks in some producing countries and relatively low prices may tend to discourage fishing.

Estimated World Marine Oil Production

	1969	1968	1960-64
	(1,000 Short Tons)		
Marine Oils:			
Whale	105	100	356
Sperm whale	150	150	137
Fish (including liver)	1,150	1,125	687
Total	1,405	1,375	1,180

Scandinavia Important Factor

Assuming that Peru's output declined by 15%, and that no significant increases come from other countries, then any significant change in output must rest on likelihood and extent of a recovery in output from Norway and Iceland. Since a 10% improvement from their estimated combined 1968 output could more than offset the expected decline in Peru, any recovery beyond that would increase world output. Such an improvement is expected. And, with possible increases by minor producers, would result in some increase, possibly 2-3% above last year. In case the estimated increase does not materialize, stocks are sufficiently large to cover near-term requirements.

Whale Oil

Breaking the downtrend that has persisted since 1961, production of baleen whale oil this year is expected to increase by about 5% from 1968's estimated low of 100,000 short tons. Any increase will be largely contingent on

fulfilling the Antarctic quota of 3,200 blue-whale units (BWU) at an average outturn of 21 tons per BWU. This year's Antarctic quota remained unchanged from the year before, when the catch was only 2,801 BWU. This yielded an average of 21.1 tons per BWU. Partly offsetting the expected increase in Antarctic production, pelagic output from the North Pacific may decline somewhat due to the International Whaling Commission's decision to reduce the catch of fin whales. Japan, the Soviet Union, and Norway now provide about 90% of the world output, largely from Antarctic catch.

Sperm whale oil production which is subject to the Antarctic quota agreement is not expected to differ significantly this year from 1968. However, it is expected to be 10% above the 1960-64 average. Soviet output has sharply expanded in recent years; it is now over three-fifths of the world total. Numerous small producers have either cut back or ceased operations. Most expansion in recent years has been in North Pacific pelagic catch, while output from shore stations outside the Antarctic has continued to decrease. Production from other major areas, including Antarctic pelagic output, remains at about 1960-64 average. ("World Agricultural Production and Trade," Jan. 1969.)

Thermal Pollution Endangers Fish

Trout, salmon, and other fresh-water fish are increasingly threatened by hot effluents from industrial plants. Danger of "thermal pollution" is greatest in rivers and streams where electric and other power plants discharge water heated to between 43°-61° F. This often is deadly to fish, their eggs, and the organisms on which they feed. Thermonuclear plants generate very high temperatures, making them a particular threat.

Dangers of Heat Change

Fish, as cold-blooded creatures, are extremely sensitive to heat changes, particularly to sudden changes. During spawning, a temperature increase of only 2 to 3 degrees can be fatal. Increased temperatures also can be indirectly harmful, weakening the resistance of fish to disease, reducing the essential oxygen in the water, or augmenting toxic effects of organic pollutants.

EIFAC Recommendations

The problem has been cited by the European Inland Fisheries Advisory Commission (EIFAC) of the Food and Agriculture Organization. EIFAC seeks to promote inland fisheries in Europe. The 21-nation Commission is drafting international water-quality criteria to combat pollution affecting freshwater fish.

Benefits from Heated Water

EIFAC points out, however, that with certain species, such as carp, controlled hot effluents can be beneficial. They may provide warmth for better spawning and feeding conditions and aid in maturation of eggs. Roach, a coarse fish now popular with European anglers, actually thrives in U.K. streams where hot effluents remain tolerable.

Carp Bred in Heated Water

In Poland, where common carp usually do not propagate in natural waters, the report states, the species has reproduced successfully in artificially heated Lake Lichen. Carp's tendency to congregate in heated effluent outfalls has led to Soviet attempts to breed them in floating cages in heated water reservoirs.

Thermal Pollution Endangers Salmon

In North America, thermal pollution is considered a severe challenge to the great salmon runs of the Columbia River. A study of the biological effects of thermal pollution there is under way. The trout and salmon resources of northern streams in other countries may be similarly endangered. The work of EIFAC supplements that in the U.S., where the latest report on water-quality criteria, by the National Technical Advisory Committee, emphasizes preserving fish stocks from increased heat loads. (FAO News.)

Japan & Canada Conduct Joint Whaling Venture

The Atlantic Whaling Co., Saint George's, Nfld., was formed in July 1967 by Taiyo Fishing Co., Japan, and Fishery Product, Ltd., Canada. It has been performing successfully.

The company is capitalized at US$100,000; Taiyo holds 49.5% interest. It catches and processes fin whales, and operates one chartered whaling vessel, 'Fumi Maru No. 15' (499 gross tons), out of the shore plant at Williamsport.

Catch & Production

In 1967, Fumi Maru caught 262 fin whales, exceeding an assigned quota of 250; in 1968, it fulfilled the reduced quota of 219.

The whales are processed at the shore plant. The plant can process 4 whales and freeze 35 tons of meat a day. The whale meat, exported primarily to Great Britain, also goes to other European countries, including West Germany and the Netherlands. A limited quantity is marketed locally. Export price for frozen whale meat is around $253 a ton. ("Suisan Keizai Shimbun," Jan. 30, 1969.)

Japan & USSR Hold Crab-Fishing Conference

A Japanese-Soviet crab conference began in Moscow on Feb. 6. The USSR called the conference to discuss Japanese crab fishing in connection with the Soviet Continental Shelf declaration announced Feb. 1968.

Again, as in the 1968 Japan-USSR fishery negotiation in Moscow, the Soviets may attempt to ban Japanese crab fishing in the Northwest Pacific, on the basis of the Continental Shelf concept.

The Japanese delegation was led by Iwao Fujita, Vice-President, Japan Fishery Society. Minister of Fisheries Alexander Ishkov headed the Soviet delegation. ("Suisancho Nippo," Jan. 30, 1969.)

Fear Depletion of North Sea Fishery Resources

Two-hundred scientists from 14 countries have warned that if drastic antipollution measures are not taken soon, the entire North Sea flora and fauna will be threatened. They fear that North Sea fishery resources will be destroyed in the near future, according to the official organ of the Soviet Ministry of Fisheries. The report also stated that the scientists have appealed to governments and international organizations to intensify research aimed at solving the problem of ocean pollution--especially North Sea.

North Sea

The report pointed to the highly developed industries and high population density of the North Sea coastal nations. Their rivers discharge huge amounts of wastes into the sea and into the extremely shallow coastal waters, where insignificant tidal phenomena prevent self-purification of the waters. ("Rybnoe Khoziaistvo," Nov. 1968.)

Without specifically mentioning pollution, the Minister of Agriculture and Fisheries of The Netherlands has said that the North Sea virtually could be written off as a fishing ground. He noted that over the past 3 years herring catches have dropped 50%. The Netherlands Ministry is considering financial assistance for fishing enterprises forced to look for new grounds outside the North Sea because of this situation. (U.S. Embassy, The Hague, Jan. 31, 1969.)

FOREIGN

CANADA

PLANS FISHERMEN'S SCHOOL

A first-of-its-kind training school for fresh-water fishermen is being built at Hnausa, Manitoba, west shore Lake Winnipeg. Already it is attracting considerable interest from the fishing industry across Canada.

The school is based on research findings indicating commercial fishing in Manitoba is changing rapidly; also, that it will change further when the proposed fish-marketing board paves the way for orderly marketing, more stabilized prices, better quality control, and more efficient operation.

A comprehensive training program was needed because existing skills and knowledge in the fresh-water industry are below standards necessary to attain maximum benefits from a change in marketing. When the new school opens this year, training will be tied in with real situations, using practical methods, on the site of fresh-water fishing.

Fish-Demonstration Station

The school is a fish-demonstration station to cover all phases of production--from actual setting and lifting of nets through final product. Classroom and practical instruction courses will be aimed at imparting management skills and techniques necessary to operate a station. The students will be fishermen with some knowledge and perhaps limited experience of fishing. They will be exposed to new types of fishing gear and advanced fishing methods in classroom and in the water.

The first class of 25 has been enrolled for a course beginning in March 1969, when the school and its facilities are scheduled to be completed. The school has adequate area to expand. ('Fisheries of Canada,' Jan. 1969.)

