Redefinition of Regulation and Trade Policies

Marketing Food Products Without Marketing Policies: International Competitiveness of the U.S. Seafood Industry

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Seafood plays a vital role in feeding the world's population. Worldwide, more than 16 percent of total animal protein in the diet is supplied by fish (Food and Agriculture Organization, 1992a). International trade in edible seafood, worth U.S.$38 billion, contributes to this supply (Food and Agriculture Organization, 1990b). However, the realm of the global seafood market is becoming increasingly complex due to changes in fishery management regimes, the worldwide growth in aquaculture, the increasingly frequent use of trade restrictions as enforcement tools in marine resource management policies, and tariff and non-tariff barriers.

In spite of this, the United States has no coordinated or comprehensive seafood industry market policies. There are no policies that attempt to either maintain incomes or prices or subsidize export prices to help the United States compete internationally. Indeed, the U.S. seafood industry is part of a relatively freely operating market.

With a few exceptions, marketing efforts are mostly industry driven. There have been infrequent generic advertising attempts for seafood, including a two-year, federally-funded national campaign that was funded with the constraint that industry funds would have to replace federal funds after two years. The national campaign was not continued by the industry due to differences of opinion within the industry about who should pay, and how much. The federal government does fund a portion of the Alaska Seafood Marketing Institute, at which the money must be used to promote Alaskan seafood in foreign markets. Many other states have seafood promotion agencies, but any federal funding they receive is likely to be sporadic.

Another type of federal support has been to put products on the PL-480 list. Canned pink salmon and Atlantic mackerel have been on the PL-480 list in the recent past, but anecdotal reports are that none of the canned salmon has been purchased by foreign governments due to the expense of this product relative to other available food products.

Finally, there is some research and extension assistance for the aquaculture industry via the regional aquaculture centers of the U.S. Department of Agriculture (USDA).

This paper discusses the factors and policies that affect the competitiveness of the U.S. seafood industry, both internationally and domestically. In particular, the next section highlights the changing mix of policies and market forces that affect seafood product marketing. The final section concludes with recommendations on changes in policies to increase U.S. competitiveness.

Major Market Forces

Perhaps the most important event affecting the international seafood industry was creation of the Exclusive Economic Zone (EEZ) during 1976-1978. Coastal nations, led by Iceland, extended jurisdiction over coastal waters and resources to 200 nautical miles.

In the United States, the Magnuson Fishery Conservation and Management Act of 1976 provided regional fishery management councils with the authority to adopt policies to manage fishing efforts and preserve stocks within the EEZ.[1] The effect of this act in the United States has been to exclude foreign fleets from harvesting fisheries resources within that zone. While fisheries remain a common property resource, this limited privatization by nations allows for some control over the management of harvest and conservation of fish stocks. However, the effect was, in the simplest terms, to create international trade in seafood. Nations that had previously harvested their own supply of fish were now, in many cases, forced to become importers. Other nations, which found themselves with a surplus of fish, became exporters.

With the increasing trade of the past twenty years, conflicts between nations involving tariff and non-tariff barriers have repeatedly occurred, as have conflicts between marine resource management and international trade policies.

Since the implementation of the Magnuson Act, North America has been one of the most important participants in international seafood trade (Food and Agriculture Organization, 1990b). This is primarily because other nations, particularly Japan, have been excluded from the fishery abundant areas in the Bering Sea and Gulf of Alaska. Although Asia is the largest producer of fish in the world (through wild harvest and aquaculture production), the United States is the largest exporter of seafood, by value. In 1994, the United States exported more than $3 billion in edible fish products (U.S. Department of Commerce, 1995).[2] This was nearly a three-fold nominal increase in the value of exports since 1981. Canada is the world's second largest exporter. The United States is also the world's second largest importer of fish products, after Japan. In 1994, U.S. imports of fishery commodities were worth nearly $12 billion (U.S. Department of Commerce, 1995), $6.6 billion for edible fishery products.

Table 1 shows that, on net, the United States had a trade deficit in 1994 with respect to edible fishery commodities. To provide some perspective on the relative size of seafood trade between the United States and the rest of the world, Table 1 also presents the value of edible seafood trade in 1994 relative to the trade of selected other agricultural products. The value of U.S. seafood exports are comparable in magnitude to U.S. exports of vegetables and their preparations, meat and meat products, and fruit and their preparations (excluding juices). Wine and cheese are the other two commodities listed with trade deficits, although these deficits are not large compared to seafood.

Figure 1 shows the most important products exported by the United States in 1994. These include fresh and frozen salmon, surimi (fish paste made primarily from Alaskan pollack which is used as imitation crab meat, among other products), crabs (*e.g.* opilio, tanner and dungeness), flatfish (*e.g.* flounder, halibut), shrimp, lobsters, canned salmon, and sea urchin roe (California's most valuable fishery). The other fish category includes such diverse items as herring,

Table 1. United States—Rest of World (ROW) Trade in Seafood Relative to Other Food Products, 1994

Product	U.S. Exports to the ROW ($1,000)	U.S. Imports to the ROW ($1,000)
All Edible Seafood	3,126,120	6,645,133
Vegetables and Preparations	3,875,036	2,730,776
Nuts and Preparations	1,285,434	499,873
Fruits and Preparations	2,598,138	1,495,304
Meat and Meat Products	3,704,320	2,657,548
Poultry and Poultry Products	1,879,827	135,101
Cheese	71,822	490,819
Wine	178,493	1,034,771

Source: U.S. Department of Agriculture, 1995; U.S. Department of Commerce, 1994.

sablefish, clams, scallops, squid, cured seafood, canned sardines, and other caviars. Even though fresh and frozen salmon exports make up the single largest category of U.S. exports, that category is still less than 17 percent of the total value of exports.

