Economically Enhancing the Southwest Nova Fixed Gear Fishing Industry:

Understanding New England Models

Submitted To:
The Bay of Fundy Marine Resource Center

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Table of Contents

Preface:

The numbers of fixed gear fishermen in Southwest Nova Scotia are dropping fast. Some fishermen believe that it is simply not worth fishing due to the limited catch and the prices received from the buyers. Many of these fishermen are opting for the $70,000 government buyout under the fisheries restructuring program. With fishermen coming from a long history of fishers and spending their whole lives in the industry, a change in profession does not come easy, especially for the older fishermen. Some fishermen have made it known to me that they would rather fish for a living then have a much higher paying job doing any thing else. And would stay a fisherman as long as they can make a living. Many fishermen believe that something must be done to better their situation or the small boat fishery may not survive, so they have been looking for options better their livelihood.

Fishermen in Nova Scotia have been looking across the Gulf of Maine where the prices received at the wharf in New England are often as high as three times the price received across the Gulf of Maine in Nova Scotia. If the fish that are landed are the same species, caught in the same area, and have comparable quality then what explains the price difference?

One explanation for the price difference is that the New England fishermen are able to get the buyers to compete for the fish through full market exposure.There are three different ways for the US fishermen to market their fish in New England:

- Directly to the buyer, which is common with lobster, tuna, swordfish, and sea urchins;
- Through a fishermen's cooperative;
- Through an auction such as the Portland fish Exchange or the Gloucester Seafood Display Auction.

The fishermen in Nova Scotia feel they are suffering from prices that are not representative of the quality of their product due to their lack of market options as well as the purchasing power held by their buyers. If the fishermen could either take advantage of the prices in the US or force the industry to be more competitive for their product, then the livelihood of those fishermen could be significantly increased, the industry would become more competitive, and the economy would benefit. This report is an attempt to describe and analyze the options available to the fixed gear fishermen by gaining an understanding of the New England fishery.

Background:

The type of equipment used by the fishermen distinguishes the fixed gear fishery or the so-called hook and line fishery. The fixed gear sector is divided into three main groups, Handline, Longline, and Gill nets. This type of equipment differs from the dragger technology used in the mobile sector of the fishery in many ways but the core difference is that the fixed gear stays relatively in the same place during a particular session of fishing. The equipment is set in place then left for a time and then the catch is recovered. This method of fishing is much less efficient than dragger technology. This lesser degree of efficiency could prove more valuable than one would think. With only a limited amount of fish being caught at one time, the fishermen often handle each fish individually, which allows for a drastic increase in quality, depending on how much care the fishermen take when they handle each fish. With this method of fishing the fishermen can have complete control over the quality of fish.

Mobile gear consists mainly of dragger boats using otter trawl technology. With this type of fishing a large net is dragged behind the boat along the sea floor. When the net collects enough fish it is brought to the surface and lifted from the water. In the process of the fish being brought on board, often many tones at once, much of the fish is squished or deformed by the weight of the fish above it. This causes much of the fish caught by draggers to be of a much lower quality compared to the fish caught by the hook and line fishery.

The Mobile fleet often fish for many days at a time where the fixed gear fishermen can fish on grounds closer to shore, and make shorter trips. This allows the fixed gear fishermen to minimize the elapsed time between when the fish are caught and the time of sale.

To illustrate the potential difference in quality possible with fish caught by the hook and line fishery as opposed to the otter trawl technology the following should be considered. A fish caught by a handlinner can be brought back to the buyer alive with relative ease, if worth the effort of the fishermen. For a dragger to bring back live fish is virtually impossible.

With the very productive Mobile fleet being allotted the majority of the Total Allowable Catch (TAC) each year, the fleet has become the driving force of ground fish supply. One dragger can land as much fish as all the handlinners combined would land in a year. The shear bulk of fish landed by the mobile fleet compared to the fixed gear fleet puts the fixed gear fishermen in a minority position to the draggers within the industry. The fixed gear fishermen usually accept whatever market situation arises from the activities of the dragger fleet, including price and the needs of the buyers.

Most of the fixed gear fishermen have historically been price takers, by selling their fish to buyers at dockside and accepting whatever the going price is for that point in time. The fishermen accept the price offered by the buyer, but they feel this price is not representative of the true value of the product. They still accept the price for many reasons, including the belief that they have no option, and if they did have an option to sell elsewhere, the negative effects of selling to someone other then their regular buyer could be great. I will explain this in more detail later in the paper.

There is a lack of competition between fish buyers for the fish caught by the fixed gear fishery. This fact is the main reason the prices offered to the fixed gear fishermen by the buyers are not representative of the true value of the product, and there are a number of reasons for this lack of competition.

One reason is that often buyers in the industry are vertically integrated. The buyers own draggers and either hire a captain to run the boat or lease the boat and the license to a captain. In either situation there is an agreement that the catch will be sold to the buyer who owns the boat. The supply from the draggers, owned by the buyers, often forms the bulk of their supply. The buyer would only require (and therefore compete for) outside supply when their own draggers can't catch what is needed for normal operation of their processing plants. Whatever fish they do buy from outside fishermen such as independent draggers or the fixed gear fishermen is additional to their normal operations and simply adds to the productivity of their processing plants. However it seems they are unwilling to pay a premium price for this increased productivity.

A second reason why there is little competition between buyers is geography. With the capital investment required for operation of processing plants and the questionable health of the fish stocks there is little wonder why the numbers of fish buyers/processors are low and geographically dispersed. A major effect of this is that many fishermen can not or will not travel farther then needed to sell their fish that is, unless there is a significant price difference.

Many fishermen have a financial tie to a specific buyer. These financial relationships came about as a result of necessary investment costs incurred by the fishermen such as a boat overhaul, new engine, new fishing gear etc. When the fishermen were unable to finance the investment the buyer would offer to pay for the investment with the understanding that the buyer would have exclusive rights to future catches. These close buyer/seller relationships make it difficult for the seller/fishermen to switch buyers if the prospect was attractive, without first settling the debt with the buyer.

There is one other situation that reduces competition for the fish caught by the fixed gear fishermen. Many buyers are also suppliers to the fishermen in that they supply the fishermen with the materials needed to fish such as hooks, bait, ice, and so on. It's in the interest of the fish buyers to refuse the sale of supplies to fishermen who do not sell their fish to that buyer. This could make it difficult for a fishermen who 'plays the market' to acquire a reliable supplier, especially those fishermen located in remote areas where there are only one or two feasible suppliers.

