Seafood Labeling Programs and Their Potential Implications for North American Salmon

**Key Points**

- New mandatory labels identifying country-of-origin and whether the salmon was farmed or wild are in use as of April 2005 by most retail establishments. These labels provide no obvious incentives to improve either the environment or sustainability of salmon resources. They may provide incentives for the farmed salmon industry to make changes within their production systems.

- Costs to producers of supplying country-of-origin labeling are non-trivial. The major cost comes from maintaining traceability of the product from production to the retail outlet and costs of adjusting information on labels.

- It is not clear how consumers will react to country-of-origin labeling, or whether they will be willing to pay a premium for salmon products that covers the additional costs imposed on the distribution chain.

- Organic standards for aquacultured products have been drafted by the National Organic Program Aquaculture Working Group, but no standards have yet been drafted for wild products. The latter standards will be created within an environment of significant controversy as organic agricultural producers and the National Organic Standards Board are strongly opposed to certification of wild fish as organic.

**Introduction**

Ecolabels are not the only labeling that consumers are being introduced to. In all cases, the logic is that consumers have the right to know as much about the products they purchase as possible.

With respect to seafood, consumers already receive mandatory information on nutritional content of the top 20 most-consumed seafood products, through labeling at the fresh seafood counters of their supermarkets. Many consumers have seen warnings in restaurants and in the newspapers concerning the safety of consuming certain types of seafood, due to several factors including taint from pollution.

While country-of-origin information is often voluntarily given with fresh, frozen and otherwise processed seafood in the United States, as of April 2005 this information is mandatory, in addition to information on country-of-processing. Furthermore, beginning April 2005, the product must also be accompanied by labels indicating whether it was produced by farming or captured wild.

Moreover, there are plans to create standards for organic wild seafood products within the United States that have been vehemently opposed by the organic agricultural community. Also controversial, but from different perspectives, are the drafted standards for organic farmed fish products.

This chapter will discuss these labeling programs, and assess the potential implications for Alaska salmon.

**Food and Fish Labels: What do they mean?**

**Country-of-Origin Labeling**

As industries find themselves competing in increasingly competitive global markets, they often look toward new ways to differentiate themselves from the competition. The U.S. agricultural producers led the way lobbying for country-of-origin labeling on food products within the United States. It was intended to create a marketing advantage for U.S. products. The assumption is that the consumer will see the ‘Product of the United States’ label and prefer that product above other nations’ produce.

There is similar mandatory labeling regulation already in place in the EU, instituted in 2002. According to EC

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1 Recall from Chapter II that ‘wild’ salmon from Alaska includes ranched (or hatchery-bred and raised) fish, which are released to the wild and become part of the ‘wild’ catch.
Regulation No. 2065/2001, the label must state country of origin, farmed versus wild, and if wild, the catch area at sea.

In the United States, legislation in the 2002 Farm Security and Rural Investment Act (generally known as the 'Farm Bill') allowed for two years of voluntary compliance with the country-of-origin labeling, with mandatory compliance following in September 2004. The USDA produced guidelines in 2002 that apply to fresh and frozen meat (beef, pork and lamb), fish and shellfish, peanuts and perishable produce (fruits and vegetables). After 2004, firms supplying covered seafood commodities to retailers were required to maintain a verifiable record-keeping audit trail that identifies the country of origin and country of processing. Mandatory compliance for all products except seafood was postponed, but country-of-origin labeling is now mandatory for all fish and seafood as of April 2005.

Under the interim final rule, fish and shellfish covered commodities must be labeled at retail, unless they are an ingredient in a processed food item (USDA/AMS 2004). Foodservice establishments such as restaurants, bars, lounges, food stands, and cafeterias are exempt. COOL requires that suppliers and centrally located retail records are maintained for one year. This interim final rule became effective in April 2005.

The law also requires seafood to be labeled as either wild or farmed. To obtain a “US Product” label, farmed seafood must be hatched, raised, harvested and processed in the United States; wild-caught seafood must be either caught in the waters of the United States or by a U.S.-flagged vessel, and also must be processed in the United States or aboard a U.S.-flagged vessel. Under that definition, hatchery salmon would be considered wild.

The American Frozen Food Institute (2003) has called it the ‘Bill of Unintended Consequences,’ with unintended confusion regarding what exactly constitutes “Made in the USA.” The USDA estimates cost of country-of-origin labeling and record-keeping for all products affected—fresh and frozen meat (beef, pork and lamb), fish and shellfish, peanuts and perishable produce (fruits and vegetables)—will be $628 million to retailers, $340 million for food handlers, and $1 billion for producers. It is unclear what the costs to the seafood industry alone will be.