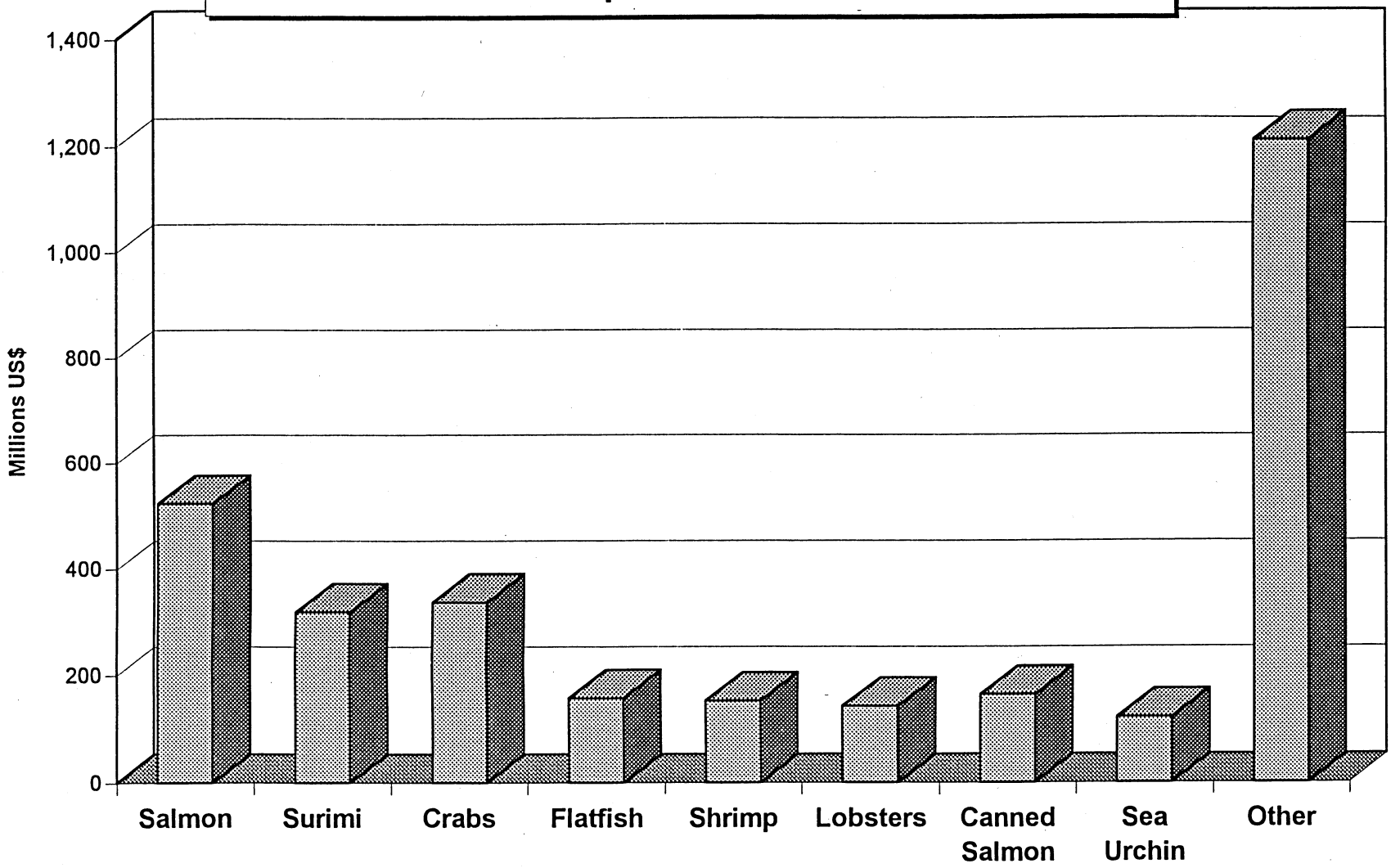
The primary nation of destination for U.S. edible seafood exports is Japan. Japan accounted for 60 percent of all U.S. exports by value in 1994 (U.S. Department of Commerce, 1995). The second largest importer of U.S. edible seafood was Canada, with 14 percent of the market.

On the import side, Figure 2 shows that the commodity that accounts for the majority of the value of U.S. imports is shrimp, valued at more than $2.5 billion in 1994. The primary sources of imported shrimp are Thailand, Ecuador, Mexico, China and India. Much of this shrimp supply is produced in aquaculture operations, not from wild fisheries. Canada is also a significant source of seafood such as lobster and groundfish (e.g. cod, haddock). Canned fish imports totaled $542 million.

Aside from creating rights to solely manage and harvest aquatic resources from the EEZ, the Magnuson Act gives the power to regional fishery management councils to determine the method of managing the resource as well as setting allowable harvest levels, subject to approval by the secretary of commerce. By and large, seafood market considerations do not enter into the decision-making process, although management schemes may have a large impact on the market.