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CONFERENCE ON QUEEN CRAB SCHEDULED

A 2-day conference on the queen crab fishery was held March 4-5 in Fredericton, N.B., Canada. Minister of Fisheries Jack Davis and New Brunswick Premier Louis J. Robichaud were guest speakers.

The conference was sponsored by the Federal Department of Fisheries in cooperation with the Maritime Provinces, Quebec, and Newfoundland. It brought together specialists and industry personnel for discussions about the development and management of the new fishery. Papers were presented on catching, processing, and marketing.

Fishery Booms

The phenomenal growth of the queen crab fishery on the Atlantic Coast was a highlight of Canada's fisheries in 1968. In the past 4 years, the catch has grown from nothing to 10 million pounds in 1968. Landings are expected to double in 1969.

The queen crab fishery has provided a new source of revenue to many fishermen and plant workers. It is a valuable export commodity. (Canadian Department of Fisheries, Jan. 27, 1969.)

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QUEBEC DOES NOT RENEW FISHING SUBSIDIES

The Province of Quebec has not reinstated the ordinary fishing subsidies it dropped in fall 1968, when Federal fishing subsidies began, even though the government abandoned its fishing-subsidy program in the meantime. A Quebec official hopes that something can be worked out between Canada and the U.S. to alleviate the plight of Quebec fishermen. He adds, however, that no subsidy plans were under consideration at Quebec. (U.S. Consul, Quebec, Feb. 20, 1969.)

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'GREENLAND TURBOT' PROMOTION BEGINS

The Dept. of Fisheries and the Dept. of Trade and Commerce plan to exhibit 'Greenland turbot' at the Pacific Fine Foods Fair in Los Angeles, June 1969. This is a move to promote acceptance as 'Greenland turbot' of the fish previously marketed as 'Greenland halibut.' Late last year the U.S. banned sales of this fish as halibut. (U.S. Consul, St. John's, Feb. 14, 1969.)

EUROPE

Norway

LANDINGS DECLINED IN 1968

In 1968, Norwegian fishermen landed 2.6 million metric tons of fish--15% less than in 1967. Chief cause of the decline was a 42% drop in the herring catch and an 11% drop in mackerel landings. Fortunately, 1968 was a good year for capelin, which are used for fish meal. This averted a totally disastrous year. ('Fiskets Gang,' Dec. 1968, No. 52.)

	1/1968		2/1967		1966		1965	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	1,000 Metric Tons	Million Kr.	1,000 Metric Tons	Million Kr.	1,000 Metric Tons	Million Kr.	1,000 Metric Tons	Million Kr.
Mackerel	770	177	868	202	484	183	158	74
Herring	702	166	1,215	286	1,186	404	1,079	355
Capelin	522	50	403	49	380	68	217	31
Cod	238	303	200	260	197	262	188	242
Saithe	79	51	128	81	143	96	131	85
Norway pout	66	8	14	2	25	6	61	11
Haddock	48	55	40	45	63	72	50	60
Dogfish	20	14	16	13	16	14	19	14
Greenland turbot	19	18	15	14	14	14	15	14
Cusk	17	18	17	20	15	17	20	22
Other	91	162	113	212	131	200	141	199
Total	2,572	1,022	3,029	1,184	2,654	1,336	2,079	1,107

1/Preliminary.
2/Revised
Note: 7.135 Kr.=US$1.

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STOCKFISH MARKETING PROSPECTS ARE GOOD

Commercial sales of Norwegian stockfish have shrunk drastically since spring 1967, and nothing indicates early improvement in marketing prospects. Some North Norwegian communities depend almost entirely on stockfish production, so concern has been voiced repeatedly by the press, Parliament, government, and fishery organizations.

Small Sales, Large Inventories

The reduced sales are due almost exclusively to the drop in demand from Nigeria, the number one market for so-called "African quality" stockfish. Commercial deliveries, mostly to the Province of Biafra, decreased from more than 17,000 metric tons--70% of all Norwegian stockfish exports--before the civil war, to only a few hundred tons in 1968. Sales of prime quality stockfish were also somewhat sluggish during 1968, presumably because buyers abroad anticipated price reductions due to increasing Norwegian inventories. Despite substantial state purchases, stockfish inventories in mid-Feb. 1968 were about 12,000 tons (excluding 6,700 tons of state-purchased fish distributed to relief agencies), or one-half of a normal year's production. Judging by officially projected production for 1969 and current marketing prospects for both prime and "African" quality stockfish, inventories could increase to about 18,000 tons during 1969 unless some is purchased by government and/or relief agencies.

Government Assistance

To maintain a minimum production of stockfish, the Norwegian Government has effected measures, including interest-free loans and state guarantees to producers and exporters. These measures claimed nearly US$28 million in state funds in 1968 alone, including $9.5 million for state purchases of about 14,000 tons of "African quality" stockfish. The rationale for them is to support North Norwegian fishing communities heavily dependent on stockfish production and to ensure output of prime quality stockfish, which commands high prices in such European markets as Italy, Sweden, and Finland.

Year	Production	Exports	Year-End Stocks
	(Metric Tons)		
1968	21,600	16,700	19,000
1967	23,000	18,900	16,500
1966	25,200	26,000	14,000

Norway (Contd.):

Commercial exports were less than 10,000 tons in 1968 since 7,000 tons of the total were state-purchased fish distributed abroad through the World Food Program, the Red Cross, and the Norwegian Church's Relief Organization.

Prospects

Norway will produce an estimated 15,000 to 16,000 tons of stockfish in 1969. Nigeria cannot be expected to resume stockfish purchases in the foreseeable future, and development of new markets in Africa cannot be anticipated in the short term. Therefore it is reasonable to assume that commercial exports of Norwegian stockfish in 1969 will remain at the 1968 level of about 10,000 tons. This means that stockfish inventories will swell to about 18,000 tons at the end of the year if no measures are taken to dispose of surplus production. No such plans have been announced by the government, but state guarantees have been extended for a maximum of about 9,000 tons of the 1969 "African quality" stockfish production. (U.S. Embassy, Oslo, Feb. 21, 1969.)

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MIXED REACTION TO
U.K. TARIFF ON FROZEN FISH

Findus, one of Norway's major fillet exporters, reports adverse effects on its frozen fillets exports to the U.K. since Britain imposed a 10% import duty late last year. Frionor, another firm, claims it is too early to predict ultimate effects of new duty on its 1969 exports to Britain.

Before the 1967 pound devaluation Britain was Findus' largest market, taking some 34% of its total exports. After devaluation, fillet block exports dropped about 40%, while Findus' volume of consumer-packed fish continued at the same level even at considerably reduced prices. Before the 10% was introduced, Findus had succeeded in restoring sales to the pre-devaluation level. Under the new duty, Findus' customers can cover their requirements from other suppliers, mostly British, at prices with which Norway is unable to compete. Exports may be reduced even further if the 10% duty is maintained.

To Hold U.K. Market

Frionor says it has supplied only qualit products at high prices. It believes Britai a traditional market, will continue to requi Norwegian fish. The Norwegian fishing i dustry will not withdraw, but will take nece sary measures to retain this important ma ket.

Although British fishermen may bene competitively to some extent from the n duty, it may be that British demand for No wegian products will be such that adjustmen to increase prices will be made. Howeve Icelandic products will become more cor petitive in the British market. Iceland h not been a member of EFTA, and so has n benefited in the past from the reduced dut under EFTA arrangements. (U.S. Embass Copenhagen, Feb. 20, 1969.)

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BARENTS SEA HAS FISH
CONSERVATION PROBLEM

Rapidly diminishing resources of fis particularly cod and related species, in th Northeast Atlantic is one big unsolved prob lem, says Hallstein Rasmussen, Deputy Di rector, Norwegian Fisheries Directorat Fishermen seem unable to see beyond th present ample supplies of fish although the are some marketing problems abroad, not bly for stockfish. Scientific predictions drastic catch reductions in the immedi future seem to make no impression on fis ermen, who scooped up large quantities fish just outside the coasts of Troms a Finnmark during most of 1968. This appa ent paradox of good fishing and small f resources is explained by the fact that ca lin, a major food for Barents Sea cod and r lated species, stayed just off the coasts Troms and Finnmark for unusually long p riods in 1968. Catches of capelin for redu tion reached an all-time record in 1968 over 0.5 million metric ton.

