Assessment of the Oyster Market Distribution Chain and its Implications for Cooperative Formation in the Alaska Mariculture Industry: Research Summary to the Alaskan Shellfish Growers Association

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This research examined the importance of different attributes of Alaska oyster product in the marketplace. Seafood businesses handling oyster products were surveyed to determine the relative importance of attributes such as oyster size, seasonality, and vendor integrity. The research also analyzed whether any of the survey findings had important implications for the future development of cooperatives by oyster producers.

Introduction

The oyster culture industry in Alaska is on the verge of a significant expansion. Shellfish producers have cultured Pacific oysters (*Crassostreas gigas*) in Alaska for a century. In 2002, the state of Alaska began work on a program to expedite the development of the shellfish mariculture industry for clams, mussels, scallops, and oysters. In 2004 the state of Alaska pre-approved 158 lease sites for mariculture, of which 98 were suspended culture sites suitable for oyster production. As of June 2004, 36 of these sites have been leased for mariculture production, including 16 suspended culture sites. Prior to the lease, only 58 sites total in Alaska were permitted for oyster production and only 29 reported any production in 2003 (Timothy and Petree, 2004).

Market-sized oysters from the new growing operations will be available in 2007, at the earliest. But oyster production from Alaska stands to increase markedly when the product comes online. To present, the primary market for Alaskan cultured oysters has been within the state. However, producers and industry groups report that the Alaskan market is increasingly saturated. With the introduction of product from new aquatic farm sites, selling oysters outside Alaska will be increasingly important.

Marketers have long understood the perceived value or quality of a given product to be a composite of preferences for many attributes. Successful product marketing and sales depend not only on a core product, but on a firm's ability to provide a suite of desirable services and benefits to support the product offering. The most exquisite tasting oyster may nevertheless be undesirable in the marketplace if procurement and shipping processes are unwieldy, or if the grower is unable to offer sufficient product volumes, or is unable to assure a regular delivery pattern.

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As oyster producers move into the next phase of their industry's development they may seek organizational tools to help with their marketing and sales efforts. One such tool commonly used in food production industries, including agriculture, wild capture fisheries and mariculture, is the cooperative business form (Pollnac and Poggie, 1991). This research examined the implications of the survey findings for the potential development of cooperatives by oyster producers.

Methodology

The research processes included a preliminary assessment of the Alaska oyster industry, which involved an executive interview process with university researchers, oyster industry participants, and government regulators, to understand the current status of the Alaska oyster industry and to understand potential future changes.

To assess the importance of a variety of oyster product attributes, a survey was distributed to 987 seafood businesses in North America that handle oyster products. Surveys were returned by 87 businesses, and these results were analyzed to identify product preferences and purchasing trends.

In addition, existing literature on agricultural, maricultural and fishermen's cooperatives was examined. This research informed an analysis of the potential implications of the market research on cooperative development in the Alaska oyster industry.

Survey Findings

Eighty-seven surveys were returned from respondents in the United States. No surveys were returned from Canada. This was a total response rate of 9 percent. This is within the normal range for a mailed survey. Results were cross-tabulated by geographic region, business size (by revenue) and length of time businesses were in operation.

No significant differences were found by business size or length of time in business. Some differences were identified by geographic region. These differences will be discussed below. In general, however, results were consistent across the respondent group.

Respondents were asked to rate specific attributes of oyster product that contribute to oyster quality. Preferences for various intrinsic and extrinsic attributes, such as geographic origin or shelf life were also rated. Other survey questions were specifically designed to address the idea of a "total product," consisting not only of the physical product itself, but also in value added by the oyster business, such as supply consistency or uniformity of grading.

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The survey findings showed that a buyer's confidence in the oyster vendor is the most important of eight key attributes in their overall assessment of oyster product. (The seven other attributes, in order of decreasing importance, were shelf-life, supply consistency, price, product form, oyster size, region of origin, and method of production).