A good example of this impact is apparent from observing the Pacific halibut fishery. Prior to 1992 in British Columbia and 1995 in Alaska, halibut had been harvested during twenty-four-hour fishing "derbies" during which fishing for halibut was allowed only during two twenty-four-hour periods per year. This resulted in a glut of halibut harvested, more than the processors could

Figure 1. U.S. Exports of Edible Seafood by Product, 1994
Total Exports = $3.1 billion



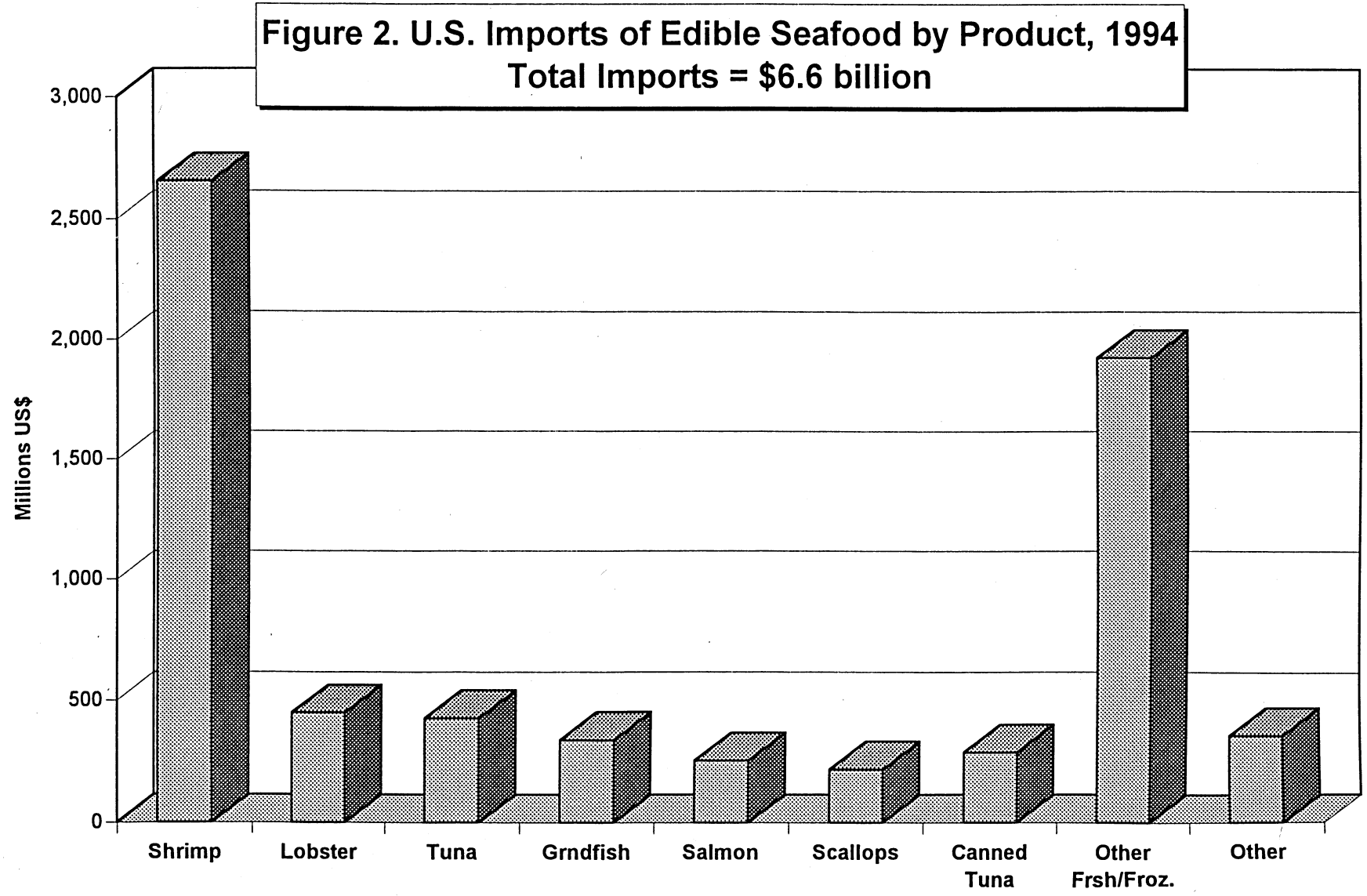


Figure 2. U.S. Imports of Edible Seafood by Product, 1994
Total Imports = $6.6 billion
Millions US$
3,000
2,500
2,000
1,500
1,000
500
0
Shrimp
Lobster
Tuna
Grndfish
Salmon
Scallops
Canned Tuna
Other Frsh/Froz.
Other

reasonably process quickly. As a result, a significant amount of the halibut harvested sat at the docks, waiting to be processed, while the quality deteriorated. Most halibut was processed as frozen, and then held in inventory to be distributed to the market throughout the year and replenished in the next harvest season.

Beginning in 1992 in British Columbia and 1995 in Alaska, the management schemes implemented were Individual Transferable Quotas (ITQs), wherein property rights are assigned to either individuals or vessels for a given amount, or quota, of halibut. These fishermen are then able to harvest halibut, up to the limit of their quota, whenever they prefer throughout the year, depending on weather and market conditions, and alternative fishing opportunities. This management scheme is likely to result in a more efficient use of the resource, higher quality halibut available throughout the year for the consumer, and—early anecdotal evidence indicates—higher prices paid to the fisherman.[3]

To summarize, the Magnuson Act effectively created a competitive world marketplace for seafood products. In addition, the Magnuson Act continues to impact the structure, operation and efficiency of the market in fishery products through the ways in which it determines the resource management scheme and allowable harvest.

Aquaculture

U.S. import and export numbers discussed above show the importance of shrimp and salmon to the U.S. market. Most of the shrimp imported by the United States is from aquaculture operations in Thailand, China and Ecuador. While the vast majority of the salmon exported by the United States is comprised of wild-harvested Pacific salmon, much of the imports are made up of aquacultured Atlantic salmon.