Fish Scarce in Barents Sea

In the Barents Sea proper, outside t Norwegian fishery border, fishing was ve poor. The few trawlers, mostly Russia kept as close as possible to Norwegian wate to catch fish. If and when capelin leave Norwegian waters (as it often does), the will not be much other fish left either.

rway (Contd.):

source Management Needed

Conservation and replenishment of North-st Atlantic fish resources depend on much re comprehensive measures than those sidered so far. One plan would have na-s fishing in the Barents Sea reduce their ch from the current 400,000 metric tons ually to 250,000 tons. Even the latter fig-e is too high in the opinion of many Nor-ian marine biologists. The best solution, smussen says, would be a complete ban on wling, at least in areas known as feeding unds for fish before they reach maturity. ere should be no reason to ban longlines d handlines because they are much more lective than trawls. (U.S. Embassy, Oslo, n. 24, 1969.)

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RWAY FORBIDS DANISH OUT-EGG IMPORTS

Norway and Sweden have forbidden the im-rt of trout eggs from Denmark to prevent roduction of virus diseases, presumably ectious pancreatic necrosis (IPN). IPN peared on some Danish trout farms during 68.

ects of Ban in Norway

A Norwegian sports fishermen's associa-n at Lillehammer was forced to cancel an er for 300,000 Danish eggs. Other clubs some trout farms will also be affected. stantially increased trout egg output in rway is planned to relieve the shortage. S. Embassy, Copenhagen, Feb. 14, 1969.)

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PLORATORY FISHING IN LF OF MAINE

The Norwegian Institute for Marine Re-arch has chartered the distant-water long-er 'Pero' for a 2-month exploratory cruise tween Cape Race, Newfoundland, and Cape d. The investigations were recommended llowing failure of the cod fisheries off West eenland last year. Funds totaling US$68,000 e available for the work.

New Fishing Grounds

Pero sailed from Norway on Jan. 25, 1969, with a skipper who has fished porbeagle on these grounds. They are largely unknown to Norwegian cod fishermen, who have not fished at such great distances from their home ports before. Later, the exploratory fishing will be extended to grounds off West Greenland. (U.S. Embassy, Copenhagen, Feb. 14, 1969.)

Denmark

GREENLAND'S 1968 SALMON CATCH IS WELL BELOW 1967's

The 1968 catch of salmon in Greenland waters will probably total about 1,200 metric tons, or about 25 percent below the near-record 1967 catch of 1,588 tons. The 1968 inshore catch was less than half 1967's. It is presumed the presence of colder water was responsible. The catch of the offshore fishery more than doubled. This resulted from the larger number of vessels fishing and the excellent weather through most of the season.

Price Higher

The price paid for Greenland salmon was higher at the beginning of the 1968 season than in the previous year. It increased as the season progressed. Because fishing was lucrative this year, offshore fishing effort can be expected to continue increasing.

The joint tagging program of the International Council for the Exploration of the Sea and the International Commission for the Northwest Atlantic Fisheries was continued--but few fish were tagged. Northumberland T-nets were tested again, with little success. This may have been due to ice and hydrologic conditions obstructing fish from coming inshore. The low availability of fish in these waters is also indicated by poor results of inshore fishing by Greenlanders. (U.S. Embassy, Copenhagen, Feb. 4, 1969.)

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Denmark (Contd.):

FAROESE FISHERMEN'S STRIKE SETTLED

A strike by Faroese fishermen was called off Feb. 19, 1969, when they accepted a compromise proposed by a government mediator. The fishermen had wanted an increase in minimum monthly wage to US$267 and a reduction from 27 to 21 in long-line vessel crews. This would have increased each crew member's share of the catch. The full demands of the fishermen were not met, but the Faroese legislature has appropriated nearly US$1 million for minimum wage increases and for additional price support.

Last Strike in 1954

The strike was the first in the Faroe Islands since 1954. It began in early Dec. 1968 when the fishermen's association refused to approve the sailing of vessels to the main Faroese fishing grounds off Greenland and Newfoundland. The strike, formally declared at the end of Jan. 1969, included most of the Faroese fishing fleet. (U.S. Embassy, Copenhagen, Feb. 20, 1969.)

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SMALL HADDOCK POSE PROBLEM

Industrial fishermen from the North Sea port of Esbjerg found an abundance of small haddock when fishing resumed after the new year. Fifty percent or more of most catches were haddock smaller than the minimum size limit of 270 millimeters (10.6 inches). The Danish Fisheries Inspection Service, acting immediately, fined 50 to 60 Esbjerg skippers amounts up to US$800. It was thought that industrial fishing in Esbjerg might have to cease entirely for a time. In late January 1968, incidence of illegal haddock in the landings had declined. Some cutters had located places where "pure" catches of herring could be taken.

Fishermen Ask Relaxation of Regulations

Fishermen's association representatives met with the Ministry of Fisheries to ask a relaxation of regulations. After the meeting the Minister of Fisheries said that no basic change could be made because the regulations had been set in cooperation with other members of the North East Atlantic Fisheries Commission. He promised, however, that skippers would be treated as gently as possible under the circumstances.

Potential Market for Haddock

Although cod are highly esteemed as food for people, there is very little demand for haddock. Haddock were popular before 19 but "went out of style" as a food fish after period of scarcity; the market has never come back. Many haddock now abundant in the North Sea will exceed the minimum size in a few months, so there will be a possibility of landing them as food fish. Although fish exporters would buy more haddock in auctions, fishermen consider them more difficult to clean on board than cod and plaice, and may not believe the extra work worthwhile.

Landings in Previous Years

Total Danish haddock landings in 196 were 24,000 metric tons; only 6,400 tons were used for food fish, the remainder for industrial use. Total 1966 landings were 47,00 tons; 8,000 tons were sold for human consumption. Haddock exports were 4,800 ton in 1967 and 4,700 tons in 1966; most wa shipped fresh to West Germany, Sweden, an the U.K. (U.S. Embassy, Copenhagen, Ja 21, 1969.)

* * *

FISH MEAL, OIL, AND SOLUBLES PRODUCTION, 1967-68

	1968	1967
	. . (Metric Tons) . .	
Fish Meal.	219,079	145,35
Fish Oil.	70,198	61,19
Fish Solubles . . .	25,892	30,86

(U.S. Embassy, Copenhagen, Feb. 26, 196 Denmark's Statistical Dept. 1967 totals.)

Sweden

THE SHRIMP TRADE

Sweden's West Coast Fishermen's Association recently asked the government to restrict shrimp imports, but in late Jan. the government decided not to act. Swedish fishermen landed 1,251 metric tons of cooke

eden (Contd.):

rimp in 1968, compared with 1,154 metric
s in 1967. In addition, a small quantity of
v shrimp has been delivered to canneries
ch year. Imports of shrimp in 1968 are
timated at more than 2,000 metric tons.

edish Shrimp vs. Imported

Almost all imported frozen shrimp sold in
eden has been described as "Canadian
rimp." In Goteborg, some stores sell only
edish shrimp, and some sell both Swedish,
nadian, and Norwegian shrimp. One re-
ler, refusing to sell frozen Canadian
rimp, has appealed to his colleagues to
llow his example. "Support Swedish fish-
men--buy Swedish shrimp" is the text on a
reamer in the store window. Imported
rimp prices are from 20% to 30% lower
an domestic. Swedish shrimp is generally
nsidered to be higher quality than imported
rimp.

S. Exports

The U.S. has developed a lucrative shrimp
ade with Sweden. In 1968, the U.S. exported
7,181 lbs. of fresh, chilled, unpackaged
rimp valued at $474,147; 415,269 lbs. of
sh, chilled, packaged shrimp valued at
03,079; and 817,068 lbs. of frozen shrimp
rth $540,849. (U.S. Consul, Goteberg, Feb.
1969.)

ited Kingdom

ITE FISH AUTHORITY
ISES INTEREST RATES

The British White Fish Authority has an-
nced new interest rates on loans made
m Dec. 21, 1968.

On loans for fishing vessels, new engines,
s and gear:

Less than 5 years, $8\frac{3}{8}$%--up $\frac{1}{8}$%.

More than 5, but less than 10 years, $8\frac{1}{2}$%--
$\frac{1}{4}$%.