In addition, executive interviews indicated that oyster "quality" was important to a buyer's decision to purchase oysters. Survey respondents rated the importance of thirteen attributes to the total perception of quality. On a 1 to 10 scale, where 10 was most important, buyers rated the attributes as follows:

- water quality and shelf life (9.3 each)
- government safety certifications (9.0)
- absence of grit in the product (8.9)
- supply consistency and price (8.8 each)
- "fill" (quantity of meat) in the shell (8.6)
- consistent product grading (8.4)
- low levels of "shrinkage," or product discards (8.4)
- oyster size (8.3)
- geographic origin, shape, and cup depth of the oysters (7.1 each)

Buyer confidence in the vendor was also identified as the most important attribute when it comes time to actual make a purchasing decision. The ten possible attributes were rates as follows:

- Confidence in vendor (9.3)
- Taste (9.2)
- Water quality and price (8.9 each)
- Year-round availability (8.2)
- Size (7.9)
- Geographic origin of the oyster (7.8)
- Uniqueness of the product (7.3)
- Minimum order size (7.0)
- Packaging (6.8)

Implications for the Formation of Cooperatives

The general model for Alaskan oyster mariculture businesses is that of the owner/operator, where an individual or family handles all aspects of the oyster business, from cultivation and harvest of the oyster to bookkeeping and business development, to marketing and sales. In some cases producers have formed extended business relationships to share responsibility for some of the business activities or to provide contract services or networks. In a limited number of cases, harvesters have developed cooperatives to handle some of the marketing and sales functions for their businesses. This research market examined market preference

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for oyster product attributes, and considered the potential benefits of cooperative development based on the preference data.

Survey respondents showed clear preferences for a variety of key oyster product attributes. For example, results show that respondents place highest importance on their relationships with and confidence in the oyster vendor; and that taste, water quality at the point of production, and price also contribute to their overall assessment of product. Respondents are more likely to consider purchasing Alaskan oyster product when they experience supply problems at some point in the course of a year. As expected, respondents prefer lower prices in general, though respondents with supply problems are more likely to consider Alaskan product with its relatively high prices than other respondents. Finally, Alaskan oysters have perceived strengths in the areas of water quality at the point of production and overall product quality. These are among key aspects that might be emphasized in the industry's promotional activities.

A business's ability to synchronize its product offerings with the market preferences may have implications in a consideration of forming cooperative partnerships. In particular, a business's ability to establish a good name and reputation, fill supply gaps and provide a consistent supply schedule may play into decision-making processes about cooperative formation.

Establishing a Good Name

The research revealed that buyers' confidence in the vendor was extremely important to their buying decisions, ranking higher than other attributes such as taste, price and year-round availability. Based on this data, producers may evaluate how well they are able to provide customers with services and qualities that will cultivate the development of trusting business relationships. These qualities may include reliable delivery schedules, reliable product classes and consistent production schedules. They may also include less tangible qualities such as having sales personnel regularly accessible to customers, having good charisma or interpersonal skills, or having the ability to impart product information to customers in a way that satisfies their needs. Producers' analyses of possible partnership or cooperative formation would likely benefit from an examination of the most effective manner in which to develop and maintain a strong reputation and positive image.

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Filling in the Supply Gaps

Based on survey responses, respondents were separated into two categories: those who would consider purchasing Alaskan oysters, and those who would not. When analyzed more closely, the group of potential buyers revealed several interesting characteristics. The group of potential buyers was more likely to experience problems sourcing oysters, particularly during summer months, when red tide can impact oyster beds in the continental United States. Alaska's production of oysters is generally uninterrupted during these months, though in some regions oysters may experience pre-spawn physiological changes. These results would suggest that filling in the supply gaps may provide opportunities for Alaskan oyster producers. The ability to provide consistent supply to buyers may be enhanced by the formation of cooperatives or partnerships. Providing customers with a consistent supply of product, year-round or seasonal, may lead to a stable relationship with the buyer, possibly characterized by longstanding sales relationships.

Product Delivery Schedule

Survey respondents indicated a strong preference for product delivered twice weekly. As was indicated by one distributor, a regular delivery schedule aids in the maximization of shelf life, as shelf life is not squandered holding product at the business before sale. More than 50 percent of the respondents preferred delivery twice weekly, and an additional 24 percent of the respondents preferred product on a weekly basis. Alaskan oyster producers may consider partnerships or cooperatives in order to meet a regular delivery schedule and to pair it with the ability to provide product with a long shelf life.

Price

Alaskan product is currently extremely expensive relative to oysters produced elsewhere in the United States and Canada. Shipping costs, production technique and rural production combine to produce a very high bottom line for oyster producers. Survey respondents report that price is an important factor in their general evaluation of oyster product and their decision to actually purchase oysters. The oyster industry in Alaska consists of dozens of small owner-operators, and the ability of producers to achieve economies of scale is limited by the size of their operations.

Combining business functions through the development of cooperatives may allow relatively small production operations to achieve economies of scale. A cooperative can address a number of different business functions, including production, marketing or purchasing.

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Economies of scale may not be possible for all functions of every oyster operation, but producers may benefit in some areas of their business through cooperative development.

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