Aquaculture has had a significant effect on the competitiveness of several species produced by the United States, particularly involving these high-valued shrimp and salmon industries. There has been tremendous growth in worldwide aquacultural production of several species of finfish, shellfish and crustaceans in the last twenty years, in many cases generating a supply that has out paced demand. The similarity of farmed seafood production to other agricultural food production has led the USDA to increase its involvement in, and jurisdiction over, the industry.

U.S. aquaculture products include salmon, trout, shrimp, catfish, tilapia, hybrid striped bass, mussels, clams, oysters and many others. In fact, aquaculture production of finfish has grown from 2.6 million metric tons in 1975 to 8.4 million metric tons in 1990; crustaceans from 29.7 thousand mt in 1975 to 715 thousand mt in 1990; and mollusks from 2.0 million mt in 1975 to 3.0 in 1990 (Food and Agriculture Organization, 1990c). The largest producer of aquacultured seafood is Asia, with 8.6 million mt in 1988, followed by Europe with 1.1 million mt and North America with 0.42 million mt (Food and Agriculture Organization, 1990c). In addition, Asia cultured 3.6 million mt of seaweed in 1988.

From the perspective of the United States, Canada, the European Union (EU) and Norway, the salmon aquaculture industry has led to some of the most contentious marketing issues. World production of farmed Pacific and Atlantic salmon rose 6,264 percent from 7,149 mt in 1980 to 454,953 mt in 1994. Norway's share of farmed salmon production was 46 percent in 1994,

and virtually all of it was exported (U.S. Department of Commerce, 1994).

Other major producers and exporters of farmed salmon are Canada and Chile, although the United States has a small industry in the states of Maine and Washington and the EU has significant production in Ireland and Scotland.

This tremendous growth in farmed salmon production has coincided with a simultaneously large increase in the production of wild salmon. Figure 3 shows the growth in salmon production 1985 through 1994. The rise in farmed salmon reflects primarily increased production of Atlantic salmon.

Because of an extensive marketing program that distinguished Norwegian farmed salmon as a uniquely high-quality product, Norway was extremely successful in exporting salmon to the United States and EU at premium prices. The name "Norwegian salmon" replaced "Atlantic salmon" on restaurant menus, although the product is indeed Atlantic salmon. There is no such species as Norwegian salmon. Along with product, Norway exported production and feed technology to other producing nations.

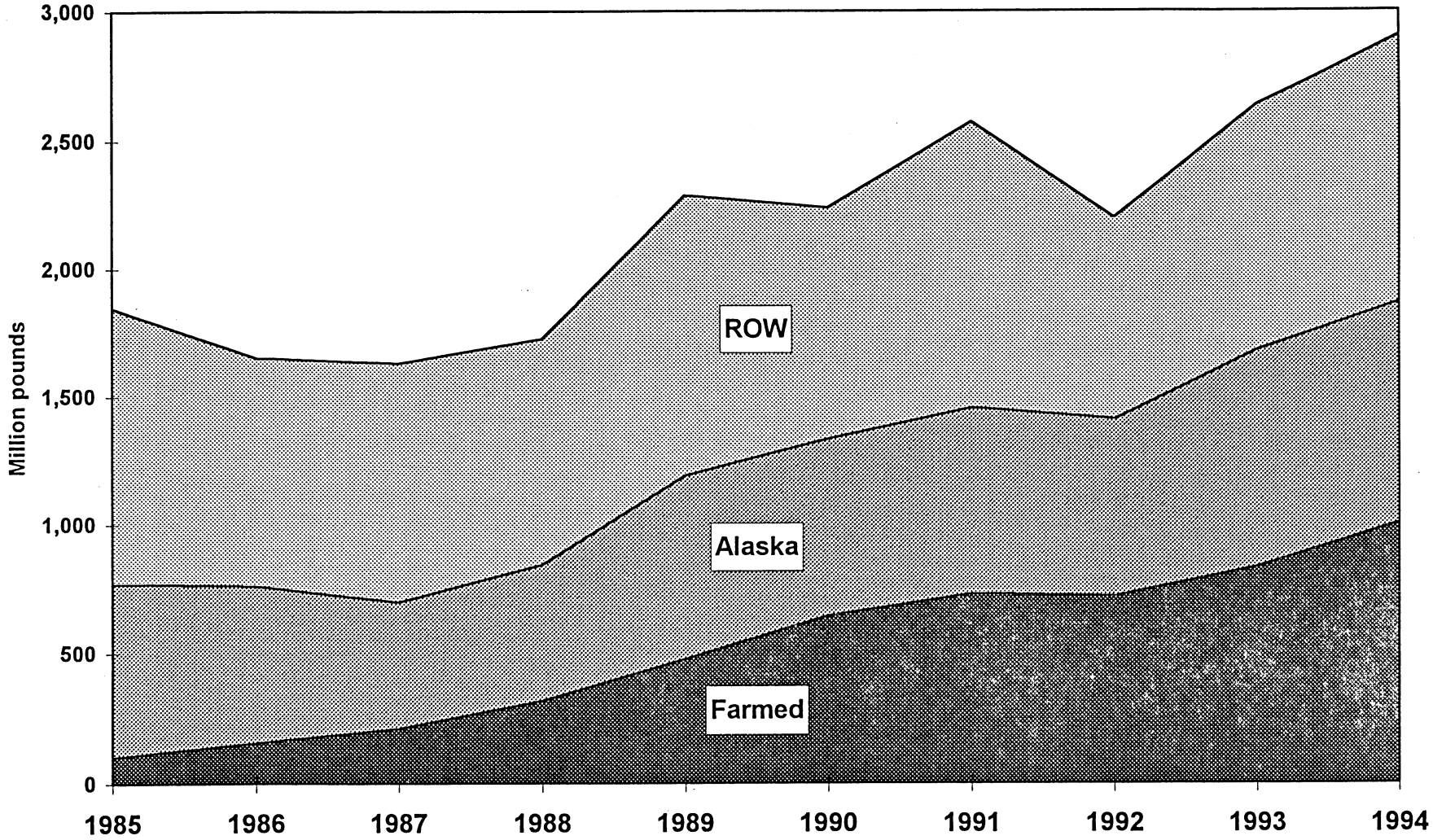
In 1989, a world glut of salmon generated by record production of farmed salmon as well as record production of wild salmon in Japan, Alaska and British Columbia caused a significant decrease in prices for all types of salmon. The farmed salmon industry in the state of Maine alleged that the price decline for farmed Atlantic salmon in the U.S. market had been caused by Norwegian dumping of product, causing material injury to the U.S. salmon aquaculture industry. In February, 1990, these farmers asked the U.S. International Trade Commission (USITC) to investigate the dumping charge and to institute a countervailing duty to counteract subsidization of the farmed salmon industry by the Norwegian government (U.S. International Trade Commission, 1992).