More than 10, but less than 15 years, $8\frac{1}{2}$%--
$\frac{1}{4}$%.

More than 15, but less than 20 years,
$8\frac{5}{8}$%--up $\frac{1}{8}$%.

On loans for processing plants:

Less than 5 years, 9%--up $\frac{3}{8}$%.

More than 5, but not more than 20 years,
9%--up $\frac{1}{4}$%.

Rates on loans made before Dec. 21, 1968,
are unchanged. ("Fish Trades Gazette," Jan.
11, 1969.)

West Germany

A REVIEW OF
WEST GERMAN OCEANOGRAPHY

From 1962-1968, the German Research Association (DFG) provided almost US$1.25 million annually to supplement government funds for oceanographic research. This support was greatly responsible for progress German scientists have made trying to catch up to France and Britain--and to regain position of eminence once held by German oceanographers.

The support of DFG, the Federal Government, and 4 coastal states resulted in considerable expansion of oceanographic efforts. During the 5-year period beginning in 1962, the number of scientists and technicians increased from 253 to 527. A fishery research vessel, 'Walter Herwig' (1963), research vessel 'Meteor' (1964), Bundeswehr research vessel 'Planet' (1967), and research cutters 'Alkor' and 'Friedrich Heinicke' were launched to supplement the work of the 2 then-existing ocean-going research vessels, 'Gauss' and 'Anton Dohrn.'

Growth Plans

Germany's annual marine research budget is now only about one-third the French and British budgets. Despite this, Science Minister Stoltenberg included marine research as a special area of his ministry and established the German Commission for Oceanography.

The Science Ministry will further consolidate earlier DFG-supported work through long-term planning and financing. Present plans call for 54 more scientists, about 100

West Germany (Contd.):

more technicians, and construction of an 800-GRT research vessel and 3 research cutters. The research vessel would be used in the Baltic and North Seas and North Atlantic. The two cutters would replace older vessels.

European Pooling of Effort

Programs are also under consideration to build artificial islands and place measuring buoys in the North Sea and Baltic Sea. Construction of a major laboratory, with wave-simulation tanks and rotation pools for hydrodynamic experiments, faces financial problems.

DFG realizes that requirements for oceanographic instruments would not be great enough to encourage national industries in Europe to conduct research and development necessary to develop technology. DFG recommends a pooling of effort by European industries to develop and manufacture complex oceanographic measuring equipment. (U.S. Embassy, Bonn, Jan. 28, 1969.)

Netherlands

FISHERIES MINISTER NOTES
DECLINE OF NORTH SEA FISHING

The North Sea can virtually be written off as an important fishing ground, said Netherlands' Minister of Agriculture and Fisheries, P.J. Lardinois, in discussing his 1969 budget on Jan. 29, 1969. In the last three years, the Minister noted, herring catches had been halved.

He is now considering what financial assistance might be given to sound fishing enterprises forced to look for new fishing grounds outside the North Sea. (U.S. Embassy, Hague, Jan. 31, 1969.)

Iceland

DECLINE IN HERRING
DRASTICALLY REDUCES 1968 CATCH

Iceland's 1968 fishing catch dropped t 554,000 metric tons, a 40% decline from 196 and 55% from 1966, according to preliminar data. Most of the loss is attributable to th drastic decline in herring catches. Thes dropped from 895,600 tons in 1966 to 207,00 tons in 1968. (U.S. Embassy, Reykjavik, Ja 16, 1969.)

USSR

COUNCIL OF MINISTERS PRODS
MINISTRY OF FISHERIES

The Soviet Council of Ministers has adopte a resolution titled "Additional measures t improve the efficiency of the fishing fleet an improve the quality and expand the selectio of fishery products." The resolution note that implementation of earlier council deci sions to develop the fishing industry ha strengthened its technical and supply capaci ty, increased the fish catches, and improve the quality and variety of fishery product somewhat.

Failures of Ministry of Fisheries Cited

At the same time, because of weak lea ership by the Ministry of Fisheries, th powerful fishing fleet is not being used ef ficiently. Marketed products do not meet th consumer's demand for variety and qualit Steps to remove these shortcomings are n being taken. Output of edible fishery pro ucts lags considerably behind the increase i catch. This has a negative effect on the ec nomics of fishery enterprises. Consum demand for live and frozen fish, filleted fis fresh-salted herring, and cured, smoked, an delicatessen products is not being fully satis fied. There is not sufficient volume in out put of fishery products in packages with color fully designed wrappings.

Government Recommendations

The government has requested the Minis try of Fisheries to raise the efficiency of th fishing fleet. To achieve this, it is essenti

SSR (Contd.):

provide the fleet with an explored and studd report of available fish stocks in the world ean. The Ministry must develop and introce, during 1969-1970, cost effective vesselployment schedules for every area of rine fishing.

New types of vessels will be built and the et will be equipped with modern fishing ar and technological plants. Facilities to pair the fishing vessels' technical equipnt will be developed and training of qualid workers for ship repair trades will be panded.

To satisfy the demand for high quality and eat variety in fishery products, the Ministry s instructed to increase the catch of valule species during 1969-1970, expand proction of filleted fish and frozen semiprodts (not fully manufactured) on fishing vesls, and to develop commercial processing smoked, pickled, dried, cured, and delitessen fish products where they are conmed. By 1970, the Ministry also must asre an output of lightly and medium salted lmon products. ("Izvestiia," Jan. 28, 1969.)

* * *

OLICIES OF
ISHERY MINISTRY ATTACKED

Two recent articles in a Soviet literary ekly attacked the Ministry of Fisheries and inister A.A. Ishkov personally. The main arges were: (a) neglect of traditional inland heries; (b) excessive emphasis on marine heries, without due regard for fresh-water heries; (c) inadequate antipollution meases; (d) systematic overfishing in the Sea of zov.

arine vs. Inland

The articles reported that from 1913 to 67 total Soviet fisheries catch increased 0% but inland catch increased only 25%. he latter is a decline if one considers Soet population growth. Marine fishing is unonomic and wasteful: cost of one metric n for marine fish is 810 rubles (US$900), d for fresh-water fish 750 rubles (US$830), cluding transportation and storage costs. hese are much less, if not negligible, for esh-water fish since most of the catch is arketed on the spot.

The Fisheries Ministry's promotion policy is criticized as inadequate for encouraging the consumer to buy products from marine fish alien to Russian cuisine.

Water Pollution

Criticism was directed at the inadequate fight against water pollution. Ishkov's Ministry was accused of inefficiency since "no one there does anything about it." The Ministry's fish breeding, transplantation, and acclimatization practices were also attacked. The critic charged that it makes no sense to transplant fish to polluted water, where the resource has been destroyed and nothing is being done to clean the water.

The director of the Azov-Black Sea Research Institute for Fisheries and Oceanography is quoted as saying that nature, not man, is in control of reproduction and recruitment. We are far from influencing the qualitative and quantitative composition of fishery stocks through artificial fish-breeding operations.

Overfishing in Azov Sea

Overfishing in the Sea of Azov is said to have reached alarming proportions. Ishkov was criticized for evading the problem of the fishery kolkhozes (cooperatives) in the area. Where there are too many fishermen and too few fish, the result is widespread poaching and theft. Substantial quantities of fish, stolen from the kolkhozes, are sold at twice the regular price. Moreover, the Fisheries Ministry was accused of giving out inaccurate Azov Sea catch statistics. Actually, they are twice as high because of poaching.

Marine Fisheries Favored

The Fisheries Ministry also was criticized for pushing expansion of marine fisheries without too much concern about stock depletion, growing number of coastal states claiming ownership of Continental Shelf and extending their jurisdiction to 100 and even 200 miles offshore, and for not having "one single specialist on inland water bodies" on its staff. ("Literaturnaia Gazeta," No. 39, Sept. 25; No. 50, Dec. 11, 1968.)

[Comment: The author of the articles, Eligii Stavskii, may be incorrect about the inland catch data. According to official Fisheries Ministry statistics, inland catch for

USSR (Contd.):

1967 was about 810,000 metric tons. If the 1913 inland catch was 843,000 tons, this is a decrease of some 4%, not an increase of 25%.]