The fixed gear Fishermen are not unaware of their situation. They understand that they could produce the best quality fish possible if the price received made it worth the effort. The fishermen understand that the prices they receive are not representative of the quality of the fish, and they have a strong belief that something must be done to enhance their livelihood if they are to survive in the fishing industry.

The Fundy Fixed Gear Council (FFGC) was established in the spring of 1996. It's through the FFGC that the fishermen voice their concerns. Also it was through the FFGC the Bay of Fundy Marine Resource Center was created. The Bay of Fundy Marine Resource Center does research on the behalf of many organizations such as the FFGC. (For a detailed description of the FFGC and MRC please see appendix # 2).

Purpose:

The fixed gear fisherman in Nova Scotia wished to evaluate their options for the improvement of their current situation. The frustration and limitations felt by the fishermen in NS largely drives this.

The main purpose of this paper was to look into the options available for the direct sale of ground fish into New England by the fishermen themselves, so that the FFGC could take advantage of the higher prices in New England. To explore these options I visited three types of marketing organizations in New

England. By either modeling these organizations in Canada, or gaining access to them where they are, it is believed that the fixed gear fishermen in Southwest Nova Scotia could financially benefit. If there were greater market exposure in Nova Scotia the prices received by the fishermen would be more competitive and representative of the true value of the product.

I visited each of the following organizations, where each is unique in their purpose, and responsibilities. The Gloucester auction, a privately owned seafood auction, the Portland Fish Exchange, a state owned government operated auction, and two fisheries cooperatives. Each of these organizations enhanced the industry in their area, and each has benefits and drawbacks.

I attempted to gain an understanding of the operation of each organization, its objectives, and the potential benefits from each, from the point of view of the inshore fishermen in Nova Scotia.

Methods:

Throughout the summer I met with key members of the Fundy Fixed Gear Council, and attended several meetings as an observer. During these meetings I gained an understanding of the situation and needs of the fixed gear fishermen in Southwest Nova Scotia.

For my trip to New England I set up a meeting with Craig Pendeleton of Northwest Atlantic Marine Alliance (NAMA), Larry Ciulla of the Gloucester Seafood Display Auction, and Rollie Barnaby of the University of New Hampshire. Craig Pendeleton was involved in the development of the Portland Fish Exchange and although he is not employed by the exchange, he has kept in touch and was able to give me a complete operational description, and an objective overview of the exchange. Craig also gave me a tour of the facilities while an auction was taking place. Larry Ciulla is the manager of the Gloucester Seafood Display Auction. Larry gave me a complete tour of the auction in progress, and took some time for an interview. Rollie Barnaby was involved in the development of the two fisheries cooperatives that I visited and gave me an overview of their operations as well as a description of the benefits provided by the co-ops.

On Aug 1, I met with Craig in the morning where we traveled from Saco Maine to Hampton New Hampshire where we met with Rollie Barnaby and Mark Simonitsch. Mark is a weir fisherman and a businessman who is on the board of directors of NAMA. Mark was able to give me valuable objective insight on the Gloucester exchange and the Portland exchange. That morning we toured the two cooperatives one near Hampton and the other in Portsmouth New Hampshire where I met with the manager of the Portsmouth co-op. We then traveled north back to Maine. Topics included the effects of the exchanges and the co-ops as well as possibilities for the Nova Scotia industry.

Early the next morning I met with Larry Ciulla in Gloucester Massachusetts where I spent four hours touring the facility and interviewing Larry. Topics included the objectives of the Gloucester Auction as well as possibilities for relations with Nova Scotia.

I traveled back to the Portland for the 12:00 auction to see it in action. Here I got a tour of the PFE and a more detailed description of its operation. I then got a chance to talk with Craig and Mark about changes in the industry and the role of NAMA. See Appendix #3 for a map of the places I visited.

Model # 1: Private owned auction

Gloucester Seafood Display Auction (GSDA)

The Ciulla family was responsible for establishing the auction in association with the city of Gloucester. The auction is fully owned and operated by the Ciulla family. GSDA was developed as a promising business opportunity and as a chance to enhance the fishing industry in Gloucester. The Gloucester industry was expected to benefit from the auction in ways similar to the ways the Portland industry benefited with the development of the Portland Fish Exchange.

The policy adopted by the Gloucester exchange is to grow quickly in both volume (of fish) and locations as well as to continue to be adaptable to the dynamic fishery.

The Gloucester Seafood Display Auction identifies its primary function as a place where buyer and seller meet. This allows the seller (fishermen) to gain full market exposure, and gives them the opportunity to get a fair price that is representative of the quality of the product.

The Auction wishes to take the notion of full market exposure as far as possible. The way it wishes to do this is through remote auction technologies. However there is resistance to remote auctions of which I will talk about later in this paper. Larry Ciulla feels that he can overcome the issues causing the resistance to remote auctions, by developing the auction with these issues in mind. For example, the online auction could be developed with features such as a display of the remaining bidders during the auction.

The auction provides contact between the seller (fishermen), and buyer, as well as services and essentials needed by the seller, such as docking, ice, fuel, culling, transportation of product, etc. The auction is adaptable in that it will provide any service that is necessary to attract the seller (or fish) to the auction, for a fee.

The Gloucester Seafood Display Auction generates its income in the same way as the Portland Fish Exchange, through charging both the buyer and the seller handling fees on a per pound basis. The total charge averages about $0.07 per pound, with the buyer being charged $0.03 and the seller being charged $0.04 ($0.03 plus a $0.01 charge for unloading).

There is logic in providing any service to the seller/fishermen in order to attract the seller. That is, if there is volume of 'quality' fish flowing through the auction then buyers will be there to purchase fish. Otherwise they are losing an opportunity to buy fish where their competition maybe getting a good supply. The process of increased buyer involvement escalates to the point when the seller is exposed to full competition for their product, and prices that reflect this.

The planning stage of the auction started seven years ago, but the auction was not established until three years ago. There was an extensive planning stage that took place with the assistance of the City of Gloucester. The process and details of operation were well thought out through this stage. It also took a long time before the technology was known to be feasible to do a remote auction.

The auction merged with www.globalfoodexchange.com (Global) about a year ago. Global can provide the money and technology for the auction to expand in the ways envisioned. It should be noted that the company is now part of a large corporation that is involved in not only seafood, but also virtually all other food types.