Retailers are uncertain about the costs of compliance and enforcement. In a General Accounting Office report (GAO 1999) there are several sources of costs to retailers that apply particularly well to the seafood industry. In the case of the fresh seafood counter, retailers would have to display the same seafood item from different countries separately — for example, salmon from Chile would sit next to salmon from Canada next to salmon from Scotland. Retailers may not have sufficient fresh seafood counter space to accommodate this, although it is generally rare that retailers sell fresh salmon from several sources concurrently. In addition, seafood shipments generally vary from week to week, such that retailers incur costs of changing store signs and labels to reflect the origins of different shipments. As a result of these costs and potentially others, retailers might take one of several possible strategic approaches. The retailers might pass some or all of the costs down to their suppliers, or on to the consumers. They may also decide to stock more prepackaged seafood, which would already be labeled.

The costs of changing labels to reflect changing country-of-origin and country-of-processing are amplified when dealing with processed product, such as frozen products. These costs primarily affect those who are packaging the product, typically processors.

There is worry that the contents of the label will only cause consumers confusion, rather than being very informative. The Food Marketing Institute in the United States has stated that the labeling program is expensive, complicated and that it is not in the best interest of the consumer (Fiorillo 2002). The only major impact on consumers seen by this group is an increase in prices.

In Europe, the country-of-origin regulation is in its growing stages. The United Kingdom recently passed the legislation it needed for the labeling program, but not everyone is happy with how it turned out. For example, if retailers in the United Kingdom source their farmed salmon from several different countries, then the retailers can label their salmon as ‘farmed in Scotland, Norway or Chile’ (Cameron 2003).

An added element to the country-of-origin labeling is that the label must also state whether the product is farm raised or wild caught. This applies in both the European Union and United States.

As of June 2005, the Food Marketing Institute found in a survey of shoppers that only 2 to 3 percent looked for country of origin when buying meat, produce or seafood (Primedia Business Magazines & Media 2005). These consumers visited the grocery store on average 2.2 times per week and spent an average of $92.50 per week per household.

Color-Added Salmon

The U.S. Food and Drug Administration (FDA) requires retailers to label food containing color additives, and as such, retailers nationwide are being told to label farmed salmon as having color additives. This requirement has been in place for since 1995, but is only now being enforced as a result of a lawsuit against three large retailers, Kroger, Safeway and
Albertsons. The lawsuits seek millions of dollars in damages for plaintiffs who believe they were tricked into paying too much for farmed salmon that did not indicate that it contained the colorants ‘canthaxanthin’ or ‘astaxanthin’ (discussed in more detail in Chapter V). The FDA has ruled that both of these are safe for human consumption.

The justification for the label is that food safety may be compromised if there are artificial colors added. In this case of an additive to feed, not significantly different to what is done in the poultry industry, what information is conveyed to the consumer? In one example, very naïve consumers might believe that ‘color-added’ simply means someone behind the seafood counter puts red dye on the fillet before setting it in the seafood counter. With no accompanying education, consumers are confused and potentially misinformed. In a particularly egregious example, in an editorial in the Pittsburgh Post-Gazette, readers are told that salmon are “…‘sprayed with a coloring that can damage human eyes and cause allergic reaction’ and that the spray is a ‘spray paint,’ none of which are true (Pittsburgh Post-Gazette 2004).

To ensure that consumers are provided information on exactly how farmed salmon is produced the canthaxanthin or astaxanthin, as additives in their feed, the international salmon farming organization Salmon of the Americas has created a web site (www.salmonoftheamericas.com) from which retailers can download labels to display at their seafood counters.

Organic

Organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality of future generations (www.usda.gov). Organic meat, poultry, eggs and dairy products come from animals that are given no antibiotics or growth hormones. A certifier inspects the farm where the food is grown to make sure the farmer is following all the rules necessary to meet organic standards. The term ‘organic’ on a food product describes a complete system of production that begins on a farm, according to the Organic Trade Association in the United States.

From a marketing perspective, growth in retail sales of organic products in the United States has equaled 20 percent or more annually since 1990. Organic products are now available in nearly 20,000 natural foods stores, and are sold in 73 percent of all conventional grocery stores (Dimitri and Greene 2002). The organic industry in the United States is forecast to grow at a steady pace over the next 20 years, but slower than the 20 percent pace of the previous 16 years, according to the Organic Trade Association (IntraFish Media 2005). The market in the United Kingdom is also a growing market, with organic meat and poultry sales growing at 150 percent between 2000 and 2005 (Cherry 2005).

Current organic standards in the United States apply only to agricultural products, but in the European Union organic standards apply to agricultural products and farmed fish. The U.S. Organic Foods Production Act of 1990 (OFPA) leaves the door open to allow for organic standards for fish and shellfish because it includes ‘fish used for food’ within the definition of livestock. This language provides the authority for the USDA to establish national standards for the production, handling and labeling of these products when they are to be sold, labeled, or represented as organic. The USDA interprets the OPFA language to include both finfish and shellfish.