* * *

CATAMARAN TRAWLER TESTED SUCCESSFULLY IN NORTH ATLANTIC

A twin-hulled research trawler displacing 1,000 metric tons was successfully tested for a month in the Barents Sea. It is the first trawler of its kind in the world. The Kaliningrad-built vessel already had undergone navigation tests in the Baltic.

The Baltic tests proved the vessel easier to maneuver and more stable than conventional trawlers. The test cruise in the Barents Sea, during heavy winter storms, was intended to show whether the vessel could operate under toughest weather conditions. The test was fully successful.

Seaworthy

Scientific data on the vessel's navigational qualities showed that water pressure against the bridge connecting the hulls never exceeded 1.5 atmospheres, even during the heaviest seas. This section can withstand pressures up to 5.5 atmospheres. At wind force 10 on the Beaufort scale (wind speed between 55 and 63 miles an hour), she listed an average of 3 to 5 degrees, with a maximum list of 12 degrees. The deck remained dry, and the crew could work leisurely. On a conventional trawler, men could not have worked on deck for fear of being washed overboard.

* * *

OCEAN PERCH CLEANING MACHINE IN PRODUCTION

In 1967, the Vladivostok Machine Plant of the Far-Eastern Fisheries Administration manufactured the first machine for cleaning ocean perch. The gutting and cutting of ocean perch, a time- and labor-consuming operation, usually is performed manually in Soviet fisheries.

The semi-automatic production line, designed to process up to 180 fish per minute, virtually eliminates manual labor.

Tested Successfully

The machine was tested successfully aboard a freezer stern trawler of the Maritime Fisheries Administration, probably of Alaska. It is now ready for serial production. Four more semiautomatic ocean perch cleaning machines are nearing completion at the Vladivostok plant. ("Rybnoe Khoziaistvo," No. 9, 1968.)

* * *

CONFERENCE ON FISH BEHAVIOR

In late Feb. 1968, a conference on fish behavior, as related to fishing techniques and tactics, was held in Murmansk. It was organized by the Ministry of Fisheries to coordinate research on fish behavior, bring together scientists working on similar subjects in different institutes, and to formulate recommendations for future research.

PINRO Director A. P. Alekseev once said that "Soviet scientists are not behind foreign fish behavior scientists in a number of subjects. In certain subjects, for example in the formulation of theoretical principles and in the processing of collected test data, Soviet scientists are ahead of foreign scientists."

Subjects of Research

At Murmansk, 36 papers were presented on (1) fish behavior under natural conditions (2) fish behavior in the area of fishing gear (3) reactions of fish to an electric field, and to light, sound, and chemical stimuli; and underwater research techniques.

The papers will be published by the Ministry of Fisheries. Some papers dealt with hydrostat "Sever-1" and research on distribution and behavior of cod and haddock 500 meters just off bottom; hydroacoustic surveys determining behavior and distribution of Pacific hake and ocean perch; use of hydroacoustics in locating tuna concentrations; reaction of squid to light; and fish reaction to air curtain. Several scientists described the use of an underwater stereophoto camera. Authors and titles of papers are described in detail in the No. 6 issue of 'Voprosy Ikhtiologii' (1968), page 1117.

USSR (Contd.):

Recommendations

Soviet fishery scientists stressed the need to study Continental Slope fish stocks down to 1,500-2,000 meters as essential. This is because fishing on Continental Shelf already is fully developed--and availability of Shelf resources to Soviet fleets has decreased in recent years.

The following major research subjects were recommended for study: fish behavior under natural conditions, reaction to physical and chemical stimuli, experimental research on nervous system activities in fish, characteristics of vertical migration of fishes, and schooling behavior.

* * *

WHITE STURGEON AND STERLET CROSSBRED

An extraordinary cargo--fry of a new hybrid produced by crossing the white sturgeon and the sterlet--was airlifted a few months ago to Moscow from Rostov. Having inherited excellent taste qualities and the outer appearance of its parents, the hybrid has some new properties of great importance: it is more capable of growing and developing, and can be bred in ponds, while sterlet and white sturgeon live only in running waters.

The Rostov fry have acclimatized well in the ponds of the Moscow Region and grow in weight as fast as carps. (Novosti Press Agency.)

* * *

RESEARCH VESSEL CRUISES IN EQUATORIAL ATLANTIC

In early February 1969, the Soviet oceanographic vessel 'Akademik Kurchatov' left Kaliningrad on a 3-month cruise in the equatorial Atlantic. The scientists aboard will study ocean currents off Brazil, the Guianas, and in the Antilles. The vessel is expected to make port calls at Rio de Janeiro, Georgetown (British Guyana), and some islands in the Caribbean.

The expedition is headed by Dr. Vladimir Kort, the former Director of the Institute of Oceanology of the USSR Academy of Sciences. ("Vodnyi Transport," Feb. 4, 1969.)

* * *

RESEARCH CRUISE IN SOUTHWEST PACIFIC

A main purpose of the cruise of the Soviet research vessel 'Vitiaz' is to determine the viability of large-scale fish farming to increase the marine catches. M.E. Vinogradov, Deputy Director of the USSR Science Academy Oceanology Institute and head of the expedition, reported on the first 2 months in the southwest Pacific.

What Scientists Did

At scientific stations in the Gilbert Islands, New Caledonia, and the New Hebrides, the vessel's scientists used radioisotopes to determine certain aspects of the microfauna and microflora, tested the amount of nucleonic acid in fish to establish their growth rates; studied the vertical distribution of animals in the ocean using bathyphotometers to record the luminescence of sea organisms; measured the formation rates of microflora forming mineral salts and the rates at which the salts are consumed by fish and other marine animals. Other studies dealt with the role of bacteria in the formation and development of marine food chains.

French Advice

During a call at Noumea, French New Caledonia, in early Jan., the Soviet scientists met with French biologists studying the South Pacific. The French advised the Soviets on selecting an appropriate research area in the Coral Sea. Vitiaz resupplied in Brisbane, Australia, before continuing research in the equatorial Pacific. ("Izvestiia," Jan. 31, 1969.)

The Soviet scientists were invited by Australians to visit the Great Barrier Reef research station on Heron Island, where they visited laboratories and conducted research on luminescence of corals and other animals.

The cruise is completed, and M. E. Vinogradov summarized its results in official Izvestiia as follows. The expedition collected a unique complex of quantitative data on the biological productivity of the ocean. The

USSR (Contd.):

growth rate of animals feeding on microscopic algae was determined for the first time. Previously, bacterial cells were not considered food because of their size, and to explain their role in plankton the scientists measured the amount of energy transferred from one food level to another. It was shown that bacteria form special agglomerations of great importance as a food component for small marine animals. Intensive plankton research with special nets, bathyphotometers, and radioisotopes determined the intensity of photosynthesis, and yielded for the first time a detailed picture of the vertical distribution of plankton. Large, stable accumulations of animals, microorganisms and detritus were discovered at depths of several dozen meters. These strata perform extremely important functions in the life of the ocean's upper layers.

The material collected by the expedition will be used to design a mathematical model of the vital links between marine animals, and to compile a generalized "biological productivity map" of the ocean. ('Izvestiia,' Feb. 20, 1969.) On her way to Vladivostok, the Vitiaz called at Nagasaki, where the Soviet scientists met with their Japanese colleagues.

CARIBBEAN

Haiti

SPINY LOBSTER EXPORTERS ORGANIZE TO FORCE DOWN EXVESSEL PRICE

Three of Haiti's 6 spiny lobster exporters agreed in Jan. 1969 to pay only markedly reduced prices for spiny lobster tails--65 US cents a pound to independent fishermen, and 80 cents a pound to "speculateurs," middlemen who buy from native fishermen. Previous price as as much as US$1 a pound to fishermen, $1.10 to "speculateurs." Success of effort is not expected to result in lower spiny lobster tail prices for U.S. importers. (U.S. Embassy, Port-Au-Prince, Feb. 7.)

IS SEAWEED A WEED? WHAT IS IT AND HOW DOES IT GROW?

Plants as useful as seaweed can hardly be considered weeds because weeds are commonly defined as uncultivated (wild) plants that are useless, unsightly, and have no economic value. Seaweed is used as a food by millions of people, particularly along the Pacific Coast of Asia; it also serves as food for livestock.

Seaweed has many other uses, for example, as fertilizer, medicines, source of iodine, and ingredients used in preparation of bread, candy, canned meat, ice cream, jellies, and emulsions.