The burden of proof in the USITC case pivoted upon the definition of "like product." In other words, what is a "like product" for Norwegian fresh farmed Atlantic salmon? The United States farmed salmon industry claimed "like product" is other fresh farmed Atlantic salmon only. With this definition, the U.S. coalition of salmon farmers argued that Norwegian imports were the cause of the price decline since Norway was the dominant producer, holding the largest share of the fresh-farmed salmon market in the United States. The Norwegians, on the other hand, argued that all salmon in fresh form are a "like product" and therefore substitute for Norwegian salmon. This point was crucial, because, as mentioned above, prices fell for all Pacific salmon species in 1989.[4] The Norwegians thus used the argument that prices were falling because of an increased supply of all salmon.

USITC found that premium quality fresh-farmed salmon is a "like product". The basis for this finding was that, even though certain species of Pacific salmon are frequently named as substitutes for Atlantic salmon, the majority of Pacific salmon is harvested wild, ultimately frozen and generally receives lower prices than Atlantic salmon. In addition, fresh, high-quality wild salmon appear in the market during different times of the year than farmed salmon.

As a result of the USITC ruling, a 2.3 percent countervailing duty was placed on Norwegian fresh salmon entering the United States, based on the finding that Norwegian producers were unfairly competing in the market because of government subsidization. Norway has consistently claimed that any subsidization that has occurred was not

Figure 3. World Salmon Production 1985-1994



export subsidies, but rather a means of maintaining viable employment for citizens in rural areas, including fishermen displaced from work because of declining wild fish stocks. The USITC determined that Norwegian regional development loans and grants, bank loans, capital tax incentives and other government grants conferred subsidies on salmon farmers. Thus, an additional anti-dumping duty of 26 percent on average was placed on Norwegian salmon. Figure 4 shows the effects of the anti-dumping and countervailing duties imposed on fresh Norwegian salmon by the United States on Norwegian exports. A General Agreement on Tariffs and Trade (GATT) dispute panel has since upheld the USITC ruling on Norwegian salmon, although the tariff rates have recently been lowered.

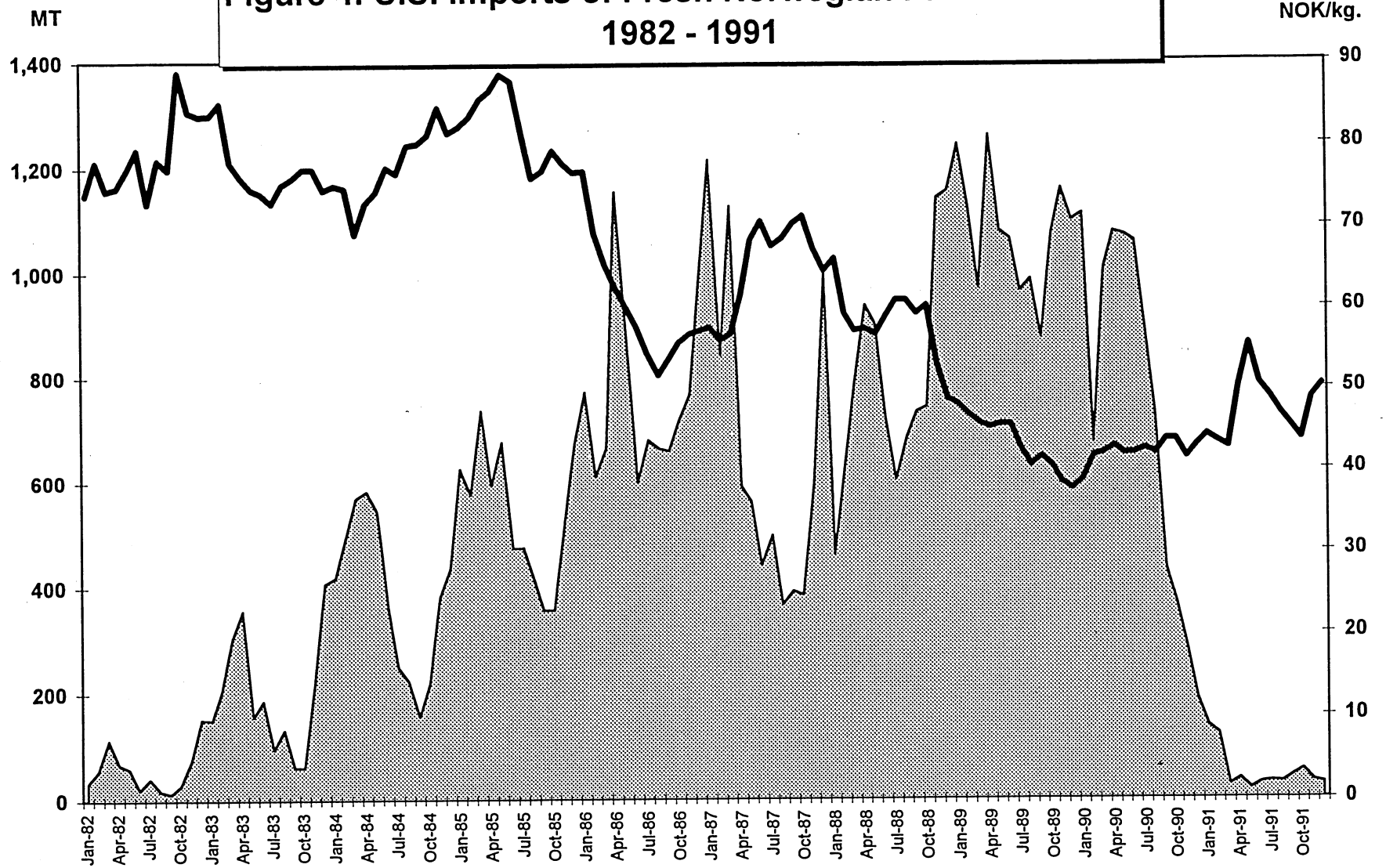
The above discussion shows that the growth in farmed salmon production has affected the competitiveness of U.S. salmon in the domestic market. Within the U.S. market, the competition with Alaskan salmon came from primarily Norway prior to 1991. Removing Norway from the domestic market did not increase U.S. competitiveness; the competition merely shifted to salmon imported from Atlantic Canada and Chile. Farmed salmon production has also had a significant impact on important export markets. From 1980 to 1990, the United States saw its share of the fresh and frozen salmon market in the EU fall from 43 percent to 11 percent (Food and Agriculture Organization, 1990b; U.S. Department of Commerce, various years). Meanwhile, Norway's export share has increased from virtually zero to more than 50 percent during the same time period (Norwegian Central Bureau of Statistics, 1990). While not as large a drop but still significant, the U.S. market share of salmon exports to Japan is also falling due to increased competition from Norway, Chile and Russia.