Due to public interest among some groups in the development of organic standards for both wild and aquacultured fish and shellfish, during April-May 2000 the National Organics Program (NOP) conducted public meetings in Mobile, Alabama; Anchorage, Alaska; and Providence, Rhode Island. These meetings showed little consensus on organic certification of products derived from aquatic animals. Commentators both favored and opposed developing production and handling standards for aquatic animals.

In order to more fully examine the issues raised by the commentators, the National Organics Standards Board (NOSB) formed an aquatic animal task force at its June 2000 meeting. In October 2001, this task force issued a general recommendation calling for the development of standards for the certification of aquaculture production and a prohibition on the development of standards for the certification of wild-harvested aquatic animals.2

However, since 2001, the interest in the certification of aquatic animals has grown significantly. Some USDA-accredited organic certification agents have developed private standards to address the market demand for these products. Most recently Senators Ted Stevens and Lisa Murkowski from Alaska were able to add an amendment to a defense spending bill to mandate the USDA to generate standards for organic wild fish. A rider to the Supplemental Appropriations Bill, passed by Congress in April 2003, resolved any previous uncertainty about whether organic standards for wild-harvested aquatic animals could be developed under the authority of the OFPA. The Organic Trade Association in the United States is against this, because in their view ‘organic’ is being misconstrued to mean ‘natural.’

Why is there controversy over organic wild seafood? In the simplest terms, organic requires that the producer be in control of the product from the start, to control its environment and its nutrition sources. Wild fish swim through uncontrolled water and eat uncontrolled food. There is no control whether a fish

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swims through clean water or polluted water, similarly no control over what the fish consumes. In contrast, uncontrolled water and food are less of an issue with aquaculture. The aquaculturist controls the water quality by deciding where to place the pens. The amount and type of food is monitored. Recently, the USDA also determined that as fishmeal is non-synthetic and fishmeal is preserved with natural substances it may be allowed as a feed additive or feed supplement (USDA 2005).

In June 2005 the USDA National Organic Program’s Aquatic Animals Task Force—Aquaculture Working Group was appointed to determine standards for organic aquaculture production. Another has yet to be formed, as of April 2006, for wild-caught fish and seafood. The Aquaculture Working Group released draft organic standards for the production, handling and labeling of food and animal feed products derived from aquatic animals in January 2006 for consideration by the full task force, which were released for public comment (USDA 2006). After the public comment period, the NOBS will decide whether to recommend the standards be put into rule by the USDA.

Internationally, several countries and international organizations have created standards for organic aquaculture. Tacon and Brister (2002) indicate that there are approximately 20-25 private and non-private certifying bodies with a diverse set of aquaculture standards that sometimes vary considerably from country to country, certifier to certifier, and species to species. The International Federation of Organic Agriculture Movements (IFOAM) is another international body that is attempting to create guidelines that will normalize organic production and certification worldwide.

Implications for the Alaska Salmon Market

Consumers in two of the largest seafood markets in the world, the United States and European Union, are faced with mixed messages regarding the quality of seafood available to them. On the one hand, they have been told often that seafood promotes good health. On the other hand, they are being told that fish contains mercury and PCBs, that there are artificial colorants being added to their fish, and that by purchasing certain types of fish they are encouraging misuse of the resource or environment. They are caught up in a controversy in which the terms ‘natural’ and ‘organic’ are being used interchangeably, and the consumer may or may not know the distinction between the two. Country-of-origin labeling and production method labeling further complicate the messages.

What are the implications of these new labeling initiatives and issues for the Alaskan salmon industry? Participating in voluntary labeling programs may be costly. The industry needs to weigh the costs of participating against the expected benefits. If consumers are willing to pay more for products that have particular attributes discussed in this chapter and in Chapter XVI, then the industry’s costs of providing that information may be covered. Economic theory tells us that industry should provide the information the consumer demands up to the point where marginal costs of providing the information is equal to the marginal revenue received for the product’s attribute, in other words, to the point where the expenditure of an additional penny in providing the information is equal to the additional penny received in the price of the product.

There are many sources of costs for the labeling discussed in this chapter. There are the costs of changing labeling on product packaging. In the case of country-of-origin and in farmed/wild labeling there are costs of changing packaging as frequently as sources change. However, most significant of all post-harvest costs for any labeling program may be traceability and maintenance of chain-of-custody.

Traceability is an identity preservation system. It involves being able to identify the origin of a particular unit and/or lot of products within the supply chain, and the capacity to track the path of a particular unit (USDA/ERS 2002; Carvajal 2003; Derrick and Dillon 2004). Generically, traceability is the ability to trace, follow and uniquely identify a product unit or batch through all stages of production, processing and distribution. It shows the path of that unit or batch through all the intermediate steps of the product flow and the supply chain. This information does not necessarily need to be entirely contained on the product label; some may be contained in company records. However, it must be verifiable. In the regulatory framework for providing consumers with information regarding seafood products, it requires that the information concerning the commercial designation, the production method, scientific species name, and the catch area shall be available at each stage of marketing of the species concerned.