When GSDA merged with Global, their policy of growth didn't change, but rather became a priority. However GSDA is now committed to the development

of remote auctions and the incorporation of these remote auctions into the core of the auction. Now Global is willing to commit the resources (money and technology) to accomplish this. Plans are already in the works for other auctions in areas outside of Gloucester. These satellite auctions will eventually be connected through remote auction technologies.

If Gloucester has enough satellite locations with enough fish flowing through the on-line auction, every buyer would have to be involved. The reasoning behind this is that the buyers can't let their competition be somewhere they are not. If a majority of fish flows through the auction then the buyers who do not buy from the auction are losing exposure to supply.

The Internet auction in Gloucester could attract buyers from all over the world that simply cannot make contact with the fishermen on the dock and purchase fish on their own. With the auction the buyers have the contact to do just that. This would be attractive to external buyers because they can get consistent supply at one place without going through many different brokers. If the catch for a species is down in one area and up in another area the supply can be easily balanced through the auction.

In my interview with Larry Ciulla, he stated, "If it swims and can be sold we will deal with it". This statement includes farmed fish as well as wild stock, shellfish and even live fish. Clearly this statement answers the question of what species they deal with. All the fish landed at the auction get treated the same regardless of volume or species. Some shellfish such as sea scallops (without the shell) are currently flowing through the auction, and they intend to move into other shellfish. To deal with some species such as lobster or other live fish, there is an capital investment that must be made before the auction facilities can hold them. There is a desire on the part of the auction to deal with the species even if there is zero net profit from dealing with it. The reason for this is that the availability of some species may attract sellers that wish to capitalize on underutilized species and in turn buyers to the auction. However the auction would not take a significant net loss from dealing with a species that requires investment. Other species or options that are realistic are open to evaluation, but there is an obvious need for adequate supply and demand for the auction to deal with it.

The auction has shown interest in live fish due to the growing demand, but there is currently little supply in the US. To handle live fish there is a significant investment cost. Extensive and expensive live wells, circulation systems, filters, and environmental control systems would be needed to handle live fish.

With for profit organizations any investment made needs a positive net return. Gloucester Seafood Display Auction is no different then any for profit organization. If there is adequate long-term supply of live fish then the infrastructure will be developed to deal with it, but only if there is adequate supply. An interesting point about live fish is that quality is not an issue. If the fish passes inspection by the Canadian Food Inspection Agency, which would inspect for disease, the quality of a healthy live fish simply can not be any better. A live fish can even be sold before it reaches the auction, assuming it will stay alive.

Larry is very interested in a supply for dogfish (*Squalus acantbias*) to flow through the auction. This is significant for two reasons. First, dogfish is a species of shark. Sharks have a build up of Uric acid in their tissues, and therefore need to be separated from the rest of the fish at the auction to prevent contamination. Second there is a growing fishery for dogfish in southwest Nova Scotia for which there is an undeveloped market and low prices. This combined with the shrinking supply from the US fishery, puts Nova Scotia fishermen in a good position for export.

Model # 2: Publicly Governed Auction:

Portland Fish Exchange (PFE)

The Portland exchange was originated in 1986 by a coalition of fishing vessel owners, processors, the city of Portland, and the Economic Development Authority. The primary reason for the establishment of the Exchange was so that the fishing industry in Portland would not be forced to accept prices set in other parts of New England.

The Portland Fish Exchange was designed as a non-profit organization that enhanced market competitiveness in order to increase the economic health of the industry. The fishermen felt that the industry was taking advantage of them and wanted change. Some innovative individuals visited Europe where successful auctions have been in operation for some time. Those individuals went on a limb and took a risk by developing the PFE. The risk paid off by producing the results needed.

During it's initial stages the development of the PFE faced significant financial difficulties. In 1988 the exchange considered declaring bankruptcy. To help the exchange during this time the city of Portland provided assistance and the industry strengthened its commitment. The Portland Fish Exchange survived and eventually thrived. Since then the PFE has developed a strong reputation for being a fair and impartial organization, and handles 75 to 80 percent of the groundfish and 50 percent of the total volume of seafood landed in Portland.

The Portland Fish Exchange generates its income through charging both the buyer and the seller handling fees on a per pound basis. The total charge averages about $0.07 per pound, with the buyer being charged $0.03 and the seller being charged $0.04 ($0.03 plus a $0.01 charge for unloading).

The most fundamental difference between the Portland Fish Exchange and the Gloucester Seafood Display Auction is the primary interest of the governing body. Portland is a state owned not for profit entity and controlled by a board of directors. Gloucester is a family owned business with a strong interested in the bottom line on its income statement. The Portland auction will make changes to its policy only if it's in the best interest of the industry in Portland. On the other hand, the Gloucester auction will make changes to its policy if it results in increased long-term revenue.

An example of the difference in strategy adopted between a public auction (PFE) and a private auction (GSDA) is the commitment to dogfish. The Portland exchange will not deal with dogfish. The primary reason is because of the problems involved with the possible contamination of other fish by the Uric acid produced by dogfish. With a low volume of dogfish produced in New England the Portland exchange will not make the investment or changes to operation needed to deal with dogfish. In this situation other members of the board of directors overpower the voice of those fishermen who wish to sell dogfish at the PFE. As I explained in the section on GSDA this auction is willing to commit itself to dealing with dogfish mainly to contribute to the growth of the auction.

The Portland Fish Exchange enables the fishermen to have full exposure to the buyers where they can accept the highest bid on their product. Here the buyers can get full exposure to just the right quality and quantity they are looking for. By connecting the buyers with sellers in an open and fair market, the industry becomes more efficient, and benefits from increased prices for the sellers and increased quality for the buyers.

The prices the buyers will bid at the Portland Fish Exchange is representative of the demand for the product, with the highest quality fish having the most demand. Just as when the buyers compete with their prices for the best quality, and the prices go up in general, the sellers/fishermen compete with quality for the best prices, and the result is a general increase in quality across the industry. This situation was proven to work with the establishment of the Portland Fish exchange.

Model #3: Fisheries Cooperatives

The Portsmouth CO-OP

The two cooperatives that I toured operated in essentially the same manner with minor differences. The Portsmouth Co-op was more developed in its operations therefor I will talk about it unless otherwise noted. The Hampton co-op was an example of how a co-op could operate with minimal funding.