In the late 18th century seaweed was the primary source of soda until other sources became more economical and practical. In these years, thousands of tons of soda were derived from sea plants.

Attached seaweeds grow only along the narrow border near shore. Growth is depth limited because natural sunlight is needed for the photosynthesis processes of the plants. ("Questions About The Oceans," U.S. Naval Oceanographic Office.)

ATIN AMERICA

Brazil

HRIMP EXPORTS TO .S. RISE SHARPLY

U.S. imports of Brazilian shrimp in 1968 ncreased sharply over previous years. The r·end is expected to continue. U.S. imports hrough November 1968 were almost 7 times he 1967 total. From 1960 through 1964, an-tal U.S. imports ranged from 7,500 to 57,450 ounds. In 1966, shrimp imports from Brazil ere 473,223 pounds. Efforts by new interests orecast increases in production from Brazil's argely untapped shrimp resources.

U.S. Imports[1] of Brazilian Shrimp

Month	1968	1967	1966
	(1,000 Pounds)		
an.	22	23	11
eb.	11	6	-
Mar.	-	4	102
pr.	-	22	92
May	236	7	26
une	12	-	95
uly	197	6	19
ug.	193	2	78
ept.	17	-	36
ct.	198	-	24
ov.	300	57	3
ec.	n/a	49	-
Total	1,186	176	486

[1]/U.S. Import Statistics, U.S. Bureau of the Census.

.S. Interests

Two firms were established at the mouth of e Amazon in Belem by U.S. interests. To-ether, these firms plan to export more than million pounds of shrimp annually to the U.S. his would be almost 3.5 times as much as all razilian shrimp exports to the U.S. in 1968. hipments will begin some time in 1969.

In the state of Sao Paulo, one large firm and everal smaller firms already are exporting frozen shrimp to the U.S. The large firm reportedly exported more than 500,000 pounds during second-half 1968.

Shrimp-processing firms in Sao Paulo and elsewhere are interested in marketing their product in the U.S. and want to contact U.S. buyers and investors. (U.S. Consulate, Sao Paulo, Dec. 31, 1968.)

Mexico

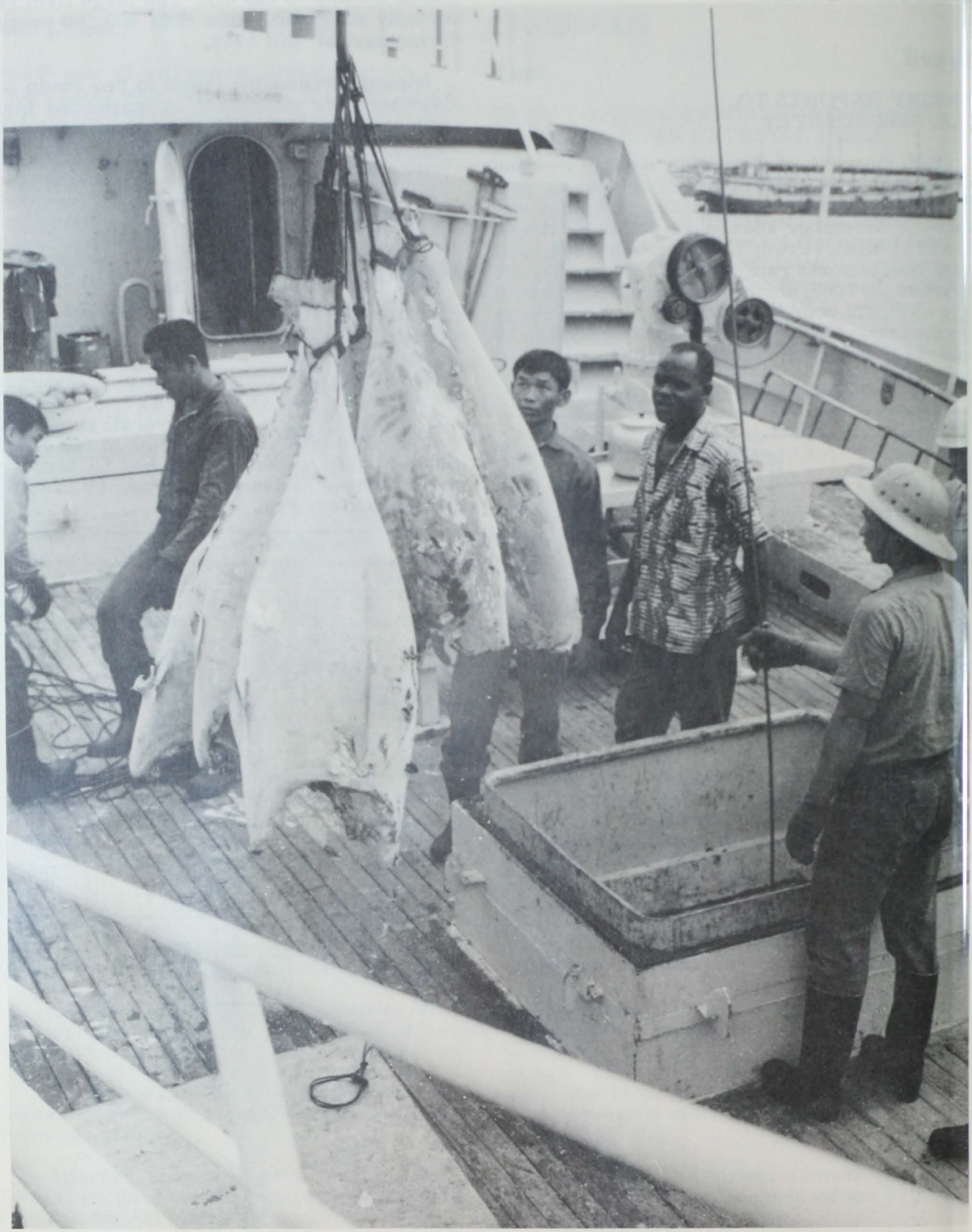
PILOT FISHING PORT COMPLEX SUCCESSFUL

Mexico's pilot fishing complex at Alvarado, Veracruz, on the Gulf of Mexico, operated successfully during 1968. Overall production was up from 1967 and, according to the director, would have been higher had 15 trawlers on order been delivered on time. (U.S. Embassy, Mexico, Feb. 19.)

Fish and Fishery Product Production

Species	1968	1967
	(Metric Tons)	
Mackerel	1,161.5	1,075.1
Clams	912.7	1,511.3
Snook	464.6	-
Shrimp (headless)	299.6	268.9
Red snapper	83.4	-
Shrimp (heads-on)	47.3	29.9
Crab, cleaned	20.4	-
Squid	14.2	-
Sharkskin, salted	12.4	-
Shark fins	2.6	-
Total	3,018.7	

	Number
Boats operating	18
Boats under construction	15
Employees	287
	Tons
Fish canned worth $2,000,000 pesos (US$160,000).	182.5



Unloading frozen ("headed") bigeye tuna from a Taiwanese longliner at Abidjan, Ivory Coast. The vessel fished in the tropical Atlantic. The tunas weigh about 150 lbs. (Photo: Peter Wilson, TABL, BCF.)

ASIA

Japan

1968 CANNED TUNA IN BRINE EXPORTS TO U.S.

Japan exported 3,090,816 cases (48 7-oz. cans) of canned tuna in brine to the U.S. in 1968. This was 97% of the quantity which could be imported into the U.S. under the lower tariff of 11% ad valorem. The 1968 U.S. import quota for brine-packed tuna was 3,189,764 cases; any imports in excess of that would have been dutiable at 22% ad valorem.

Imports from other countries are estimated to have been around 400,000 cases, for a total of close to 3.5 million cases, about 300,000 cases over the quota. The cut-off point for imports under the lower tariff rate was reached in mid-December: thereafter, about 500,000 cases were placed in U.S.-bonded warehouses. ('Kanzume Nippo,' Feb. 18, 1969.)

* * *

FACTORYSHIPS LEAD BOTTOMFISH FISHERY IN E. BERING SEA

Two trawl fleets, led by the factoryships 'Chichibu Maru,' 7,472 gross tons (GT) owned by Nichiro Fishing Co., and 'Kashima Maru,' 7,163 GT (Nihon Suisan), are operating in the Bering Sea bottomfish fishery.