How is this accomplished? For example, for a wild fish, a processor would need to know the country of origin, and segregate and label product accordingly. Records which help ensure traceability might be transportation records, receiving records, processor plant identification system, sales receipts, shipping manifests, inspection records, segregation plan, production records, inventory records, UPC codes, location of harvest, etc. For a processor of farmed fish, the list might look very similar. An owner of a hatchery would have to identify and segregate fingerlings as to the origin of destination, properly label and identify all marketable size fish sold, maintain the integrity of the identification and maintain ownership transfer records. Clearly, this is not costless. ‘The supplier that can clearly trace the journey of his seafood from sea to
What Information do U.S. Consumers Want?

The industry is likely to have a good understanding of how much traceability, preserving the identities of a product with emphasis on the types of attributes discussed above, will cost. What is less well known is how much consumers are willing to pay. In the case of labeling, conveying information on a negative attribute of fish (for example, added color) not only might the industry incur more costs from the labeling requirements, but the consumer might also want a price discount on that product.

Consumers hold the answer whether labeling programs will be successful or not. Consumers signal to the industry their willingness to pay for these attributes and labels regarding these attributes. If, for example, there is no willingness to pay more for knowing that the seafood product is organic, then that sends a strong signal to industry to drop plans to pursue production of organic seafood.

There has been little research done on the actual value of various types of information on consumer demand for labeled seafood products. To do a rigorous scientific study, generally the researcher needs to know retail prices and quantities sold, prices and quantities sold of competing products (perhaps same species but non-labeled), and characteristics of the consumers. Such data is difficult to collect.

Data can be obtained at a cost at the retail level from Universal Product Codes on prices and quantities, by brand, but this data is only available for processed seafood products, and does not include with it information on the country-of-origin of the product nor any other information contained on the packaging. Data from fresh full-service seafood counters can only be obtained in collaboration with the retail outlet, which is usually not a relationship retailers cultivate with researchers.

Implications

It is not easy to predict exactly how U.S. consumers will react to increased labeling of salmon—country of origin, farmed versus wild, organic, ecolabeled and color-added. In theory, the country-of-origin of salmon should not have much of an impact, especially if consumers believe that U.S. authorities are doing their job ensuring that imported salmon, regardless of country of origin, meet or exceed U.S. safety standards. In addition, the foreign sources of salmon (Norway, Chile, Scotland, Canada and Ireland) are not viewed as nations with poor hygienic standards. On the contrary, there are many very favorable views of these countries. ‘Buy American’ continues to pull in many consumers, however.

Similarly, it is difficult to predict whether or not organic salmon will be in demand by the consumer. Organic agricultural products have been on the market for many years, yet have only achieved approximately two percent of U.S. grocery sales—although they have generally trended upward.

Regardless of consumer demand for salmon with specified country-of-origin, farmed versus wild, organic versus not organic, etc., will any of these labels have an effect on the sustainability of Alaskan wild-caught salmon? The answer is ‘probably not.’ None of these labels are likely to change the methods by which salmon are caught or harvested in the United States or any of the other source nations. None are likely to improve management policies for wild salmon, or provide incentives to discontinue hatchery enhancement of the fisheries. None are likely to make wild salmon more sustainable. Nor do they necessarily need to do any of these things.

In fact, the primary positive impacts of such labeling programs may occur in supplies of farmed salmon. As the European Union continues to certify organic farmed salmon, fewer antibiotics and other chemicals will be used in the farmed salmon industry. As the United States pushes ‘color-added’ labeling, the world farmed salmon industry will expedite its research into finding lower cost, plant protein-based fish feed that does not contain the color additives of concern to some. As more focus is put on the country-of-origin of farmed salmon, there may be more effort on the part of farmed salmon exporting nations to ensure the environment around culture areas are pristine, and perform better in ratings of environmental groups. In other words, labeling is more likely to provide incentives for aquaculturists, who can control the production process for their products better than fishermen, to supply what the consumer demands and capture the gains from the market.

However, there is a bright spot for Alaskan salmon. Namely, the label ‘wild’ salmon appears to be very important in the market at the moment. As mentioned in the previous chapter, while ASMI is generally not utilizing the MSC logo in their marketing materials, they are certainly highlighting the fact that their product is wild and ‘natural’. Restaurants and supermarkets, chains and independents across the country are also emphasizing that Alaska salmon is a wild product. This, in combination with some other factors as discussed in other chapters, may have had some positive impact on prices for the higher valued species (chinook and coho) during 2004-2005.
References


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