Both cooperatives were developed for essentially the same reasons. The fishermen needed a transportation service that could take the day's catch to the buyers cheaply. This transportation service would also provide the fishermen with more time with their families.

Prior to the development of the Portsmouth co-op the fishermen would drive their boat about two hours each way to sell their catch. This was both expensive and time consuming. At the start of the co-op a handful of fishermen threw in $1000 each and bought a truck to transport the fish. The truck saved the fishermen money in transportation costs, gave them more time with their families, and it allowed the fishermen to pool their fish to cheaply transport it to markets.

The co-op can be as small as one freezer truck that can transport fish, or as large as any organization depending on the membership and the volumes of fish. The co-op has the ability to take advantage of all markets, and any new market opportunities that arise.

When the Portsmouth cooperative was established, some additional fishermen outside the founding members bought shares in the operation. This raised capital to be used to purchase more equipment such as trucks and an ice machine.

The Primary function of the co-ops is to allow the fishermen to take control of the prices they receive. By using the volume created by pooling their fish they were able to create 'economies of scale' and cheaply transport their fish to more lucrative markets. They then had the ability to 'play the market'.

The manager of the co-op would watch prices and analyze the market to determine where the fishermen can get the best prices for each species of fish. It is much easier and efficient for the manager of the co-op to do market research than for each individual fisherman.

The co-op never takes ownership of the fish. That way if the fish do not sell then the co-op is not out any money, and the fisherman is always free to do whatever he/she wishes with their fish, even if what they do with the fish is not what the manager recommends.

The revenue to the co-op comes from a charge for every pound of fish that goes through the co-op. The operating expenses are deducted and then the net income gets paid back to the fishermen in the form of dividends. The amount is determined by the amount of fish that each fisherman puts through the co-op over the year in proportion to the total volume of fish that was dealt with by the co-op. The end result is that the fishermen's net payment to the co-op is only his/her fair share of the operating expenses plus any capital investments made into the co-op. With this in mind it could be said that the co-op acts as a type of 'non-profit' brokerage firm. Also the fishermen only pay an amount by poundage so that regardless of size of the fishermen's yearly catch, the co-op would be just as useful.

When the Portsmouth co-op came to full operation, the manager was in a position where there was enough of each species of fish being caught, and enough trucks to pick where they would send different species, and get the best prices. The prices are dependent on the needs of the buyers and different buyers in different areas will offer different prices. Therefore, because of the co-op the fishermen were able to maximize the money received for the catch.

An important observation was made with regards to the co-ops. Before the co-op existed, many of the fishermen would have feuds with each other, but then once the fishermen got involved in the co-op there was no room for the feuds. Now the fishermen were business partners and in order for the co-op to work, they needed to agree on things. With the benefits of the co-op in place, the fishermen involved in the Portsmouth co-op worked together and put aside their differences to make it work.

During my interview with Rollie Barnaby some essential criteria for a co-op to work was outlined. One of those criteria is that there must be a need for the co-op. It is believed that the fishermen will not get involved unless they feel as though they have no option. Secondly both co-ops that I visited were on state owned property. One of the co-ops leases its facilities for as little as $5 per year. It was stated that without government support neither co-op would have worked over the long term.

The third necessary element for the co-op to work is volume, both in fish and in members. There is a need to grow in volume to provide the necessary cash flow for day to day operations. There is a need for growth in members to provide the capital investment necessary to provide the services needed and to make the co-op cost efficient.

Display Auctions: What's the big deal?

Display auctions are popular in New England and elsewhere for two main reasons they create a fair and open market, and a more efficient allocation of supply and demand.

There are several major results that arise from the development of a display auction. Due to increased competitiveness brought about by the auction there is a tendency for a general increase in prices offered for the fishermen's catch. Also there is a tendency for better price stability, and general increase in the quality of the seafood sold at the auction.

The quality of the catch increases because there is a strong tie between the price and the quality of the fish; with the high quality fish getting the highest prices. The fishermen tend to take better care of their product if they will obtain a higher price as a result.

A major concern with Display auctions is in how they are governed. Among buyers in the US there is intense opposition to private auctions mainly due to the belief that a privately owned auction has an inability to be a fair and objective auction. There is consensus among stakeholders, who are not directly involved with private auctions. Those stakeholders agree that governance by a public or quasi-public board representing the whole range of stakeholders (Buyers, Sellers, community, and government) is the best guarantee of a fair and impartial auction.

Those involved in privately run auctions believe that the efficiency of a private auction is essential for the initial success needed for an auction to get off the ground. Also it is believed the problem with the fairness of a private auction can be overcome with third party intervention in areas of buying, processing, or sale of product.

Resistance to Remote Display auctions:

There is resistance from the buyers towards the use of a remote auction because the buyers want to know whom they are bidding against. They felt that they would loose necessary information about their competitors that would help make informed decisions with an online auction. They believe they can make better decisions with the English cry style auction, where they can see whom they are bidding against.

A second reason for resistance towards a remote auction among buyers is the concern that local buyers will lose access to product as more and more of the seafood is purchased by distant buyers. This concern is valid at a community level in that the community would lose the economic value of any value-added processing that would be completed by buyers who buy from outside the area.

The benefits of a remote auction favor the seller more than any other stakeholder. With a remote auction buyers will come in from all over and compete for the available seafood. The increased competition will increase the price received by the fishermen.

Acceptance to a new auction:

Many buyers in an area would be resistant to a new auction coming into their area, mainly because they will be forced into increased competition for their supply. This could cause problems because they would be paying a higher price for their supply. A buyer could also argue that an auction would centralize landings of fish. With the fishermen landing their product at the auction the buyer would then have to transport the fish from the auction their processing plants.

There are a few benefits that attract the buyers to the auctions, increased access to higher quality product, better price stability, and an overall more efficient industry.

With the high volumes of fish flowing through the auction the buyer is virtually guaranteed access to as much fish as he/she wants. Without the auction the buyer would need to search for new suppliers (fishermen) and convince them to sell their catch to that buyer rather then their usual buyer if they needed an increase in supply.

The buyer gets increased quality with a display auction because (with the price being quality driven) the fishermen will do whatever they can to increase the quality of their fish relative to other fishermen. This high relative quality enables the fishermen to compete for the highest prices offered at the auction. The end result is that the overall quality across the industry is increased. As the quality increases, the value also increases. In short, the seller gets more money (income) from his catch, and the buyer gets better quality fish.