Policy Enforcement Trade Tools

The third major factor shaping international trade in seafood has been the growing tendency to use international trade barriers as tools in enforcing marine resource management policies. A famous example of how environmental regulations can instigate a market dispute is in the well-known conflict among several members of the EU, United States, Mexico, and others, over U.S. policies regarding "dolphin-safe" tuna and access to the U.S. market. This conflict stems from a controversial U.S. practice that uses import restrictions on fishery products as a means to force other nations to comply with U.S. policies concerning marine resources. Concern for whales, sea turtles and dolphins has led the United States to enact laws containing prescribed actions against third nations designed to force them to adopt the U.S. view of appropriate conservation and management practices. The goal of these laws is to encourage other nations to enter into or adhere to bilateral or multilateral agreements for the conservation and management of the particular species, or to have other countries adopt fishery management programs and standards equivalent to those existing in the United States. The failure to fulfill U.S. standards might, and in some cases must, lead to the imposition of unilateral trade sanctions by the United States against the offending nation. An unintended effect is to remove competition from the domestic market.

The latest incident of this issue relates to shrimp imports. In December, 1995, the United States Court of International Trade

Figure 4. U.S. Imports of Fresh Norwegian Farmed Salmon 1982 - 1991



ruled that the United States must prohibit, by May 1, 1996, shrimp imports from nations where wild-caught shrimp are harvested by commercial fishing methods that may adversely affect sea turtle conservation. Many sea turtles are listed as endangered species. Previous import restrictions were limited to fourteen Atlantic and Caribbean nations; a coalition of environmental groups sued the U.S. government to make the regulations more widely applicable. Nations are required to reduce sea turtle mortality by 97 percent, comparable to the success from the use of turtle excluder devices by U.S. shrimp trawlers in the Gulf of Mexico. The eight largest exporters, not in order, of wild-caught shrimp to the United States are India, Indonesia, Thailand, Mexico, Malaysia, Brazil, Republic of Korea and Japan.

Several U.S. laws led to the above situations, including: the 1971 Pelly Amendment to the 1967 Fisherman's Protective Act; the 1979 Packwood-Magnuson Amendment to the 1976 Magnuson Fishery Conservation and Management Act (FCMA); the 1988 Marine Mammal Protection Act (MMPA); the 1989 Sea Turtles Amendment to the Endangered Species Act of 1973; and Driftnet Control Act of 1990 (McDorman). The Pelly Amendment grants the president discretion to prohibit imports of any or all fish or fish products originating in a country that is diminishing the effectiveness of an international fishery conservation program.

The MMPA stems in part from concerns about the effect of tuna fishing on dolphins. The killing of dolphins by tuna harvesters led to federal legislative efforts that have in turn led to complaints to the GATT. The negotiations over North American Free Trade Agreement (NAFTA) were also affected by this issue. The controversy lies with the production process involved in capturing yellowfin tuna. For reasons not entirely clear to biologists, dolphins frequently associate with yellowfin tuna in the Eastern Tropical Pacific ocean (ETP). In the harvest of tuna, fishermen use purse seine nets which encircle both the dolphin school and yellowfin swimming below.