The factoryship 'Soyo Maru,' 11,192 GT (Taiyo), fishing there until Jan. 18, returned home on Jan. 26. After undergoing hull extension, she is scheduled to depart for the Bering Sea on Apr. 10, and return home again in late November.

Other Fleets Assigned

Other factoryship fleets assigned to the Bering Sea fishery this year and scheduled departure and return dates are: 'Hoyo Maru,' 14,094 GT (Hoko Suisan), mid-Apr., late October; 'Gyokuei Maru,' 10,357 GT (Nihon Suisan), Feb. 23, Oct. 4; 'Shikishima Maru,' 10,144 GT (Nihon Suisan), Feb. 27, Oct. 7; 'Nisshin Maru No. 2,' 27,035 GT (Taiyo), Feb. 1, late October; 'Seifu Maru,' 8,269 GT (Kokusai Gyogyo), departure date unknown. ('Suisan Tsushin,' Jan. 29, 1969.)

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BERING SEA BOTTOMFISH CATCH ROSE IN 1968

Bottomfish catch by 12 factoryship fleets in the Bering Sea reached 819,000 metric tons in 1968 (see table). Alaska pollock, the principal species used in producing minced meat aboard factoryships, predominated with 686,000 tons, or about 84% of total fleet catch, reflecting the effort made in minced meat production. ("Nihon Suisan Shimbun," Feb. 24, 1969.)

Bering Sea Bottomfish Catch		
Species	1968	1967
	(Metric Tons)	
Alaska pollock	686,000	566,000
Flatfish	42,000	76,000
Pacific cod	37,000	32,000
Herring	17,000	31,000
Turbot	16,000	23,000
Rockfish	9,000	31,000
Shrimp	8,000	3,000
Sablefish	2,000	7,000
Other	2,000	2,000
Total	819,000	771,000

* * *

TUNA FLEET SIZE CHANGES LITTLE

By the end of 1968, 1,161 Japanese vessels, excluding those used seasonally, were licensed for the distant-water tuna fishery, the Japanese Fisheries Agency reports. Fleet size has not changed much during the past 5-6 years.

Vessel Sizes and Management Units, 1963-68			
Size Range	1968	1967	1963
Gross Ton	(No. of Vessels)		
Under 100	240	318	457
100-180	279	260	150
180-240	246	229	193
240-300	137	131	132
Over 400	64	72	76
Total	1,161	1,165	1,152
Seasonally employed vessels	122	125	184

A downtrend in management units was marked by a decrease in number of enterprises owned by individuals, and an increase in corporation ownership. For example, in 1968 individual ownership totaled 257 units, and corporation ownership 363 units, compared with 530 and 184 units in 1963. ('Katsuo-maguro Tsushin,' Jan. 30, 1969.)

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Japan (Contd.):

TUNA LONG LINERS BUILT

Three new types of tuna long liners for the distant-water tuna fishery have been developed and built in the past two years. Each has a slightly different characteristic, but all have been designed to provide greater maneuverability and safety in adverse weather, and to reduce manpower requirements through mechanization. Equipped with modern navigational instruments--radar, loran, direction finder, fish finder, and facsimile communication equipment--the new vessels are the most efficient Japanese tuna long liners presently in operation.

"Pioneer" Type

The first, a Pioneer-type long liner, was built in Oct. 1967 by Kanasashi Shipbuilding Co. The vessel, between 299 and 345 gross tons, employs line haulers and other labor-saving devices. These reduced manpower to 18 crewmen. A newly developed freezing system improves the keeping quality of fish sufficently to bring an additional $378 a ton or more on the Japanese fresh-fish market. Over 20 new long liners of this type have been built already and are fishing southern bluefin off Australia.

Kanasashi's newest vessel of this type is 'Chiyo Maru No. 18,' completed Jan. 22, 1969. Principal specifications: overall length 171.9 feet, draft 11.8 feet, maximum speed 13 knots, cruising speed 11 knots, freezing capacity 16 tons a day, complement 20.

Double-Decked Long Liner

The second new type is a double-decked long liner built by Narasaki Shipyards. The bridge of this vessel has been located in the afterdeck to improve stability and provide greater fish-carrying capacity. Two recently built vessels of this type are now fishing southern bluefin off Australia. One is the 284-ton 'Zuiho Maru No. 11,' completed in Nov. 1968. Principal specifications: length 142.7 feet, beam 27.6 feet, draft 11.6 feet, maximum speed 13.4 knots, cruising speed 12.1 knots, freezing capacity 50 tons a day.

"All-Weather" Long Liner

The third is an "All Weather" (AW) long liner built by Niigata Steelworks. The AW vessels, with a bulbous bow to increase cruising speed, were designed to operate under rough weather conditions in the high latitudes off southern Australia. Seven vessels in this series are scheduled for construction in 1969. Two are already in operation. The 255-ton 'Fuji Maru No. 68,' completed Jan. 31, 1969, has a length of 133.2 feet, beam of 25.9 feet, draft of 11.5 feet, and a cruising speed of 10.5 knots with a maximum 13.34 knots. She is equipped with a trolley-type semi-air blast freezing system.

The second 255-ton AW long liner, 'Yakushi Maru No. 38,' recently departed on her maiden voyage to the eastern Pacific to fish tuna off Mexico. ("Suisan Keizai Shimbun," Feb. 28 & Mar. 4, 1969.)

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TUNA FISHERMEN HAMPERED BY SHORTAGE OF BAIT SAURY

Part-time tuna fishery operators in Shiogama, getting ready early in March to put in one more tuna trip before shifting to salmon, found it virtually impossible to obtain bait saury. Shiogama is a large fishing port in northeastern Japan.

Scarcity of saury, caused by poor fishing in 1968, had sent prices soaring. The fishermen were unable to buy bait saury even at the exvessel price of about US$454 a short ton. Normally, prices for bait saury are around $176-202 a short ton. By end of 1968, prices had risen to a high of $378. ("Suisan Keizai Shimbun," Mar. 4, 1969.)

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SHRIMP FISHERY IS ACTIVE OFF SOUTH AMERICA

About 50 independent Japanese shrimp trawlers, and a mothership fleet of 22 vessels, are shrimp fishing off the Guianas, northeast South America. Some independent trawlers are making money. But others, especially those that entered the fishery in 1968, are still operating at a loss. This is due to their unfamiliarity with the grounds, and lack of crew experience with U.S.-built double-rigged trawlers.

Nichiro Lost Money

Because of those factors, and labor-management problems, the mothership fleet

apan (Contd.):

wned by Nichiro Fishing Co.) lost about S$972,000 in 1968. Catches are averaging ose to 500 pounds, heads off, per day, com-ared with around 350 pounds when the ves-els first started fishing. ('Suisan Tsushin,' n. 22, 1969.)

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RADERS SEEK COMPENSATION ROM PHILIPPINE FIRMS

Nine Japanese trading firms are seeking mpensation from 2 Philippine buyers for nperformance of purchase contracts in-lving 316,500 cases (1-lb. tall 48's) of can-ed mackerel packed in Hokkaido, Japan.

In Aug. 1968, the Philippine firms con-racted for 450,000 cases of canned mackerel, ut failed to set up letters of credit for 16,500 cases scheduled for shipment by the nd of Jan. 1969. The Japanese are demand-ng penalty payments of $40,005 from one firm nd $14,070 from the other, for 3 months' nterest charge and storage costs. ('Suisan sushin,' Feb. 26, 1969.)

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HRIMP IMPORTS ROPPED IN 1968

Frozen shrimp imports in 1968--35,204 etric tons valued at about US$78.1 million--ere down 21% in volume and 2% in value from 967. It was the first decline since 1961.

Purchases from the Soviet Union slumped 1,418 tons from 9,836 in 1967. Japan im-orts small red shrimp from the USSR and arkets them peeled and cooked.

The 5 leading shrimp suppliers in 1968 ere Mexico, 5,769 tons worth US$14,577,158; hailand, 4,581; Communist China, 3,769; Hong ong, 3,628; and India, 3,164.

an. 1969 Imports

Jan. 1969 frozen shrimp imports--2,884 etric tons worth about US$7 million--were own 723 tons from Dec. 1968, and about 500 ns from Jan. 1968. Communist China with 64 tons, worth US$1,027,800, was leading sup-lier. Other major suppliers were Mexico, 30 tons; Thailand, 353 tons; Pakistan, 266; long Kong, 230; Indonesia, 161; India, 132; nd South Korea, 53. ('Suisan Tsushin,' Feb. and 25, 1969.)