The lack of options on the part of the fishermen regarding whom they could sell to (other than their usual buyer) was enough for the seller/fishermen to be attracted to the auctions in New England. All that was needed was a few buyers to agree to buy from the auction. Now the sellers may have at least a few buyers who will compete for their product. From here more sellers would provide product and more buyers would be attracted to the supply. This cycle can then grow with more buyers and more sellers being attracted to the exchange.

Economic feasibility for a Display Auction in Nova Scotia:

A detailed study is needed regarding the feasibility of a display auction in Nova Scotia. Such a study is beyond the scope of this paper. However it is clear that large volumes are needed for the day to day operation of a full size display auction. The Portland Fish Exchange currently deals with volumes in the range of 12,000 metric tons per year. A study completed by A.T. Kearney Inc. in 1997 for the Massachusetts Department of Fish and Wildlife and Environmental Law Enforcement. The study was entitled 'Management and Feasibility Study on Establishing an Electronic Fish Auction System'. The study stated that it would not be feasible for a traditional display auction to operate with less than 6,000 metric tons per year.

The total allowable catch available to the FFGC of all spices is less than 1,000 metric tons. Therefore it would take more than the combined efforts of the fixed gear fishermen to develop an auction in Nova Scotia.

The involvement of the mobile sector would be necessary for a traditional display auction to operate in Nova Scotia. However an auction in Nova Scotia could operate on low volumes if the auction was specialized in high quality, white table markets that would develop very high prices. These high prices would allow the auction to take a larger commission from each pound of fish that flows through the auction.

This type of auction could make use of the potential high quality fish caught by the fixed gear fishermen, but there would be a need for the auction to attract a number of specialized high quality buyers from distant areas, and shipping to these areas would become an issue.

Analysis:

Private auction (GSDA)

The Gloucester Seafood Display Auction can open a satellite auction anywhere, which would provide the growth desired by the auction. It should be kept in mind that GSDA is a corporation and has few loyalties to the community regarding community economic enhancement.

A satellite auction of the Gloucester exchange in Nova Scotia would consist of a full-scale auction that would most likely take advantage of an online auction. This is in line with the goals of the auction. A full-scale auction in Nova Scotia would also need the involvement of the off shore sector to provide the volume needed for the auction to operate. This online auction would provide access to many new buyers. However with the nature of an on-line auction and the addition of new buyers from the US having access to the large volumes of fish produced by the offshore sector and there would be a significant loss of value added processing away from NS. This is obviously damaging to the local economy in Nova Scotia.

Local Nova Scotian buyers that will take part in an online auction should have a cost advantage (due to transportation costs) over the buyers in the US. However this cost advantage may not be enough to deter significant loss of product to the US buyers.

The loss of value added processing would have little effect on the fishermen in the industry but would have serious effects on others in the industry such as processors and fish plant workers.

The Gloucester auction is willing to setup any degree of operation in NS that would provide a flow of product through the GSDA. It could be either a full-scale auction in Nova Scotia or simply a truck that ships fish down to Gloucester. A transportation service such as this could be very useful to the fixed gear fishermen in Nova Scotia. With such a transportation service the fishermen would be limited to selling to the

GSDA only, and would not be able to make use of the Portland exchange or other buyers in the US.

Large volumes would not be needed in this case and the service would allow access to the benefits provided by the auction, such as increased prices. But it would also involve the loss of the value-added processing of the fish produced by the fixed gear sector. However the volumes produced by the fixed gear sector, if lost, would not significantly damage the fish processing industry in Nova Scotia.

The Gloucester auction takes place at 6:00am (Eastern). The Yarmouth to Portland ferry leaves Yarmouth at 10:00am (Atlantic) and arrives in Portland at 8:00pm (Eastern) and then from there the fish would have to be trucked to Gloucester, which would take approximately 2 hours. That places the fish at the Gloucester auction at 10:00pm assuming that customs takes little time. The result is eight hours for the exchange to do whatever is necessary (weighing, grading etc.) to put the fish on the auction. The significance of this is that, from leaving Yarmouth it only takes 21 hours before the fish can be auctioned in Gloucester. This is assuming that the Gloucester auction is able to receive the truck and complete the necessary processing after 10:00pm. Otherwise the fish would have to wait until the next auction which would add an extra 24 hours before the fish could be auctioned.

Public auction (PFE)

The Portland Exchange can not open a satellite auction in Nova Scotia for a number of reasons. A board of directors runs the PFE, with members representative of the industry in Portland. This board does not have the involvement or the interest necessary to run an auction in other areas such as Nova Scotia. The purpose of the PFE is to increase the economic health of the fishing industry in Portland Maine and no effort will be made to develop more auctions in other areas.

There has been an offer by those involved in the initial development of the PFE to assist in setting up a similar auction in Nova Scotia.

With the development of a display auction in Nova Scotia the industry should benefit in similar ways as the industry in Portland because the industry in NS is similar to that of Portland before the PFE was developed. Especially in that the prices currently received by the fishermen are not representative of the quality of the fish.

If there were an auction in Canada the buyers would compete for the seafood, resulting in a fair market price and the quality of the fish produced would increase. All the benefits arising from a display auction as outlined earlier in the paper could be experienced by the Southwest Nova Fishing Industry.

The largest drawback with the development of an auction in NS, from the standpoint of the fixed gear fishermen, is the necessary involvement of the offshore draggers to produce the volume needed for operation of a display auction. The involvement of this large sector of the fishery would dilute the voice of the fixed gear fishermen in the operations of the exchange. This may not be a problem because of the nature of the hook and line fishery and the superior quality it can produce. In theory the fish from the fixed gear sector should take center stage at the auction and demand the highest price.

Cooperatives:

If there were a co-op in Nova Scotia it could ship the product to New England, to different areas in Nova Scotia or anywhere else there is an opportunity. The co-op would have the choice of shipping to the Portland Fish Exchange, the Gloucester Seafood Display Auction, or any other buyer in New England. Both auctions in NE are open to Nova Scotian fish. Which auction would be preferred would depend on the recent general pricing at each auction. This is reflected by the needs of the buyers in each respective area, and would change over time.

With a co-op the fishermen can ship their product to either auction, a buyer in NS or even to buyers in other parts of Canada; anyone that is offering a good price. The fishermen are in control of the co-op and the co-op can provide the fishermen with an accurate timely understanding of the current prices and opportunities within the industry.