The MMPA is designed to reduce incidental taking of marine mammals in the course of commercial fishing operations. To extend this policy beyond waters directly under U.S. jurisdiction, it also provides for the imposition of trade restrictions on other nations that use production processes that result in an incidental killing exceeding U.S. standards. In early 1992, an import embargo on yellowfin tuna from Mexico, Venezuela and Vanuatu as nations that violate U.S. standards for the production of tuna in a dolphin-safe manner was instituted (U.S. International Trade Commission, 1992). Later in 1991, an embargo was placed on five nations (Costa Rica, France, Italy, Japan and Panama) for exporting to the United States tuna products that had originally been harvested by nations that did not certify their production to be dolphin safe.

Mexico filed a complaint with the GATT in January, 1991. Briefly, there were three major arguments that the United States used to defend the trade restrictions as consistent with the GATT (U.S. International Trade Commission, 1992). First, the United States argued that the measures treated imported products no less favorably than products of domestic origin. However, the GATT panel pointed out that the MMPA focuses on production processes rather than tuna; thus, imported Mexican tuna was being discriminated against. Second, the U.S. position was that the sole purpose of the MMPA was to protect dolphin life and health. Furthermore, there was no alternative measure reasonably

available to the United States to achieve this objective. The GATT panel again disagreed, finding that the United States had failed to exhaust other options such as international cooperative agreements regarding these production processes. Third, the United States argued that the MMPA is entirely consistent with the GATT exception relating to the conservation of exhaustible resources (Article XX(g)). Once more, the GATT panel disagreed, having decided that this exception only applied to the conservation of exhaustible natural resources within the United States. Efforts to conserve exhaustible natural resources outside the jurisdiction of the United States falls outside the scope of the exception. Mexico deferred a request for a GATT council ruling on the panel report, instead choosing to address this issue within the negotiations over NAFTA and other cooperative agreements.

The economic effect of the dolphin-safe controversy on the world tuna market has been widespread and significant for all sectors of the market, harvesting through retail. Trade patterns have altered substantially, with Thailand, Indonesia and the Philippines playing a bigger role as harvest has shifted away from the ETP toward the Western Tropical Pacific. In the EU, because of pressure from environmental groups, Spanish, French and Italian canners all expressed intentions not to buy "dolphin-unsafe" tuna. In response to low prices on imported canned tuna from Southeast Asia, the EU has instituted references prices on imported canned tuna and imposed a quota on canned tuna imported from nations other than those covered by the Lome Convention (Food and Agriculture Organization, 1993). Germany and the United Kingdom, which import a majority of their canned tuna from Southeast Asia, are most negatively affected. However, Cote d'Ivoire, Senegal and the Seychelles benefit since their exports to the EU are not subject to the import quota. France is hurt the least by this policy, and possibly benefits, since France imports primarily from these countries, in addition to owning a majority of the West African canneries (Food and Agriculture Organization, 1993).

Another recent controversy, which involves the Packwood-Magnuson Amendment to the Magnuson Act, responds to practices of certain countries regarding whales and allows the president to impose trade sanctions pursuant to the Pelly Amendment if a country is diminishing the effectiveness of the International Whaling Convention (IWC) (McDorman). This issue has recently strained relations between the United States and Norway, as Norway resumed limited commercial harvest of minke whales in 1993. As a member of the IWC, Norway agrees to follow the recommendations of the IWC scientific committee regarding allowable catch of the various whale stocks. In May, 1993, the scientific committee (made up of scientists from all over the world) recommended that limited harvest of minke whales could begin. The scientific committee based these recommendations on their study which had concluded that there exist approximately 760,000 minke whales in the Antarctic and 114,000 in the North Atlantic, enough to allow a limited harvest. Norway proposed to harvest a total of 296 whales in 1993. Based on the recommendation of the scientific committee, Norway would not be violating international law or IWC law by harvesting minke whales. However, a majority of the member countries declined to adopt the recommendations of the scientific

committee, prompting the chairman of the scientific committee to resign (Royal Norwegian Embassy, 1993).

The United States threatened to embargo seafood imports from Norway if it resumed commercial harvest of minke whales. Norway did resume whaling. President Clinton, under mandate from the Pelly Amendment to act on this issue, stated in a letter to the United States Congress on October 4, 1993, that while the United States is deeply opposed to commercial whaling, "I believe our objectives can best be achieved by delaying the implementation of sanctions until we have exhausted all good faith efforts to persuade Norway to follow agreed conservation measures" (U.S. President). However, the president has directed that a list of seafood products, which could be subjected to import restrictions at a later date, be made. To date, no import embargoes have been placed on Norway. However, if such an embargo were implemented, imports to be restricted would likely include cod, haddock, shrimp, herring, fish blocks and slabs (white fleshed fish used in such things as McDonald's and Burger King's fish sandwiches). These imports, valued at $107 million in 1994 (U.S. Department of Commerce, 1995), compete in the U.S. market with Alaskan and Northeastern United States products.

Improving Industry Competitiveness

The predominant theme in the above-mentioned policies is production oriented. The Magnuson Act indirectly affected the market for U.S. seafood products by establishing sole production in the EEZ and the rights of regional fishery management councils to determine harvest schemes and allowable catches. The various policies affecting how fishermen harvest their catch, constrained by marine mammal and endangered species protection, are having an increasing impact on the domestic market for seafood products. Finally, the support of other nations of their aquaculture industries is helping promote the growth of the worldwide aquaculture industry, while production in the United States is being held back by a moratorium on finfish aquaculture in Alaska, mounds of bureaucratic red-tape in the rest of the country and a lack of coordinated aquaculture policy.

All of these have had a significant impact on the competitiveness of the U.S. seafood industry.