日本

South Korea

SETS PLANS FOR 1969 FISHING IN BERING SEA

South Korea planned to send one 9,400-gross-ton mothership and about 20 trawlers to the Bering Sea on April 1, 1969, according to Japanese industry sources. The operation was to be sponsored jointly by the Korea Marine Industry Development Corp., Samyang Fishing Co., and Shin Hung Refrigeration Co. A South Korean fishery official was reported saying that this year's expedition is a commercial extension of experimental operations conducted in the past two years.

He also said that the South Korean Fisheries Office is arranging a low-interest loan totaling around 400 million won (about US$1.4 million) to help vessel owners pay pre-departure expenses. An official of the South Korean Embassy in Tokyo stated on Jan. 31 that the fleet will not fish salmon. ('Nihon Suisan Shimbun,' Jan. 31, and 'Shin Suisan Shimbun Sokuho,' Feb. 1, 1969.)

The semi-Government Korea Marine Industry Development Corp. has been conducting exploratory fishing in the northeast Pacific with 1 stern trawler since 1967. The catch was mostly Alaska pollock. The operation reportedly is paying off through sales on domestic markets. The 1967 and 1968 operations of the Samyang Fishing Co. were poorly organized and probably a financial failure. The Shin Hung Co. recently was active in exploratory fishing for shrimp off Indonesia. Reportedly, results were below expectations. Merger of operations of the 3 companies probably indicates the 2 private companies will rely more during 1969 on available government expertise and able management introduced into the Korea Marine Industry Development Corp. by its present general manager, Mr. Oh, former director of ROK's Office of Fisheries.

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FISH CARRIER LAUNCHED IN JAPAN

A 1,000-ton refrigerated carrier, ordered by the South Korean Koyo Distant Water Fishing Company, was launched in early November 1968 in Shizuoka Prefecture, Japan. The firm, largest in South Korea tuna fishing,

South Korea (Contd.):

owns 21 tuna vessels--ten 300-ton, ten 200-ton, and one 190-ton craft. They operate in the Indian and Atlantic Oceans.

In 1969, the firm plans to add two 500-ton fishing vessels as well as the 1,000-ton refrigerated carrier, to its tuna fleet. ('Suisancho Nippo,' Nov. 6, 1968.)

Taiwan

1968 FISHERY CATCH INCREASED 15.9%

Taiwan's fishery catch in 1968 was 531,045 metric tons, 15.9 percent more than in 1967.

Type of Fishery	1968	1967
	(Metric Tons)	
Deep-sea fisheries	241,458	189,097
Outer coastal fisheries	208,139	186,543
Inner coastal fisheries	24,861	26,316
Fish culture	56,587	56,181
Total	531,045	458,137

Deep-Sea Catch Rose Most

The deep-sea fishery catch was up 27.7% from 1967. This was the largest increase of any Taiwanese fishery. It was due principally to increased catches of tuna vessels added to the fleet in 1967 and 1968. Included are 80,475 tons caught by foreign-based Taiwanese vessels fishing in the Indian Ocean and in the Atlantic. The 1968 landings of the overseas-based Taiwanese fleet were up 109.4 percent from 1967's 38,396 tons.

Outer Coastal Catch Also Increased

The outer coastal catch was up 11.6 percent from 1967. This resulted principally from increased sardine and mackerel landings (up 19 and 120%, respectively) and higher shrimp catches (up 30%). (T.P. Chen, Chief, Fisheries Division, Joint Commission on Rural Reconstruction, Taipei, Republic of China.)

Ceylon

FISHERY DEVELOPMENT PROGRAM

Ceylon is developing her fishing industry to increase the domestic fish supply and t expand the industry's economic base. Ma coastal inhabitants depend on fishing for the livelihood. The government has been worki to develop the industry through the Depart ment of Fisheries and the Ceylon Fisheri Development Corporation. Cooperative so cieties also may play a large part.

Industry Objectives

The functions assigned to the Ceylon Fish eries Corp. paint a good picture of industry objectives. The corporation will undertak (1) Fishing operations including deep-se trawling; (2) Fish processing, canning, cur ing, drying and by-products; (3) Wholesal or retail marketing and distribution; (4) Con struction and maintenance of fishery harbor and shore installations, including cold rooms (5) Import and export of fish and fish prod ucts; (6) Import and sale of gear, tackle, an other necessary products. (7) Assist th Fisheries Department or any other depart ment; (8) Construct boats and other craft fo the fishing industry; (9) Repair and maintai facilities for fishing boats.

Current and Planned Projects

Fleet development is of prime importance The present fleet is composed of small, non motorized craft and must return to port eac day. The government is increasing the num ber of small mechanized craft. Harbor de velopment is necessary. Mutwal is the onl harbor, and it is too small. Most landin points are merely along beaches, and thi will continue for many years despite planne harbor construction. The government ha started a pilot plant to can sardines an mackerel; a tuna cannery in North Ceylon i expected to open this year. The distributio system will be improved. Marketing termi nals already exist at Colombo, the main dis tribution center, Kandy, and Kurunegala. Th socio-economic aspects of such a large de velopment program have not been overlooked ('Mainichi,' Feb. 4, 1969.)

OUTH PACIFIC

ustralia

LL CRAYFISH ROCK LOBSTER, OUP PROPOSES

The Rock Lobster and Prawning Assoc. of stralia wants to change the name of cray- to rock lobster (spiny lobster in U.S.). Association decided to change crayfish ock lobster because of French proposals, forward in the Codex standard, to use the e crawfish. If this were done, the As- iation felt, the price of Australian cray- s sold in the U.S. would drop.

iform Names

The standard names of southern crayfish sus lalandei) and western crayfish (Panu- is cygnus) were adopted in 1962 by the mmonwealth-States Fisheries Confer- e. A comprehensive list of uniform names most commercial fish species was pre- red at that same time. These names have n used in official publications.

The main reason for compiling a list was chieve uniformity in statistical data. Any nge in uniform name must be approved by Standing Committee on Fisheries.

mmon Names

Although crayfish is the name most fish- en use for southern and western cray- , research workers call it spiny or rock ter. It is marketed overseas as rock ter (spiny lobster in U.S.).

Overseas, crayfish normally means fresh- er crustaceans; lobster is usually the e for marine crustaceans with crab-like ws. There are no true lobsters in Aus- ian waters. ('Australian Fisheries,' Jan. 9; formerly 'Australian Fisheries News- er.' Name was changed Jan. 1969.)

AFRICA

Ghana

RELEASES SOVIET TRAWLERS

On Mar. 1, Ghana released 2 Soviet trawlers and their crews held since Oct. 10, 1968. A public statement on Mar. 3 announced that the 2 captains and 1 crew member will remain in Accra to assist a Commission investigating the activities of Air Marshal Otu. Allegedly he had attempted a coup d'état to bring back exiled former President Kwame Nkrumah. The Soviet trawlers were suspected of participating in the alleged plot.

Ghanaian Statement

The statement blamed "obstructive tactics" of the Soviet captains and crews for prolonging investigation of their intrusion into Ghana's territorial waters. The statement noted that Ghana's security was "not compromised" by release of the Soviet trawlers and crews; also, investigations by Ghanaian security services were not influenced by diplomatic pressures, and the decision to release the Soviets was taken "entirely" on the Government's initiative.

The statement added that Ghana desires friendly relations with the Soviet Union, but the powerful USSR must base her relations with Ghana on principles of equality, mutual respect, territorial integrity, and non-interference in internal affairs.

Language Barrier

In the Otu hearings, the investigative Commission apparently ran into language problems. On Mar. 4, the 2 Soviet skippers could not testify because no suitable interpreter was available. The hearing, therefore, was postponed until Mar. 7. (U.S. Embassy, Accra, Mar. 4, 1969.)

Fines

The 2 captains were fined about US$200 each for illegally sailing in Ghana's territorial waters. The trawlers left Takoradi for the USSR on March 4.