If the best opportunity is the auctions in New England shipping to the auctions should not be a problem. The Yarmouth-Portland ferry leaves Yarmouth at 10:00am (Atlantic) and arrives in Portland at 8:00pm (Eastern). For the fish to be shipped to the Portland Fish Exchange the fish would only be transported about one kilometer from where the ferry docks, but would have to wait sixteen hours before the auction would start (12:00 noon). For the fish to be shipped to the Gloucester exchange it would need to be transported about two hours south to Gloucester. Once there the fish would only wait for eight hours until the auction starts the next day (6:00am).

A full size co-op in Southwest Nova Scotia would benefit the fishermen involved in many ways. Among all the physical services such as ice, fueling, weighing etc. being provided at cost over the long run, the co-op could, and would if a full-size operation, provide a marketing service for the members. This marketing service could devote the time and money towards understanding the dynamic seafood market on behalf of its members. It is currently time consuming and inefficient for each individual fishermen to research the market place looking to maximize their income.

With a full-scale co-op in operation the members would have the ability to work together and function as a single seafood producer. If all the members of a co-op marketed their fish together there is a possibility of developing brand recognition. For example, the fish sold through the New Grimsby display auction in the United Kingdom is packaged in boxes with a logo identifying the auction. It is believed that the logo has had a positive influence and is thought to have yielded higher prices for the fishermen selling through the New Grimsby auction. A similar strategy could be easily adopted by a co-op in Nova Scotia, and could even be more effective due to the fact that it is not always the same fishermen selling through an auction, whereas it would basically be the same fishermen producing for a co-op. With the fishermen working as one in a co-op the possibility of brand recognition and the potential high quality of the hook and line fishery, could be used to tap into the lucrative white table markets.

The NS fixed gear fishermen could set up a co-op which could make use of economies of scale to place the product on the floor of one of the exchanges while removing any commitment to do so in the future if it becomes unfeasible. The co-op could sell to the buyers in Nova Scotia or anywhere else if desired. Essentially all that is needed for the co-op at startup would be a freezer truck that could transport fish and the organization can grow from there. If the co-op transported fish to a buyer that can provide ice, either in the US or in NS, the truck could be filled with ice on the return trip. This would eliminate the immediate need for the co-op to own an ice machine and the cost to return the truck would be justified.

The Portsmouth co-op handles all the transportation, unloading, and weighing needed for its members. However what services the co-op

provides depends on the size of the co-op, and how many employees the co-op has to do the work. If the labor force is insufficient then the fishermen who are members can do the work themselves using the co-ops equipment. The co-op is their company and they are the ones who suffer if it fails from abuse of this privilege. As seen with the Portsmouth co-op there is little abuse of the co-op's assets by the fishermen.

The size of the co-op and therefore the services provided by the co-op, depend on the amount of funding available. The co-op could provide any service required by the fishermen, but to do this there is a cost and to provide the funding there must be adequate membership to provide the capital expenses and volume to cover the operating expenses.

General Analysis:

If Nova Scotian fishermen were to sell their fish at an auction in the US through a cooperative, there is the question of competitiveness of the fixed gear fish in the US market place. An interesting point here is that there is very little presence of a hook and line fishery in New England. Otter trawl is the primary gear type used to catch ground fish. This could provide a competitive advantage for the fixed gear sector in Nova Scotia given the potential quality produced by the fixed gear fishery.

There was once a tendency for resistance to Canadian fish at the exchange, but this resistance no longer exists according one of my interviewees. During one of my interviews in New England the interviewee took the point of view that Canadian fish is getting better where now there is a move to a stronger focus on quality. The interviewee stated 'the fish would represent themselves and it doesn't matter where it came from. When the buyers want high quality fish, they will buy the highest quality available regardless of where it is from. Good fish is good fish, and there is no preference for where the fish comes from'. However this point of view should be taken with some skepticism. With the name of the boat listed on the lots, the buyers will know that the fish is from Canada. If the buyer is loyal to local fishermen then there will be a tendency for the buyer to pick fish of close to equal quality that are from local sellers before they pick fish from Canada. This tendency might cause a general lower price to be received by Canadian fish.

A major drawback to selling in the US is that if the auction does not develop a price satisfactory to the fishermen and the fishermen decides not to sell he/she will have to find another buyer in the US or truck the fish back to NS. The time it would take for a the fish to be transported to the US and then back would degrade the fish to the point of very low quality and a good price would not be possible. Once in the US the Nova Scotia sellers are at the mercy of the auction.

The concept of the remote auction could be very attractive to many buyers. The ability to get access to species landed in another area when landings are low in the buyer's area, can be a very powerful attraction.

As a hypothetical example, if there were a remote auction that was connected to auctions all over the Atlantic coast of North America, most buyers would be involved simply because of the access to product. If most seafood buyers in the area covered by the auctions (ie. The whole Atlantic coast of North America) were involved in a single auction the competition would be fierce, and the fishermen would be virtually guaranteed a good price for their fish. This would attract most sellers to the auction.

With most buyers and most sellers involved in a single auction, that auction would have the potential to take over the market share of the volume of seafood being bought and sold all over the Atlantic coast of North America. This situation could easily cause public auctions such as the Portland Fish Exchange to shut down due to lack of volume.

The point I am trying to make with this example is that even though a public auction is desirable because of its fairness and loyalties to the community, there is the possibility that a large and efficient private auction could take over the auctioning part of the seafood industry.

I believe there is a possible danger to the fish stocks with the ability for buyers to gain easy access to a particular species of fish from other areas with out significant extra costs. If the stock of a species is in danger of collapsing due to high demand, the processors that deal with that species can get more from another area with little extra costs, because the processor would not have to go through fish brokers. If the species is provided to the final consumer at little increase in cost the demand for that species will continue to be high relative to the catch in that area. If the demand for the species stays high there will be increased pressure on that species in the alternate area (The new area which the processors/retailers get their product). This situation could possibly cause the stock in the alternate area to collapse as well. The only way for a fish stock to survive without government regulation is for the demand to be decreased by the final consumer. The only efficient way for this to happen is to increase the price to the final consumer. The current system used by brokerage firms can effectively increase the price of fish when it must be imported into an area to satisfy the demand.