There is little doubt that constrained U.S. production in both commercial fisheries and aquaculture impacts U.S. competitiveness. Fish stocks are declining all around the United States, particularly in the Northeast, because of over-fishing and environmental factors. This means that, although total diversity for the consumer may be increasing because of imports, the diversity of wild-harvested fish and shellfish, provided by the U.S. industry is declining. In addition, this has more firmly cemented Alaska as the dominant producer of many seafood products in the United States, even though some of its stocks are also limited. However, the competitiveness of Alaska's seafood industry is declining because its primary market is the Japanese market where Alaskan products are facing increased competition.

This competition stems from other nations producing similar species of fish and shellfish, often through aquaculture methods, as well as competition from other species whose end use is similar. The domestic market for Alaskan products is characterized by many of the same problems. Although price is not always the constraint to competi-

tiveness, consistent high quality and availability of the product can be important determinants of competitiveness in both markets.

The clear recommendations to improve the competitiveness of the U.S. seafood industry in both overseas and domestic markets are that fishery management policies and those who are involved in the regional fishery management councils must begin to be cognizant of the impacts of their decisions on the resulting quality of the product and its availability to the market. Not only would these actions be beneficial to the market, they would also promote more efficient use of these resources.

The competitiveness of aquacultured seafood in the United States is also severely constrained by regulations related to production, such as licenses (which often must be obtained from several different regulatory bodies with differing criteria), facility siting, waste treatment, movement of live fish across state borders, and others. This often means that production prices for aquacultured products in the United States are unnecessarily higher than those of competitors, making it more difficult to compete in domestic and international markets.

The development of a comprehensive aquaculture strategy for the United States, wherein regulations do not vary by state and requirements of the various regulatory bodies are consistent with one another, should be a top priority to lower production costs, risk and uncertainty, thus improving the competitiveness of the U.S. aquaculture industry.

As a final point, there are changes that could be made in marketing strategies too. Given that the fish and shellfish production is also limited by environmental (climate, water temperature, etc.) conditions, it is not likely that the United States will be a significant producer of the full range of seafood products that are currently available to the consumer. To some extent the United States seafood industry will continue to compete with substitute species from other nations.[5] The development of selected marketing policies, which would allow the U.S. industry to compare favorably with these substitute products, would be beneficial to the industry. However, those benefits must be weighed against costs to taxpayers and consumers before recommendations can be made.

As an alternative to creating marketing policies, increasing the competitiveness of the United States seafood industry might also be accomplished by industry actions. These actions could include brand-naming, or otherwise labeling products, which would allow for emphasis of positive attributes of that product. These attributes could include such things as "Product of the United States," "Quality inspected," or perhaps some form of eco-labeling. Eco-labeling could promote the positive environmental effects of the strict U.S. regulations on fishing's impact on other marine resources, or the perceived "advantages" of being farm raised over wild harvested.

Creation of generic advertising campaigns also remains a promising means of establishing U.S. products within the marketplace. However, these campaigns are often difficult to initiate because it is often unclear that those who pay for the campaign will be the only ones who benefit. For example, a hybrid striped bass campaign paid for by California aquaculturists may benefit hybrid striped bass producers in Maryland and Delaware as well. Similarly, a generic advertising program for salmon, paid for by U.S. producers (assuming that the commercial fishermen and aquaculture producers

could ever agree to this) would likely benefit salmon producers in other nations who export to the United States, unless all domestic salmon were marketed as such and the consumer could readily distinguish U.S. salmon from imported salmon.

The overwhelming difficulty in industry-initiated actions is, however, obtaining the cooperation of various factions of the industry.

To conclude, it is not clear that the development of marketing policies such as many of those in place in the agriculture industry would be in the best interests of both producers and consumers of seafood. However, there are clear directions that could be taken with respect to production polices to improve the competitiveness of the U.S. seafood industry. The role of those of us who study this industry is to illustrate, through careful economic analyses, the linkages between the markets for seafood products and production decisions. The goal of changing these policies should then be to maximize the value of wild fisheries resources, and to provide the greatest societal benefit from both commercial fisheries and aquaculture production and consumption.

ENDNOTES

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1. In the United States, coastal states maintain the right to manage fisheries within three miles of their shores while the Magnuson Act covers waters from three to two hundred miles.

2. Fisheries products are classified into edible versus non-edible products. Non-edible products include fish meal, a very important commodity that may substitute for soybean meal as an animal fee product.

3. However, ITQs are very controversial. In fact, the U.S. House of Representatives 1995 re-authorization bill for the Magnuson Act greatly restricts use of ITQs in particular, not allowing the transferability of quotas, and limiting the duration of the quota to periods of a few years.

4. There are six species of Pacific salmon: chinook, coho, sockeye, chum, pink and cherry. Cherry are only harvested in small amounts by the Japanese and Russians and are not traded on the world market. The other five species are produced by Canada, the United States, Japan and Russia, with the United States being the dominant producer of all except chum. Significant quantities of chum and pink are canned and exported to the EU; virtually all sockeye harvest is exported frozen to Japan from Alaska. Chinook and coho have been argued to substitute most closely with farmed Atlantic, although this greatly depends on the market. For example, Japan versus the EU versus U.S. domestic markets, and restaurant versus retail markets (Anderson and Bettencourt, 1993).

5. It is, of course, possible that the U.S. seafood industry may increase its investment in foreign aquaculture industries that export to the United States and other nations. The ability to unconstrainedly invest in Mexico and Chile is one of the reasons why there was support from the U.S. aquaculture industry for NAFTA. Support for the inclusion of Chile into the regional trade agreement would likely continue if investment opportunities expand in Chile.

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