There is a possibility for a full-scale display auction to exist in Nova Scotia where the Nova Scotian buyers would compete for Nova Scotian product. This NS auction could develop the competitiveness of the industry in the same way as the Portland Fish Exchange, and it could provide the same benefits experienced by the seafood industry in Portland. A major benefit with making use of a Nova Scotian auction is that the fish will stay in NS and further value-added processing will be completed in Nova Scotia.

The drawback to this from the standpoint of the fixed gear fishermen is a need for the large turnover of product necessary. However as I illustrated earlier in this paper, it would be possible for a small volume auction to work if the product was directed to high quality neiche markets. The higher dollar per pound commission available should be enough for the auction to operate, but obviously an extensive feasibility study would be needed on this matter.

There are two large obstacles to the development of such an auction. The need for high quality neiche buyers, and the transportation infrastructure needed to deliver the product.

Buyers would likely be from all over Canada as well as the US, and these buyers would not likely be willing to travel to NS in order to attend the auction, for this reason a remote auction would be useful to attract distant buyers. The loss of value added processing from this auction would not be a big issue because of the low volumes involved.

Transporting to neiche buyers would have to be very efficient, quick and extreme care must be taken so that the product is not damaged. Such a distribution network would be complex and expensive to develop, especially with the likely transportation of live fish long distances from the auction.

Recommendations:

During the initial stages of this paper I interviewed several key members of the Fundy Fixed Gear Council. In those interviews I gained a good understanding of the loyalties of the FFGC. It was made clear that any recommendations made would need to meet certain criteria. For any option to be accepted by the FFGC fishermen, that option must meet these criteria, which are listed here in order of importance.

- It must be community minded, in that it must provide a positive net benefit for the community as a whole.

- It must provide competitive prices for the fish.
- It must provide some kind of marketing service that would allow individual fishermen to know they are getting the best possible price for their product.
- It must leave the fishermen open to take advantage of new opportunities as they arise.

Long Term Recommendations:

I believe that due to the higher prices that would result from a display auction, the Nova Scotian fixed gear fishermen would greatly benefit from the establishment of a display auction in Nova Scotia. This auction could be either a large full-scale auction with the involvement of the mobile sector or a low volume neiche auction. A neiche auction would benefit the FFGC much more than a high volume auction because the neiche auction would result in higher prices and the FFGC would be more involved in its operation.

Due to the nature of a display auction with the tendency for a increase in prices received by the fishermen and an increase in quality received by the buyers an auction would provide benefits for NS industry similar to those experienced by the Portland industry. This should help to lobby support for the development of the auction. However these benefits may not reach far outside the fixed gear industry with a low volume neiche auction.

I must recommend that such an auction should be governed by a quasi-public board like that of the Portland exchange and make use of a remote auctioning system to attract buyers. Such a display auction would meet all the criteria listed above. The structure of the governing board would ensure that it would be community minded. The competition of high quality buyers would result in competitive prices, representative of the quality of the product. The close contact between buyers and sellers would provide market intelligence, but this market intelligence would not likely develop into new opportunities outside of the auction. The fishermen would also not be committed to selling to the auction if a more attractive opportunity arises.

A more detailed study into the feasibility of a low volume display auction in Nova Scotia is needed and much investment would be needed throughout its development, but the potential benefits to the fishermen and the community would be great.

Short Term Recommendations:

The development of an auction in Nova Scotia for any reason may not be feasible or if feasible it would take some time. The frustration of the fixed gear fishermen is reaching critical levels, for this reason, and three others, I recommend that the FFGC develop a fisheries cooperative.

The auction could be developed (assuming feasibility) through the co-op. In a way the FFGC could use the co-op as a platform from which to develop the neiche auction. The co-op could use the voice of its members more efficiently as one then as individual fishermen and could be used to lobby support for the auction's development.

The co-op could evolve into a neiche auction, or the auction could be developed completely separate form the operations of the co-op. I recommend that the auction should be kept separate from the co-op because of the issues with governance and the opportunities provided by the co-op on its own as I will explain later.

Secondly until the auction is developed, the fixed gear fishermen can take advantage of the US market through the co-op. By pooling their fish the fishermen could cheaply and efficiently ship their fish to the New England auctions, and in the short term, take advantage of the benefits they offer.

Once the NS auction is operational and the co-op has been kept separate the members of the co-op could still choose between the neiche auction in NS, the US auctions, or any other potential market options, whichever would maximize the return to the co-op members. With the manager of the co-op exploring and researching new opportunities on behalf of the co-op's members, the members would be open to take advantage of any new opportunity.

Lastly, the co-op could be very effective in developing brand name recognition for the FFGC as a full size cooperative. If the members of the co-op worked together towards this goal it would be easy to develop and market their fish under a brand name. Once a brand name is established, buyers could easily be attracted to an auction that deals with the FFGC fish, and development of the neiche auction would be made easier. The co-op would have the potential to market its fish to white table buyers on its own or through the auction.

The co-op at startup would likely only consist of a truck that is used to transport fish to either the US market or another market in NS. Therefore the capital cost and day to day expenses at startup should be low. This would enable the co-op to exist with only a few members needed to make the initial investment. If the co-op is successful from startup more members would join and the co-op could grow to a full size operation providing many various services to its members including marketing, the development of brand name recognition, and eventually a low volume neich market display auction.

Appendix #1: How do the display auctions work?

With the auction the bidding starts knowing the species and what is available for sale that day (# and size of lots) then the bidding starts. Whoever wins the bid can purchase any amount of the available fish at that price (all remaining fish is then auctioned again). If the winning bid is at a premium price then the buyer will only purchase the highest quality fish, and then bid a lower price when the rest of the lots are auctioned. This is the basic idea behind the display auction and is the mechanism of its benefits. Portland Fish Exchange was the first to develop this process for the auction and it has since become a model for other display auctions such as the Gloucester Seafood Display Auction. Other auctions have adopted this method of auctioning with only minimal changes made.

There are many similarities in operation between the Gloucester and the Portland auctions. However there are differences, which arise from the different policies, adopted by each exchange. Below is an attempt to give a general description of how these auctions operate with the differences described.

The boats that supply the Gloucester auction are both day and trip fishers, where about 50 to 60 % consist of day trip fishermen. The Portland exchange deals with about 50% trip fishermen that spend more than five days at sea, 40% that fish for less then five days but more than one, and 10 % are day fishermen that don't spend overnight at sea. There seems to be a large difference between the boats that land their fish at each exchange but this difference does not seem to make a difference in how the auctions are operated.

At the Gloucester auction there has not been a minimum or maximum amount that the auctions will handle but a 60lbs minimum is preferred (for no real reason), but I saw a tote with about 4lbs of Halibut to be auctioned. I can see this could be cumbersome for the auction if most lots were small because this would take more time in handling, which costs money. Small lots such as this are acceptable on occasion. As for the larger lots, they are typically divided

into smaller lots (ex. 300 to 900lb lots) to accommodate the buyer. The lots are given a lot number listed with the weight contained in the lot, the species, general size of the fish, and the name of the boat that caught the fish. The Portland exchange treats the lots in the same manner however the 60lb minimum is much stricter then with Gloucester.

The Gloucester auction takes place at 6:00 am (Eastern). The Portland auction takes place at 12:00 noon (Eastern). This allows any buyer to attend both auctions.

At both auctions the buyers are given a chance to view the lots up for auction before the auction starts. In order to remain objective the grading is done either by the buyers themselves or an independent fish grader. The buyer may get any person or as many people as he/she wants to do the grading. This would allow the buyer to be sure of the quality of the fish even though (with remote auctions proposed by Gloucester) the buyer could be half way around the world. The key to ensuring accurate objective grading is to have an independent company (or two or three) at the auction that can do the grading for the buyer if he/she is not able to see the fish themselves.

For both auctions the buyer will have a listing of all the lots available for auction along with the quality grading assigned to each lot. The grading may vary between buyers dependent on who does the grading or what criteria is used, but the lots are usually assigned similar grading, and each buyer has his/her own list with the corresponding grades. There is also list of which lots are up for auction on a large screen behind the auctioneer, along with the price of the last winning bid.

The biding starts on all lots of the same species and size (large Cod, then small Hake, then large Hake etc). The actual process of the biding is like the old English cry auction, in which all the bidders are in a room with an auctioneer in front stating the price which increases until there is only one bidder left. The last bidder wins the bid at whatever the auctioneer stated as the last price. The buyers or a representative of the buyer who is doing the bidding (This is a common practice at both auctions) at the Gloucester auction have a table with a headset attached to a phone to which they can be in contact with their office or boss during the auction.

This process would be slightly different if the auction was a remote auction. The bidder at a remote auction would be watching a computer screen with the price displayed on the screen increasing slightly every few seconds. The bidder would then tap a button when the price gets too high. The last bidder remaining wins the bid at the displayed price. With a remote auction the location of each lot would also be displayed so that the buyer could pick the lots which are at the most convenient location for him/her.

The winning bidder has the choice of purchasing any number of the lots left available. The buyer states which lots he/she wishes to buy, these lots are then removed form the screen. Regardless of what lots or number of lots purchased by the bidder, the price for all lots purchased is at the price of the winning bid. The remaining lots are then up for auction once again and the bidding starts over.

When there is only a limited quantity available of a certain species and the buyer wishes to get as much as possible, the buyer will bid high so that he/she will get first pick at the lots and possibly purchase all of the remaining available fish. If the buyer wants quality, then they will bid high so that they get first choice at the best quality lots (those are the ones that go first).

Appendix #2: The FFGC and MRC

The Fundy Fixed gear Council (FFGC)

The FFGC is a management board for the fixed gear fishery on the Nova Scotia side of the Bay of Fundy. The FFGC is an organization dedicated to community based fisheries management. Members of the FFGC are fishermen within the inshore fixed gear fleet. The area the FFGC covers is between the Digby Yarmouth county line and the New Brunswick border. The FFGC represents about 260 fishermen, including 157 handliners 7 long liners and 18 gillnetters. Each fisherman that is a member of the FFGC belongs to one of three participating fishermen's organizations: the Islands Inshore Fishermen's Association, the Bay of Fundy Inshore Fishermen's Association, or the Maritimes Fishermen's Union. The FFGC is a democratic organization with the members of the board elected from these three organizations.

The FFGC has made developments designed to enhance the fixed gear fishery. Two of these developments were the creation of a marketing cooperative directed by the FFGC, and the creation of the Bay of Fundy Marine Resource Center (MRC) in conjunction with the Western Valley Development Authority.

There has been little activity by the marketing co-op since its development, but the MRC has taken on a life of it's own since its inception in 1998.

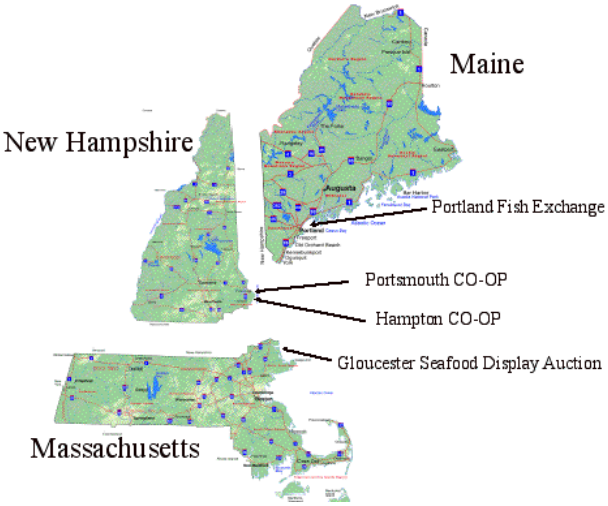
The Bay of Fundy Marine Resource Center (MRC):

The original purpose of the MRC was to give the Digby and Annapolis region the ability to take a greater role in the integrated management of its coastal resources. The MRC serves many purposes including organizational development support, referral services, conflict resolution and facilitation. Within its facilities the MRC houses Geographical Information systems technology (GIS), a research lab for local testing and research, and a classroom for marine related training.

The Bay of Fundy Marine Resource Center is an attempt to connect community-based management regimes and government organizations. One of its functions is to bring together key people and information into one building. Within the MRC the following tenants hold offices.

- DFO Small Craft Harbors
- Nova Scotia Department of Fisheries and Aquculture field office
- Oceans Act Implementation Office
- Bay of Fundy Fisheries Council
- Fundy Youth Initiative.
- St. Francis Xavier Extension Department
- Integrated Coastal Planning Project: Dalhousie University.

Appendix #3: Map of New England


Maine
New Hampshire
Portland Fish Exchange
Portsmouth CO-OP
Hampton CO-OP
Gloucester Seafood Display Auction
Massachusetts